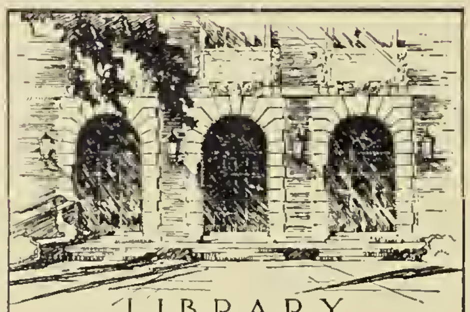

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OF THE

American Medical Association

A MEDICAL JOURNAL CONTAINING THE

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BY

GEORGE H. SIMMONS, M.D.

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Original Articles

THE TREATMENT OF BURNS AND SKIN GRAFTING.

HALDOR SNEVE, M.D.

ST. PAUL, MINN.

There is perhaps no more frightful accident than a severe burn of large area. The intense suffering of the patient, and, in case of recovery, the hideous deformity left, render these accidents peculiarly distressing. In spite of all our pastes and powders, salves and solutions, the mortaltiy in burns involving more than one-third of the body surface is nearly 100 per cent., and in many cases the agony of redressing these wounds is so great as to lead physician and patient alike to pray for a merciful termination by death. Dupuytren's classification of burns into six degrees was cumbersome, and modern writers have adopted Boyer's and speak only of three degrees. In the following description, hyperemia of the skin will be considered a burn of the first degree, destruction of the epidermis shown by vesication, second degree, destruction of the derma, third degree, and of the deeper tissues, fourth degree.

CASE 1.—In August, 1902, M. O., aged 21, a railroad fireman, came to St. Joseph's Hospital in St. Paul, severely scalded by steam over practically the whole trunk, with the exception of a small part of the lower abdomen (Figs. 1 and 2).

Treatment and Result.—Seventeen days after the accident, under the most approved modern methods of treatment with carbolized vaselin, zinc oxid salve, picric acid wet dressings, various dusting powders, together with supporting treatment of strychnia, iron, etc., and normal salt solution as drink and by enema, the patient was reduced to a moaning, babbling skeleton with swollen ankle and knee joints, coated, cracked tongue and lips, septic temperature, exhausting sweats, rapid, feeble pulse, with albuninuria and large amounts of colored matters in the urine. Morphin was administered as frequently as we dared, but it only benumbed the faculties without relieving the consciousness of the ever-present pain. The shrieks of the patient when we removed the dressings, after thoroughly soaking them with normal saline or boracic acid solution, added to the horror of the situation.

Observation of a considerable number of burns had shown me that the burns of the face when left exposed to the air speedily crusted over and healed rapidly underneath Nature's own dressing, while burns of no greater depth or area on the trunk or limbs treated simultaneously with occlusive dressings, dragged along interminably.

The moisture from the perspiration and the exudation from the wound being retained, every dressing speedily became a wet poultice, and it was a logical step to assume that the toxemia resulting in emaciation, fever, and nephritis was due mainly to absorption from the wounds. Death being apparently a matter of a short time to the patient, we removed the occlusive dressings and *exposed his wounds to the air.* In order to aid Nature to form scabs over the freely exuding surfaces various dusting powders were applied; the stearate of zinc finally being chosen as least liable to cake or to irritate. The patient sat up in an invalid chair propped up and tied for ten days and nights, a nurse carefully drying up the exuding spots with gauze sponges and then dusting on stearate of zinc; when a collection of seropus formed under a crust, the parchment-like scab was removed, the surface carefully cleansed with sponges dipped in normal saline solution and powder reapplied until we had thin, dry, brown scabs firmly adherent to the granulating surfaces. In October the patient was well, with flexible scars freely movable and only thick under the right axilla, where the burns extended down into the subcutaneous tissues. This patient was in my office in March, 1905, and in most excellent condition; none of the scars had ulcerated, as is so frequently the case when keloid masses result.

CASE 2.—In December, 1902, F. W., aged 29, while scraping hogs, fell into a vat of scalding water at Swift's plant; he quickly scrambled up on the side of the vat, but his fellow workmen were so horrified as to be unable to assist him, so that he fell in again; this time, however, he was pulled out and brought to St. Joseph's Hospital, where I saw him.

Treatment.—He was given a bath in normal saline solution, put into a room which we kept heated to 90 F. and higher, and given strychnia and enemata of normal saline for the shock. While in the ambulance he had been given a hypodermic of morphin for a burning sensation, which began about forty minutes after the scald; in the night he received a quarter-grain dose for his restlessness more than for pain. The pain became severe on the evening of the second day after symptoms of shock had passed away, and a quarter grain of morphin was administered; this dose was repeated on the evenings of the succeeding six days, although severe pain only continued about twelve hours (Figs. 3 and 4).

In order to stimulate the areas of skin only scalded to the first degree and less, to increase of function, alcohol rubs were frequently administered. The blisters were carefully opened and contents expressed as rapidly as formed, but ultimately nearly all lost the epidermis. Stearate of zinc was assiduously dusted on exuding surfaces until adherent dry crusts were formed and the patient sat up in bed most of the time so that as little of the burned surfaces should come in contact with the clothes as possible.

Result.—The urine was heavily charged with coloring matters for a time, but albuminuria did not occur. On the fifth day he developed a cough and labored respiration, which we interpreted as an infarct of the lung; these symptoms soon passed away. The patient left the hospital Jan. 15, 1903, the burned areas healed with smooth, flexible scars, which have since given no trouble of any kind.

CASE 3.—On January 23, M. B. L., a middle aged merchant, was severely scalded by steam on both hands and on face, and sustained scalp and facial wounds in a railway wreck. In attempting to grope his way out of the car in which he was imprisoned he shoved nearly all the skin of his wrists and hands forward to the tips of his fingers where it lay folded and wrinkled up much like a pair of gloves about to be donned. He arrived at St. Joseph's Hospital late in the evening.

Treatment.—The oily dressings on the hands were removed and a wet picric acid dressing with oiled silk covering substituted, and ¼ grain of morphin administered. The patient slept fairly well during the night, and the next morning the hands were immersed in a bowl of picric acid solution before removal of the dressings; the removal of the wet gauze from the raw surfaces caused such exquisite pain that the patient said that he could not endure a repetition of the process without chloroform. The hands were washed in normal saline solution, carefully dried and exposed to the air, stearate of zinc dusted on, and the arms supported in such a way that the raw surfaces were kept from touching anything. Morphin was given that evening but was not required thereafter. All blisters that formed on face and hands were carefully clipped off and the surface powdered.

Result.—In four days the patient was up and about and in three weeks he left the hospital with the burned surfaces all crusted over and healing far advanced. He was encouraged to move hands and fingers freely and in this way stiffness of the joints was avoided. Six weeks after the injury, the hands were healed with the same smooth flexible scars secured in Case 2.

Case 4.—On the morning of July 26, 1903, Mr. E. H. aged 24, fireman, was frightfully scalded in a railroad wreck. Practically the whole body was scalded to some extent; the entire back was scalded to the second degree, as was most of the posterior surface of the right lower limb; a space the size of a hand on the left hip, and one half that size on the thigh, were burns of the third degree; an area equal to the palm of the hand over the middle of the left leg exposed the bone, and the dorsum of the foot, especially at the bases of the toes, was charred to the hard tissues below (Fig. 5.)

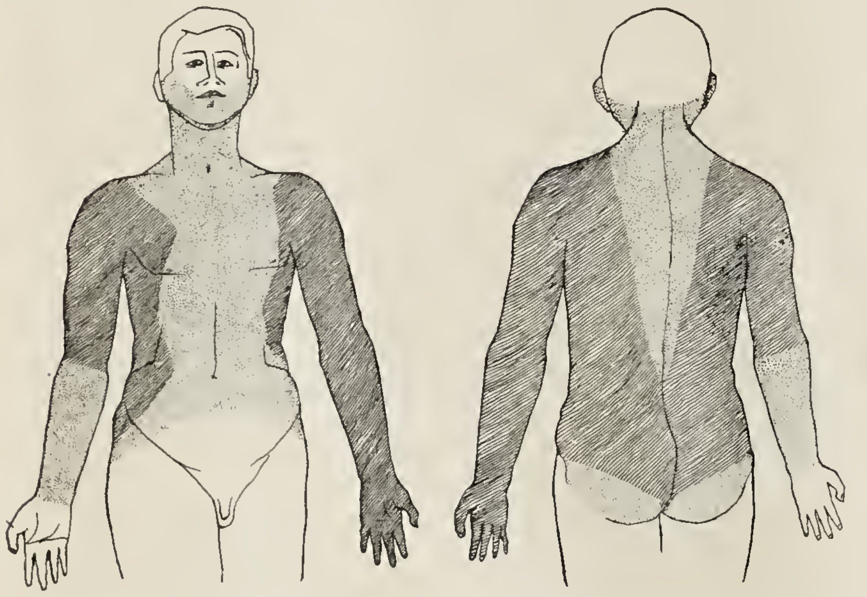


Figure 1. Figure 2.

Figures 1 and 2.—The light stippling indicates a burn of the first degree, and the lines a burn of the second degree; there is, besides, a large area around the right axilla of the third degree.

Treatment.—Immediately following the accident there was considerable shock. Strychnia and morphia were administered hypodermically, and as soon as the patient reached St. Joseph's Hospital large quantities of normal saline solution were given. Considerable pain was experienced beginning about three hours after the accident continuing up to midnight. Morphin was required for the pain the next day, but none was required thereafter although there was some suffering from the inflammatory reaction for a time. The anterior surface of the body being comparatively free from burns the patient slept on his abdomen all of the time, the left leg suspended by slings from cradles which kept the bed clothes from touching the body at any point burned; warm water bottles to the feet and inside the tent thus formed, together with a small heater in the room kept the temperature up.

Result.—The patient had no albuminuria, and after the first few days no pain, and was discharged from the hospital recovered seven weeks from the date of admission. Soft, smooth flexible scars except a small hard scar at base of left middle toe.

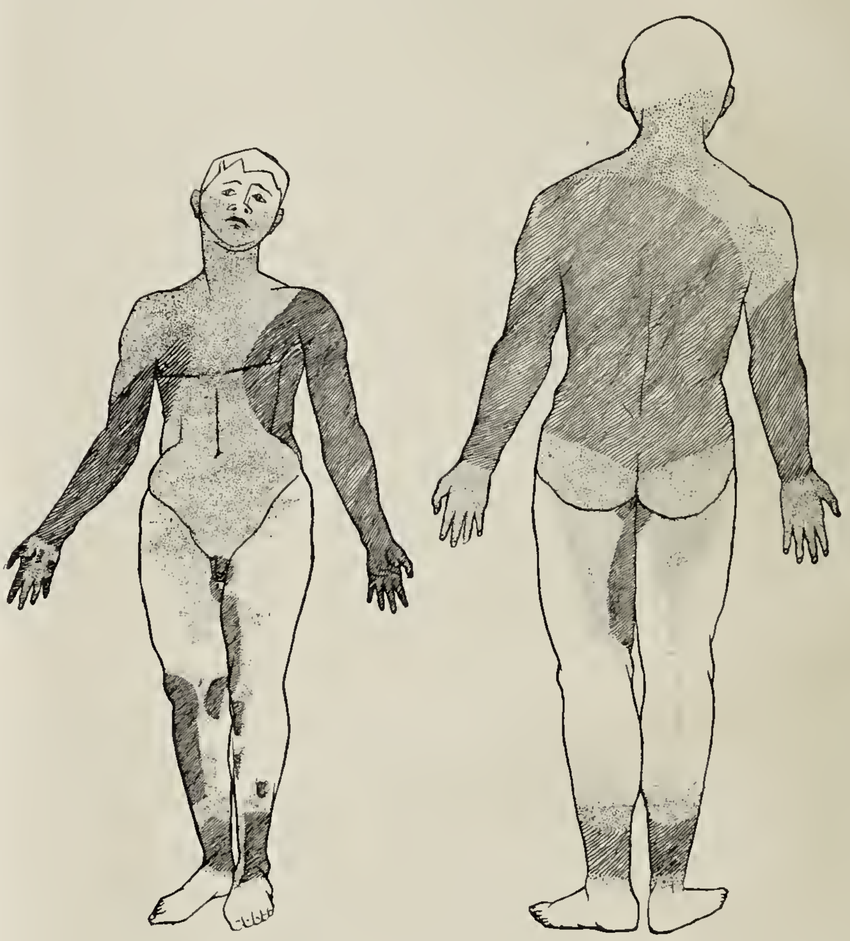
Case 5.—A. K., a middle aged man employed at Swift's packing plant was scalded by hot steam to the second degree over dorsum of right arm and back.

Treatment.—The patient came to my office and was given a supply of stearate of zinc and directed to go home, to expose the right arm and half of his body to the air and to sit by the kitchen stove. Dr. F. J. Savage visited him once and clipped away all the blistered epidermis and found the patient carrying out instructions.

Result.—In three weeks the patient returned to work with the burned area dry and crusted over and the greater part healed. The final recovery was delayed one week longer, but the result was apparently perfect.

Dr. Savage has since treated two minor cases of first and second degree burns according to this method neither of which required analgesics and both recovered within two weeks.

The first three of my cases demonstrated the value of this method of treatment to Dr. Ancker, Superintendent of the St. Paul City and County Hospital, and he introduced the treatment there.


Firgure 3. Figure 4.

Figures 3 and 4.—Showing the extent and degree of the scald. The light stippling indicates burns of the first degree, and the lines those of the second degree.

The first three patients submitted to this treatment at the City and County Hospital were all burned by a gasoline explosion. One was an old man 81 years of age, bedridden, and suffering with pyelocystitis from vesical calculus, who was burned over head, face, chest and arms. The soft parts of the right hand and wrist were charred and the only treatment would have been amputation had his general condition permitted. In spite of his feebleness he lived a month with all the burns healed except the right forearm and hand. His son, burned over legs, forearms and face, recovered promptly and left the hospital in three weeks. The housekeeper, Miss H., 33 years old, was burned over the whole body, mainly to the second and third degrees and lived six days, having never recovered from the shock. She was conscious most of the time and did not suffer pain.

Case 6.—J. K., aged 28, was burned over the whole posterior part of the body from her dress catching fire (Fig. 6). Considerable areas of the entire thickness of the skin were destroyed around both axillæ, on the buttocks, and on the feet.

Treatment.—The patient slept on her abdomen for three months and, indeed, much of the time since then. The granulating areas were kept clean; sponge and tub baths of normal saline solution being used at intervals to cleanse the whole body and to soak off some of the scabs; stearate of zinc and powdered aseptic vegetable charcoal were used to assist Nature in forming dry closely adherent crusts. No skin grafting was practiced, because we could not secure the skin, but the sores all finally healed, and even the deep scars over the charred spots were freely movable, flexible, and smooth. Slight albuminuria and chromaturia appeared at times when the little lakes of seropus were not cleaned out promptly. Some trouble was experienced in keeping the temperature of the room high enough during the first month. As soon as possible the patient was made to walk about daily. During the healing process some pain was complained of, but morphin was only required a few times the first three days.

In August, 1903, a still more frightful burn was admitted.

CASE 7.—Mrs. E., aged 39, sustained a charring of the right hand and forearm and a burn of the second degree of the arms and face and a burn of the third degree involving the whole anterior surface of the body, from the neck to the knees, from her dress catching on fire (Fig. 7). Shock prevented the initial suffering, and after it passed off she only had severe pain one day requiring morphin, and later the pain due to the swelling around the burned areas from the inflammatory reaction, so that analgesics or narcotics were only sparingly used. The patient suffered considerably from nervousness and weakness during her stay at the hospital, but, all in all, hardly suffered any pain during the entire period.

Treatment and Result.—Exposure of the patient to high temperature in a room, with local heat to the head and feet, combined with the free use of normal saline solution as a cool drink and in enema removed the initial shock in three days. All blisters were cut away as formed and zinc stearate was dusted on the exuding surfaces. The areas where the whole derma was destroyed were simply exposed to the air and the discharges removed with gauze sponges and full baths in normal saline solution. Burns to the fourth degree were treated to peroxid solution at intervals. The baths were greatly enjoyed by the patient and seemed to refresh her greatly; after the bath the granulating surfaces were carefully dried with gauze. The exuding serum formed a collodion-like membrane over the granulations and epidermization proceeded briskly. The granulations were small, firm, red, and healthy-looking. At the end of three months all the burns were healed except an area over the abdomen about ten inches square and small spots on both breasts. The right forearm and hand were mummified and Nature began to indicate where she would amputate just below the elbow. For two months we had made ineffectual efforts to secure skin for grafting. The patient was emaciated and weak and died from exhaustion and nephritis four and one-half months after admission.

Remarks.—We feel confident that this patient could have been saved had skin grafting been practiced, as her general condition was fair and the urine free from albumin and casts up to within three weeks of her death, with the exception of the first month, when albuminuria was noted ten times.

Two other adults died from burns during this period. A watchman was burned to the third and fourth degrees all over head and face, destroying the eyes, and to the second degree on both arms and hands, in a gasoline explosion. He became delirious on the third day and remained in stupor until he died, presumably of meningitis, twelve days after the accident. The last patient was a man who fell into the vat at Swift's plant in which the patient in Case 2 was scalded. This man was literally cooked and died of shock within six hours. Of the fourteen deaths, nine were of children; all of whom were extensively burned. Five died of shock within the first twenty-four hours, leaving four that died in spite of the method of treatment. The baby shown in Fig. 8 developed a gastroenteritis on the nineteenth day, while everything seemed to be progressing as well as possible, and died of exhaustion and toxemia within three days. The facility with which this four-year-old child adopted and maintained the position shown in the illustration was remarkable. This accident occurred in the heated term and we believe that the diarrhea was a foreign invasion unconnected with the burn. Considerable pain was mani-

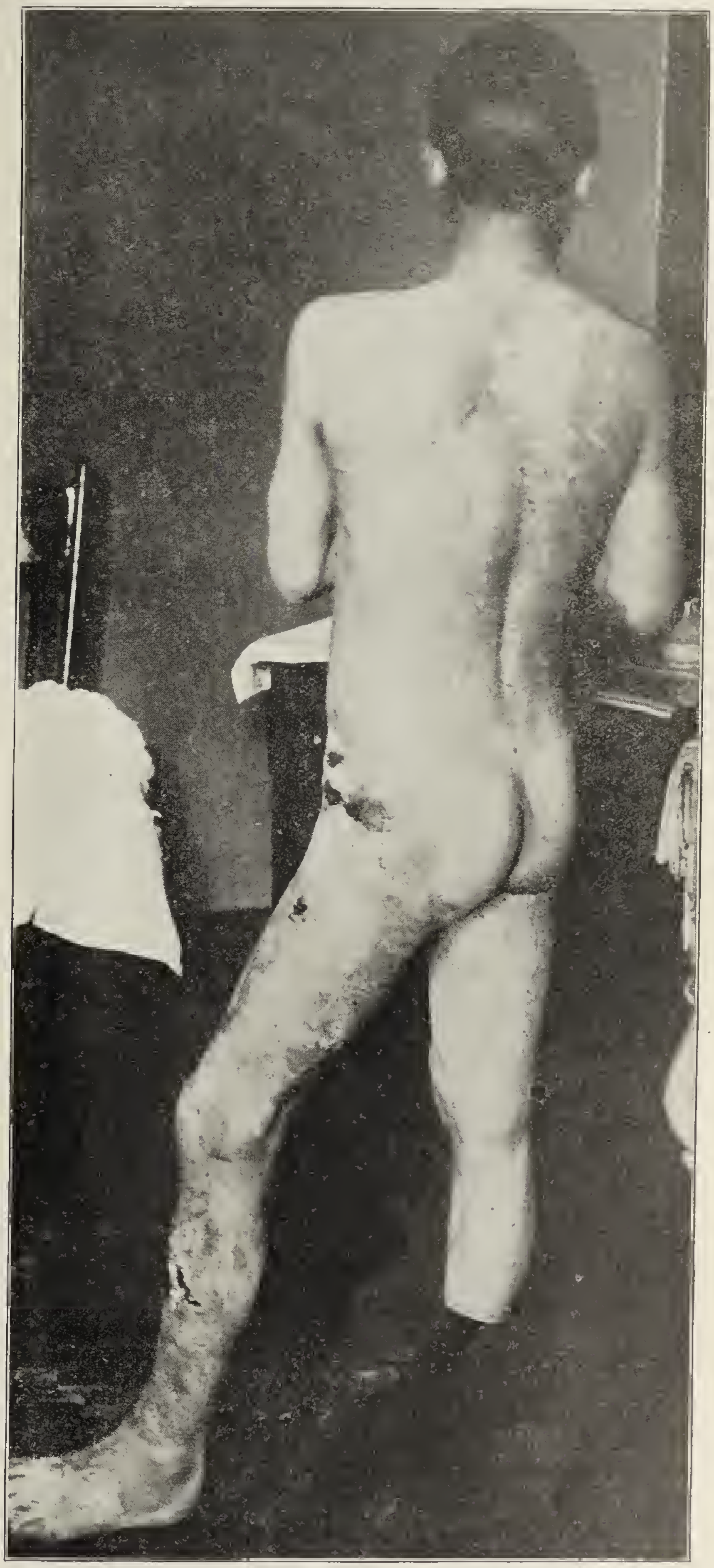


Figure 5.—This photograph was taken on the twenty-fourth day after the accident. Most of the burns are healed.

fested from the second to the sixth days, but the toxemia from absorption after the first week was very slight judging from pulse, temperature and urine.

On the fourth of July a boy was burned over one-half of the body and head from a powder explosion, mostly to the second degree. The eyes were destroyed, the face greatly swollen, and toxemia was constant until his death on the nineteenth day; the pulse ranged from 100 to an uncountable rate, the temperature attained 107.6 in the axilla and the stools and urine were frequently involuntarily voided. Catheterization revealed granular casts and albumin in the scanty urine. Delirium and stupor supervened near the last. This patient undoubtedly died of meningitis from direct extension through the orbit.

The two remaining children who died succumbed on the fifth and ninth days respectively, one from the combined effects of shock and toxemia, the other from symptoms of pneumonia.

Case 8.—Mrs. A. was burned by gasoline explosion over one-third of body, involving the greater part of upper half anteriorly and on right side. The burns of the second degree healed in four weeks, while the granulating areas of the third degree were crusted over.

Treatment and Result.—This patient required morphin the first three days, but after that suffered very little beyond discomfort. The initial shock was treated by high temperature of the room, local heat to head and feet, and normal saline solution in baths, enemata, and as a drink. The after treatment was the same as in preceding cases. The patient refused skin grafting and left the hospital in good condition before the granulating surfaces were entirely healed.

Case 9.—B. S., aged 18, suffered from gasoline burns involving right upper quarter of body. The whole right hand and arm swelled up to double the normal size on the second day after the accident (Fig. 9).

Treatment and Result.—Under the same treatment as in the preceding case all the burned surfaces had healed at the end of two months, with the exception of a large surface on the anterior aspect of the right shoulder extending toward the chin and neck. A peninsula of new skin extended down through the center of the area almost dividing it into two parts. Unsuccessful efforts were made to secure permission to graft skin but the patient's friends were dissatisfied with the progress of the case and she was taken home where a course of occlusive dressing treatment with all sorts of salves was practiced from August 22, 1904 until the last of March, 1905, then she came into the hands of Dr. Brimhall, who promptly sent her to St. Joseph's Hospital where, with the assistance of Dr. O'Brien, Thiersch grafts were applied, with the most happy results. A strange feature of the case is that apparently little or no progress in healing had been made during the seven months that she was at home. During this period she suffered considerable pain.

SUMMARY OF CASES TREATED IN HOSPITAL.

Sixty-three patients were treated at the City and County Hospital from Jan. 1, 1903, to Jan. 1, 1905, according to the open air method, with fourteen deaths, nine of which occurred in children. Two patients died in the ambulance or immediately on arrival. Not all of these sixty-three patients were extensively burned, but twenty-five burns involved one-fourth and more of the body surface and the rest were severe enough for hospital care. The fact that pain only lasted a short time, that nothing further than keeping the wounds clean was required, that stiffness in nearby joints from disease did not develop, and that the time required for healing was shortened about two-thirds as compared with our usual method, make the results noteworthy. Up to this time out of more than 85 cases the only deaths are those mentioned.

DEATHS.—CITY AND COUNTY HOSPITAL.

Shock—Seven within twenty-four hours; two within six days. Meningitis—One on twelfth day; one on nineteenth day. Pneumonia— One on ninth day. Gastroenteritis—One on twenty-first day. Exhaustion—One after four and a half months. Total—14.

Drs. H. J. O'Brien and J. B. Brimhall have treated five cases of extensive burns by this open method, with the same freedom from pain and with the same favorable outcome. A number of other patients treated by various other physicians could be cited but these will suffice. Over seventy-five patients had been treated up to Jan. 1, 1905.

SKIN GRAFTING.

In extensive granulating areas where skin grafting was required we were confronted by the problem of an occlusive dressing, something we were anxious to avoid; we therefore determined to try the open air method in this procedure also and the first grafting made on an injured foot was entirely successful. Thiersch grafts were placed on the denuded surface, which had been prepared in the usual way and then simply exposed to the air. Small blisters of tissue-paper thickness filled with a seropurulent exudate appeared on some of the grafts; these were opened and the contents carefully expressed with gauze sponges. Drs. O'Brien and Brimhall then grafted a boy with an extensive burn according to the method of Reverdin with excellent results. In this case the small grafts were simply planted on the granulations.

The next case was a granulating area in the popliteal space of the left leg about 6x9 inches where the skin had been torn off by machinery. In this case, the tops of the granulations were shaved off with a sharp knife and the raised borders scraped with a sharp spoon. Not a blister raised on these Thiersch grafts and the patient was discharged in two weeks, during which time he slept on his abdomen.

The next case did not turn out so well; a wound on the right heel was grafted first with puppy skin and later with human skin from patient. Both grafts were partially unsuccessful owing to an infection, which existed on the leg, of *Bacillus pyocyaneus*. Dr. Wagner of Breslau calls attention to the fact that this particular infection is fatal to success in skin grafting.

In St. Paul, Drs. Harry O'Brien, Brimhall, Cook, Shimonek, Quinn and others, have used this method of skin grafting with success. Owing to the fact that Dr. F. Brüning,[1] assistant surgeon in the Lutheran Hospital at Freiburg, has published a short article detailing the excellent results attained by exposing grafted areas to the air, thereby antedating this communication, it is unnecessary to describe further our cases, although the exposure of freshly grafted skin to the air was probably practiced first in St. Paul. In the future, with so successful and easy a method of treating grafted wounds, the immense areas especially resulting from burns should be grafted with the skin of the lower animals. There is so much fat in the skin of dogs that this does not so readily lend itself to grafting, but the skin under chicken wings, and that of guinea-pigs and of rabbits ought to furnish material in plenty. Snipping off small bits of skin (Reverdin) and placing them on the granulating areas will assist us in cases in which Thiersch grafts cannot be obtained, and I think that this method will become popular again. The best preparation for a skin graft, in my opinion, is the open air treatment of the wound, as the granulations become small, firm and hearty looking, and the borders from whence epidermization proceed, take on new life and activity. When Thiersch grafts have been applied to the surface they will adhere firmly after from six to eight hours. The serum that oozes out between and around them should be carefully wiped up with gauze sponges, and the contents of small vesicles that may arise should be expressed. Cleanliness must be observed and if necessary a wire cage may be strapped over the parts during the night.

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[1] Zentralb. f. Chir., July 30, 1904.

GENERAL CONSIDERATIONS.

In burns involving large areas of skin the patient is exposed to death first, from shock; second, from toxemia due to absorption of poisons from the injured surfaces; third, from loss of function of the absent skin covering; and fourth, from exhaustion due to the long continued fight for recovery.

SHOCK.

So much has been written on this subject and so much awaits us that the last word can not yet be said, but it seems as though we ought to be able even now to form a fairly definite opinion of the pathologic conditions that confront us in shock, and to base a rational therapy thereon. If we take into consideration the physiologic experiments of hydrotherapy, in conjunction with the numerous experiments on shock and especially those of Sonnenburg, Crile, and Kinnaman, the following propositions may be assumed: Mental and physical irritants, either singly or conjointly, may produce a vasomotor paresis which results in lowering of blood pressure and in the accumulation of the blood in the splanchnic veins, i. e., "the patient is bled into his own belly." A fall in body temperature occurs which is due to an interference with the heat center in the spinal cord or to loss of function of the nerves in the cold anemic skin which convey temperature impressions to the center, whereby heat production and radiation are controlled. The lack of blood in circulation does not leave fluid enough for the heart to work on, and, mechanically in great part, produces the weakness marked by a small, rapid, thready pulse.

The brain torpor, faintness, the condensation of the perspiration on the skin (cold sweat), the intense pallor, the coldness of the extremities, the weakness of the heart and the compressibility of the pulse, are the signs which indicate anemia in these regions. In fatal cases of shock, there is often a peculiar motor restlessness in which the patient threshes about, throwing his limbs from side to side, uttering Oh! Oh! my! Oh dear! etc. at frequent intervals, and seems unable to fix his attention for more than a moment; these signs are almost pathognomonic of impending death. The fall in body temperature seems to me to be the most dangerous condition in shock, and this is borne out by Kinnaman's studies; this experimenter was able even to produce shock by simply lowering the temperature. In some cases of drowning, Dr. Bailey of Lake City, Minn., was able to resuscitate patients apparently dead by using hot wet blankets and hot baths. The "gilded boy," and animals varnished over the skin died of lowering of the body temperature.

The first indication in treatment would be to use some agent to combat the fundamental disturbance, which is the vasomotor paresis; the only drug that can at present be recommended for this purpose is adrenalin cautiously administered, and I would warn against the use of whisky, morphin, strychnia, digitalis, atropin, etc., because, while they act as heart and circulatory stimulants when the body is in normal condition, in shock they are only poisons to the susceptible nervous system already struggling under a load threatening to overwhelm it. Far better for our purpose is the symptomatic treatment of the resultant conditions. To assist nature to drive the blood out from the abdomen, give drinks and enemata of cold normal saline solution which add volume to the circulating medium; chafe the hands and feet and apply local warmth to the extremities, and especially to the nape of the neck. To counteract the fall in body temperature, use the hot bath and maintain a high temperature in the room. Finally, in order to add more fluid to supply the heart with something to work on use saline transfusion or hypodermoclysis.

Toxemia.—Occlusive dressings have been used from time immemorial in the treatment of burns, because, probably, the exclusion of the burned surface from the air relieved the pain; an added reason seemed to follow the discovery of the bacterial origin of suppuration and the presence of large numbers of germs in the air, but surgery now has discarded the use of Lister's spray, and few surgeons fear that colonies of germs will alight on the surface of a wound and infect the field of operation. It is rather hands, instruments, sutures, and the skin from which needles carry cocci deeper, to which scrupulous attention is paid. Ever since Krönlein and Volkmann's strife in the 70's was decided in favor of occlusive dressings as against the open method of treatment, we have been haunted by visions of the swarming enemies in the air ready to swoop down on us, and one of the first questions that occurs to the practitioner who sees a wound treated open to the air is, "how about infection?" In the first hours of a burn, the areas are effectually sterilized by the heat and when the eschars separate, nature has granulations which protect against invasion, and drainage can easily be kept almost perfect. In burns of the second degree, the crusts formed by Nature, perhaps assisted by some dusting powder, renders the field impregnable to germs which require heat and moisture for their development.

The sudden deaths that occur in the early period of a burn have been the subject of considerable study; Schultze and Wertheim, and Ponfick and v. Lesser explained them by alteration and destruction of red blood corpuscles, but the examination of the blood in cases of burns by Hoppe-Seyler showed that this theory is untenable. Silberman and others thought that capillary thrombi formed of altered red corpuscles lodged in the vital organs producing areas of anemia followed by inflammation. Sonnenburg ascribes death to sudden overheating of the blood with subsequent cardiac palsy, or to vasomotor paresis and apparently demonstrated the last experimentally. Anjello and Parascandola experimented with burned tissue injections into healthy animals and conclude that toxic ptomaines are absorbed which cause poisoning and death. Bardeen[2] found cloudy swelling and degeneration of the glandular organs, especially, in an examination of five small children dying from burns, and concludes also that death is due to a toxemia, indistinguishable from that which occurs in acute infections, but, curiously enough, he considers this the result of the high temperature. Von Dieterichs[3] says that the changes in the blood after burns are fully explained by the formation of hemolysins and hemoagglutinins, and the formation of other cellular poisons. It must be apparent that any ptomaines formed from destroyed skin and other tissues are kept in contact with the raw surfaces held suspended in a warm solution, under the most favorable conditions possible for absorption, because the oily occlusive dressings prevent the profuse perspiration from carrying them off by evaporation. That ptomaines or other poisons are absorbed under these conditions is shown clearly by the history of Case 1 and that of all the burns I have treated before that, as well as by many others of the seventy-five in this series: Whenever a crust formed over a granulating cavity which did not allow of the escape of the secretion, we could look for a rise in temperature, or even for albumin and casts in the urine. On the other hand, when the surfaces were kept clean and drainage was perfect, there was absence of these signs of intoxication. In Case 1, the promptness of absorption can be shown by an acute poisoning which resulted from the application of a picric acid wet dressing; in twenty minutes the patient was delirious, the temperature and pulse both shot upward and the urine had turned to a yellowish-green solution which almost solidified on boiling. Diffuse hemorrhages in the internal organs are almost characteristic of death from anthrax, or some equally violent toxic disease such as farcy, malignant smallpox or indeed any disease characterized by the rapid and free formation of toxins. Unfortunately, we were not allowed a single postmortem on the patients that died, but the absence of tarry stools, collapse, and bloody diarrhea in these cases would point to the non-occurrence of duodenal ulceration.

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[2] Johns Hopkins Bull., Apr. 1, 1897.

[3] Wein. med Woch., Nov. 21, 1903.

To avoid toxemia then, we must not interfere with free perspiration; the secreting surfaces must be kept clean, and, to avoid infection, we must render the surface dry and impregnable to germs and aid Nature in forming the adherent crusts under which healing goes on so rapidly, as pointed out years ago by John Hunter. Of other emunctories, the kidneys and bowels can perhaps be best assisted by free flushing, and what is better than large quantities of normal saline solution?

Loss Of The Function of The Absent Skin Coverings.—The far-reaching importance of the skin and its contained organs is not fully appreciated I feel sure. Aside from its function as an organ of protection and excretion, the nerve endings within it furnish the information by which both the circulation and the body temperature are properly maintained. Two pounds of sweat, is the daily average excretion besides the CO_2 and possibly other noxious gases. The importance of maintaining whatever amount of skin on the body has escaped burning in the highest state of functionating becomes manifest, and this is one of the reasons why the continuous full bath of Hebra is not the best treatment of burns; the skin works best in its natural medium, which is air. Another reason why the continuous bath is not best is that perspiration is interfered with. Cold spongings and frictions are perhaps the best stimulants to skin function and should be frequently practiced in treating burns. To supply artificial heat to the body, is another important indication and a temperature as near the body heat as possible should be maintained constantly during the first weeks of a severe burn.

Exhaustion.—Long-continued suppurative processes or even serous discharges from granulating surfaces, lead to general emaciation, weakness, and perhaps amyloid or other changes in the vital organs. The best preventive is to graft as soon as possible the surfaces which have been burned to the third degree. Nourishing diet, as much exercise as possible, and supporting measures suggest themselves.

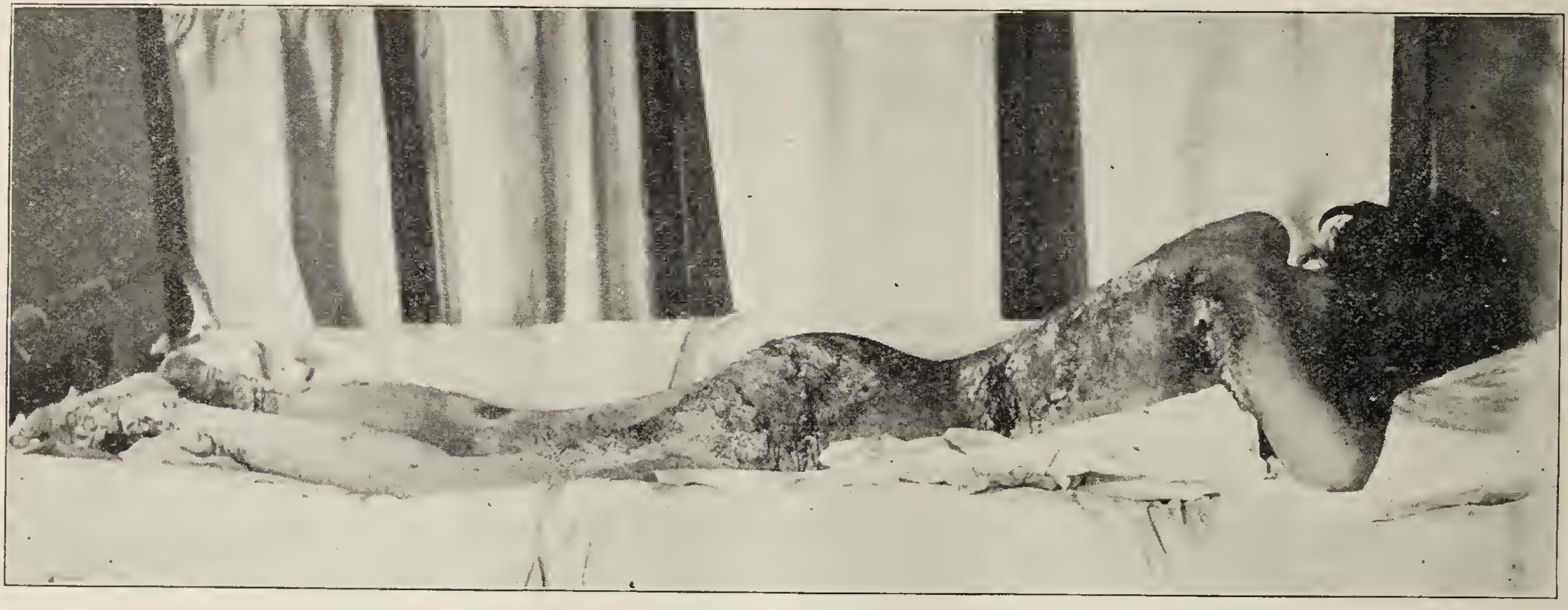

Figure 6.—Showing extent of burn in Case 6.

Open Treatment of Wounds.—For several years H. Wagner[4] has treated chronic ulcers and granulating wounds by the open method with the happiest results. He says that occlusive dressings keep the edges of the wound macerated, swollen and unhealthy so that often little or no progress toward healing is made. "In spite of antiseptic salves the secretions in the moist chamber form the most favorable nidus possible for bacterial development." "The danger of infection is practically *nil* with the open method of treatment, but naturally patients should not be exposed to erysipelas, etc. He has treated wounds on an individual with salves and the open method at the same time for comparison, and finds the open method vastly superior. Wagner leaves the wounds open by day and covers them over with some powder at night.

Oscar Barnard[5] exposes unhealthy wounds to the sun's

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[4] Zentralbl. f. Chir., Dec. 12, 1903.

[5] Muench. med. Wcchft., Jan. 5, 1904.

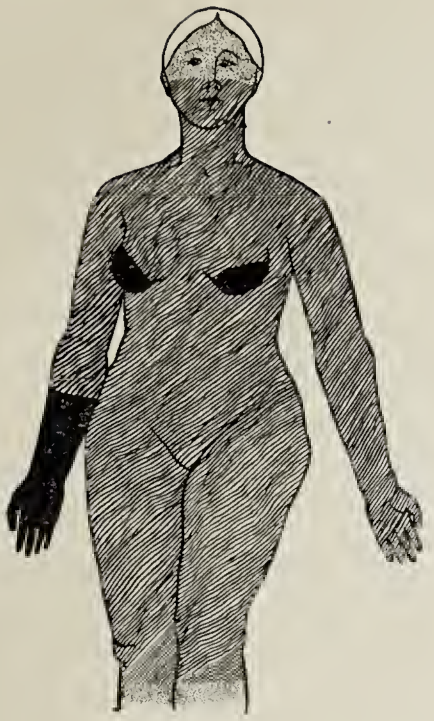

Figure 7.—Showing extent of burn in Case 7.

his modification of the open method, which consists in putting dressings and bandages over a wire cage, and sponging the wound three or more times daily with some mild antiseptic solution. "Frequently waterproof is put over the cage to keep the discharges from drying or caking." The results were to him extremely gratifying, and he notes the absence of pain during treatment, and of keloid masses and thick cicatrices which continually break down afterward. This cage method is about the same thing as Meyer's moist chamber for skin grafts.

SUMMARY.

When first seen, burns and more particularly scalds are apt to prove deceptive as regards their degree, and it is wise to withhold prognosis in the beginning. Whenever occlusive dressings are kept on, even for forty-eight hours, I am confident that these will frequently convert a first into a second and a second into a third degree burn through confinement of the perspiration and maceration of impaired tissue. One of the remarkable things in this experience with burns is the small amount

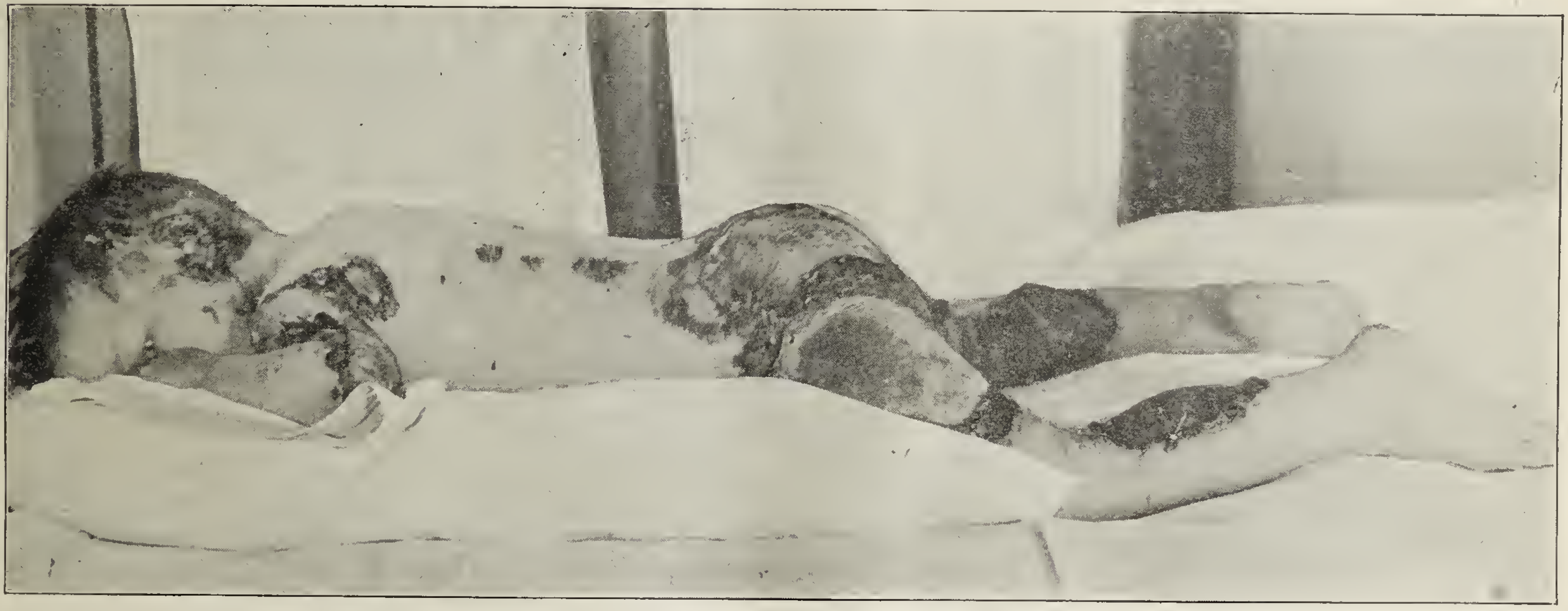

Figure 8.—Showing position voluntarily adopted by child, and extent of burns.

rays and to the air, aiming to secure some chemical effect from the first, and a drying out of the granulations by the latter. Although he claims to have practiced this method since 1902 and claims priority over Wagner of Breslau, it seems clear from his writings that he exposed granulating wounds to the sun and air more as a method of treating the granulations than as a method of securing epidermization, and then only at certain hours in the day. Brüning at Freiberg was induced to try the open method of treating wounds by Wagner, and this led him one step further, namely, to leave his skin grafts exposed to the air, as mentioned above.

That "there is nothing new under the sun" receives confirmation again in this treatment of burns: Dr. W. P. Copeland[6] of Eufala, Ala., describes two cases of minor burns, which had been treated for some time in the usual way, in which he removed the dressings and exposed the wounds to the air; pasteboard boxes were placed over them to keep anything from touching the wounds.

Twelve years later, Dr. G. Archdall Reid[7] described

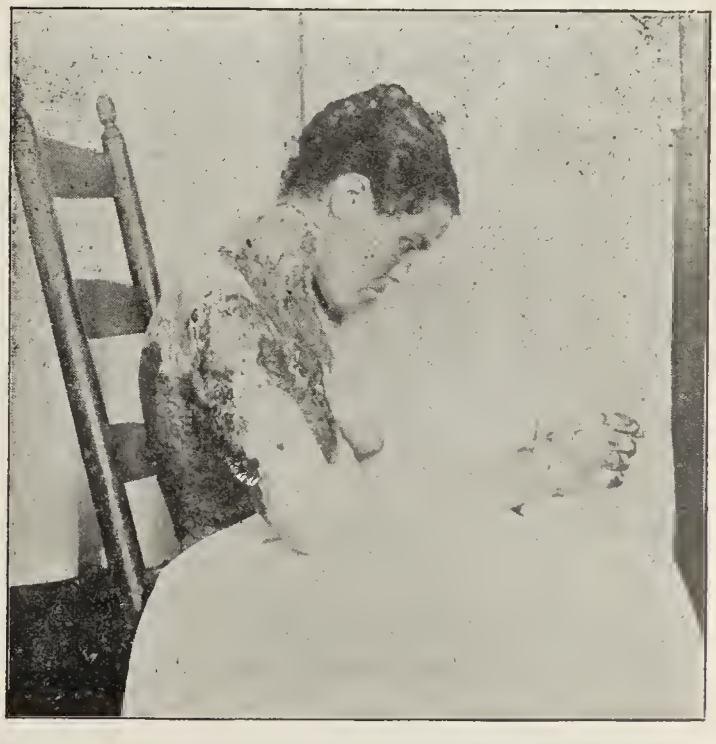

Figure 9.—Gasoline burns involving right upper quarter of body. Photograph taken six weeks after accident, showing burns of second degree healed.

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[6] Med. Record, May, 1887.

[7] London Lancet, March, 1898.

of pain suffered by the patients and its short duration when the wounds are left exposed to the air. Severe pain, when not obscured by shock, only lasts from six to twelve hours, and I think is better controlled by hypodermics of morphin than by any other measure. I would urge that as little morphin be given as possible; it should not be given when shock is present.

Another astonishing feature is the character of the cicatrices after healing. In burns of the second degree, the skin is reproduced so well that only a white color marks the scar. Third degree burns result in smooth, flexible, skin-like scars. Two factors probably account for this: First, the tops of granulations which grow into the meshes of the dressings are not torn off, day by day forming scar ridges throughout the substance of the scar which firmly anchor the skin covering and probably interfere with its nutrition; and second, Nature seems better able to control the growth of the firm, small, healthy granulations which result from exposure to the air—a marked contrast to the large flabby efflorescent masses seemingly growing without direction in the moist chamber of an occlusive dressing. The length of time for skin to cover a wound, judging from Wagner's and my own observations, is shortened about two-thirds as compared with the time required under occlusive dressings. Wagner estimates that a normal granulating surface the size of a saucer can be healed over in from eight to ten days.

First, treat the shock as indicated above.

Second, control the pain as necessary and keep everything from contact with the burned areas.

Third, keep the patient surgically clean. Ordinary surgical principles govern here as elsewhere; bichlorid of mercury, carbolic acid and other strong antiseptics are to be avoided when possible because they are such powerful cell poisons that toxic effects both general and local are to be feared; the delicate covering of granulations will not stand escharotic action without interfering with the production of smooth, flexible scars.

Fourth, give frequent cold sponge baths to the sound skin with frictions, and keep room temperature high.

Fifth, cut away all blisters, cleanse with normal salt solution, dry thoroughly, and dust all second degree burns with stearate of zinc, carefully wiping away serous exudate until dry, brown, adherent crusts are formed.

Sixth, leave third degree burns exposed without powder and keep surface clean until granulations are ready for skin grafting.

Seventh, to maintain and to preserve function, body and limbs should be exercised as much as possible; the eschars of burns to fourth degree should be removed when Nature so indicates and amputation should be performed when needed.

My thanks are due the St. Paul surgeons mentioned in this paper and to Interne Dr. C. L. Larson of the City Hospital for a transcript of the records.

RADIUM TREATMENT OF CANCER OF THE ESOPHAGUS.*

MAX EINHORN, M.D.
NEW YORK CITY.

Cancer of the esophagus is one of the most intractable diseases with which we have to deal. Not even modern surgery has succeeded in combating this disease. Gastrostomy may for a time prolong life; it is, however, connected with certain dangers and annoyances and does not attack the real focus of the disease. It is, therefore, natural for the physician to search for new means of treatment in this malady.

When Roentgen gave his x-rays to the world, I experimented with them in cancer of the esophagus and stomach. In my cases (six in all), this method of treatment was of no avail, because the tumor lies deeply hidden and is covered by other parts of the body (skin, muscles, thorax). The rays, therefore, do not penetrate sufficiently to the tumor in any considerable strength.

After Curie had discovered the wonderful radium and had found the effect of its rays to be analogous to that of the Roentgen rays, I tried to apply radium locally by means of small receptacles in affections of the esophagus, stomach and rectum.[1]

On Jan. 22, 1904, I demonstrated this method of treatment on one of my patients suffering from carcinoma of the esophagus at a meeting of German physicians at New York. Exner,[2] independently of myself, followed out the same idea and on Jan. 28, 1904, published an article entitled "The Treatment of Esophageal Cancer by Means of Radium."

Somewhat later I[3] reported the results of local treatment with radium in 9 cases of cancer of the esophagus; in 6 a marked widening of the stricture was found.

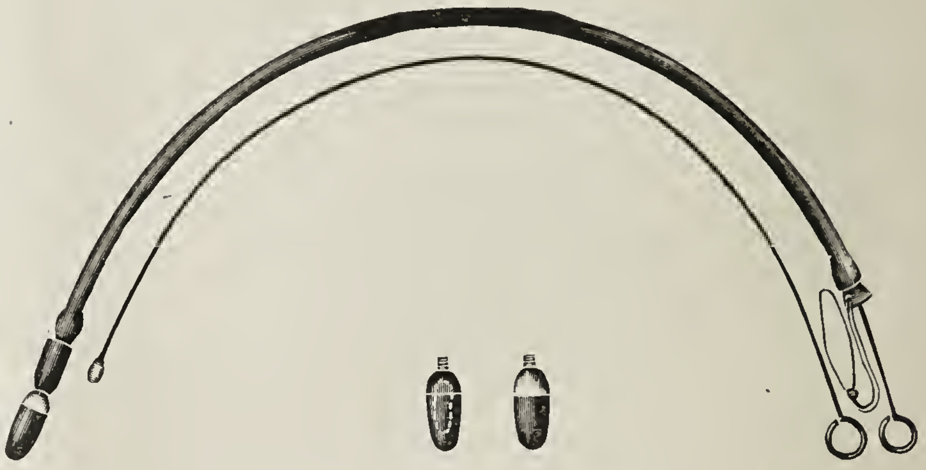

Fig. 1.—The esophageal receptacle with tubing and mandrin.

Here I would like to report on 72 new cases of cancer of the esophagus in which local applications of radium were made.

METHOD.

The radium receptacle for the esophagus consists of a rubber tube (about 17 F. diameter) which is provided with a mandrin and a capsule, the lower part of which is made of hard rubber and the upper part of metal. The two halves are screwed together. The upper part of the capsule is provided with a screw thread by means of which it is attached to the tube portion (Fig. 1).

The capsules are made in three different sizes to fit strictures of various widths.

MODE OF APPLICATION.

The radium vial is placed in the capsule of the instrument and the latter screwed tightly together. The apparatus with the mandrin, having been first immersed in warm water, is introduced into the esophagus, with the patient in the sitting position (best in the fasting condition), and is pushed forward to the stricture. In introducing it, it is best to depress the tongue with the left index finger and to hold the instrument like a pen in the right hand, compressing it somewhat so that the mandrin remains in place. When the stricture has been reached, as evidenced by the resistance, the mandrin is removed and the end of the rubber tubing fastened by means of a thread to the ear of the patient. The instrument is allowed to remain in the esophagus from one-half to an hour, according to the needs of the case, and is then removed.

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*Read before the East Side Medical Association, New York, 1905.

[1] Max Einhorn: "Radium Receptacles for Esophagus, Stomach and Rectum." Medical Record, 1904, p. 399.

[2] Wiener klin. Wochen., No. 4, 1904.

[3] Max Einhorn: "Observations on Radium." Medical Record, July 30, 1904.

When employing the larger capsule it is necessary when withdrawing the instrument to make the patient swallow when the cricoid cartilage is reached in order to avoid the resistance encountered at this spot.

After having removed the instrument, wash it, unscrew the capsule, open it, and remove the radium vial. The instrument may be easily disinfected.

The same instrument may be used in gastric carcinoma. It must then naturally be introduced into the stomach.

RESULTS OBTAINED IN THE NEW CASES.

I have lately treated seven patients suffering from cancer of the esophagus with local applications of radium. In all the diagnosis was established beyond doubt. They were all individuals who had been suffering from three to six months from dysphagia, becoming gradually worse and on examination with the bougie showed a stricture of the esophagus. In one of the patients (Mrs. M.), the tumor was seen with the esophagoscope. In the other six, the esophagus was not inspected.

Patient.—One of the seven cases (A. S.) was a private patient of mine about 75 years old.

Examination.—Nov. 10, 1904. Swallowing sound absent; bougie (35 F.) encountered resistance 15 inches from the teeth.

Treatment and Result.—He was treated for about two and one half months (from Nov. 10, 1904, to Jan. 20, 1905) with 0.05 gram of the pure radium bromid for about half an hour every second day. Exact measurements of the stricture were not made afterward. Before beginning treatment the patient could hardly swallow fluids. During treatment his condition improved, he could take fluids without difficulty and even semi-solid food was well borne. Even after stopping the applications of radium, the ability to take fluid and semi-solid food remained, and the patient was entirely free from pain until the present time. In consideration of the age of the patient no exact measurements of the stricture were made, so that we are unable to say whether the stricture widened. Nevertheless, the result is satisfactory.

The other six patients were treated at the German Hospital, New York. In each 0.25 gram of Curie's radium of 20,000 activity was applied to the stricture for one hour daily. Once a week, exact measurements were taken to determine the distance of the stricture from the teeth, as well as the circumference of the stenosis by means of bougies of different size. The radium applications were made by means of the esophagus receptacle. The instrument was pushed forward to the stricture and allowed to remain there. I would like to emphasize the fact that no force whatever was used either in the introduction of the instrument or in the measurement by means of the bougie. We can therefore exclude any mechanical dilatation of the stenosis.

Neither in the 7 cases just reported nor in the previous 19 have I ever met with any disagreeable accidents that might be ascribed to the radium treatment.

In the following table I have tabulated the 6 cases treated in the German Hospital:

TABLE OF CASES OF CARCINOMA OF THE ESOPHAGUS TREATED BY MEANS OF RADIUM AT THE GERMAN HOSPITAL.

Name.	Age.	Length of Treatment.	Result of Examination by Bougie.		Remarks.
			At Beginning of Treatment.	At End of Treatment.	
1. A. S.	52	Feb. 22–Mar. 9, 1905 (16 days).	Bougie 32 F. encounters resistance 15¾ in. from the teeth.	Bougie 39 F. encounters resistance 16½ in. from teeth.	Patient feels somewhat better.
2. A. G.	55	Mar. 9–Ap. 6, 1905 (29 days).	Bougie 20 F. encounters resistance at 17⅛ in; bougie 39 F. at 16½ in. from teeth.	Bougie 42 F. encounters resistance at 17½ in. from teeth.	Patient has improved considerably. He can swallow better and has no pain.
3. A. K.	38	Mar. 22–Ap. 20, 1905 (30 days).	Bougie 20 F. encounters resistance at 17 in. from teeth, but passes thro'; bougie 39 F. can be inserted only to 16½ inches.	Bougie 43 F. passes into stomach without resistance.	Patient has gained and can now take semi-solid and even solid substances.
4 C. M.	39	April 6–28, 1905 (23 days).	Bougie 20 F. encounters resistance at 14¾ inches; bougie 39 F. at 16½ inches from teeth.	Bougie 52 F. passes into stomach without resistance.	Patient feels better; she can take semi-solid and some solid food.
L. Z.	50	Ap. 13–28, 1905 (16 days).	Bougie 26 F. encounters resistance at 15 in.; bougie 39 F. at 14 in. from teeth.	Bougie 52 F. passes into stomach without resistance.	Patient can now take solid food; has gained 8 pounds.
6. B. B.	53	Ap. 10–28, 1905 (19 days).	Bougie 25 F. encounters resistance at 11 in. from teeth.	Bougie 35 F. encounters resistance at 12½ in. from teeth.	Ability to swallow has not particularly improved. Has brought up at times a little bloody mucus, especially after the radium treatment; slight rises in temperature occasionally.

In looking over this table we find that in all 6 cases the stricture has improved under treatment. In 3 (Cases 1, 2, 6), the stricture did not become passable; the bougie, however, could be introduced deeper. In the other 3 (Cases 3, 4, 5), the stricture became passable for rather thick bougies (43-52 F.).

The improvement could usually be observed after a week's treatment, at times even earlier.

All these patients felt better than they did before treatment; 5 could swallow better; 3, in whom the stricture had become entirely permeable, were able to take semisolid and even solid food. The pain was less in five of the six patients.

The results obtained are very satisfactory, since we have to deal with an affection which has not been amenable to treatment until now. In the methodical application of radium we have the means to influence favorably the course and seat of the disease and to retard its progress, even if at present we can not entirely remove it. This mode of treatment is certainly destined to play an important rôle in the therapeutics of cancer of the esophagus and deserves to be tried on a large scale and in a thorough manner. Should my results be confirmed by other clinicians, radium therapy should take a high rank in the treatment of cancer of the esophagus.

The time is not far distant, writes E. L., in the *Alkaloidal Clinic*, when our great and grand profession will stand shoulder to shoulder, not only for the advancement of medical science, but for the protection of each other against unjust demands by the public and against unjust and selfish criticism by the members of our own profession.

WANDERING OR ABERRANT UTERINE FIBROMYOMATA.

VAN BUREN KNOTT, M.D.
SIOUX CITY, IOWA.

This paper will be limited to a consideration of that rare form of tumor known as wandering, aberrant or sequestrated fibromyoma of the uterus.

An attempt to review the literature on the subject has proved distinctly disappointing, as, although the files in the Surgeon-General's Library at Washington and the Newberry Library in Chicago have been thoroughly searched, but few cases have been found, and these are reported in an incomplete and unsatisfactory manner.

The tumor under discussion presents all the gross and microscopic appearances of a true uterine fibromyoma and yet it is found to have absolutely no connection with the uterus or its appendages. A tumor originating in the uterus as a subserous fibromyoma, has been transplanted to another site, frequently to tissue widely different from that from which it sprung, and from which it derives its support and nutrition. In a few reported instances the tumor has been found lying free in the peritoneal cavity having formed no adhesions or new vascular connections. The action of the uterus in thus transferring to some neighboring and passively receptive organ this unwelcome and troublesome guest with the demand that the tumor not only be allowed to remain in the new location but that nutrition and all future care must be furnished by the new parent reminds one forcibly of the habits of the cuckoo which deposits its egg in the nest of an obliging neighbor, calmly leaving the hatching and rearing of the offspring to the unsuspecting friend.

These tumors are usually found in women whose uteri contain one or more fibromyomata in addition to the one which has been transplanted; but there may be only a single tumor and after separation from the uterus that organ will present no evidence of myomatous degeneration.

As is well known, subserous fibromyomata as they develop and follow the line of least resistance, which leads toward the abdominal or pelvic cavity, frequently become pedunculated, and it is a matter of common observation to find these pedicles long and more or less attenuated. This condition having been acquired, what, then, is the next stage in the evolution of the growth? In those cases in which the tumor has been found loose in the abdominal cavity and has established no new attachment or source of vascular supply, it has been very small in size, as in the case reported in a personal communication by Dr. J. M. Baldy of Philadelphia, where at the operation for the removal of a myomatous uterus he found a small detached fibroid the size of an English walnut lying entirely free in the cavity. These small, loose tumors having no blood supply could not survive for any length of time, and I am inclined to believe that they may have become loosened during the examinations to which these patients have been subjected, as many of them are examined more than once and often days or weeks before coming to operation. That such separation could occur spontaneously may not be denied but that such a mass detached from all vascular connections could long survive is incredible. I incline to the opinion that the train of events leading up to the loosening of these tumors from the uterus and their attachment in a new location (and most of them are so attached) is as follows:

With the elongation and attenuation of the pedicle, the fibroid mass acquires a steadily increasing range of motion which permits it to come more or less readily in contact with neighboring viscera. This contact, which at times may be quite forcible when the tumor is large, may induce a sufficient degree of peritoneal irritation to cause lymph exudation and a low grade localized peritoneal inflammation with the perfectly logical sequence of adhesion occurring between the peritoneal surfaces of the tumor and the organ with which it is in contact.

This adhesion eventually becomes quite firm and organized and it is not long until the growth is obtaining a new blood supply from the tissues of its foster parent. The adhesion having thus become firm and resisting, if much traction on the mass results it will be made manifest at the point of weakest attachment, which is now the long thin pedicle. This, being no longer equal to the strain periodically put on it, by changes in posture or by the mobility of the part or parts to which the tumor is attached, ruptures, and the detachment of the myoma is complete.

A tumor connected to the uterus by a long slender pedicle may be released by spontaneous rupture of the latter and its range of motion and power to excite peritoneal irritation, having been thus increased, it sets to work the agencies just described and rapidly finds a new place of abode and a new source of nutrition.

Turner[1] in an article on this subject has advanced a somewhat similar opinion. Roger Williams[2] states that these tumors are particularly prone to inflammation which may go on to gangrene and also that calcareous degeneration commonly occurs in them.

These growths may be found attached at any point within the pelvis. Williams states that they may be found graffed to the great omentum, Douglas' pouch, the pelvic margin, the intestines, etc. The diagnosis of these tumors, of necessity, will usually be made at operation, for an accurate conclusion as to the real pathology could scarcely be reached by examination.

The treatment may be briefly stated to consist in their removal unless the patient presents some definite contraindication to operation. Their attachment to important organs, with whose function they may interfere, and their tendency to inflammation render them more formidable than an ordinary uterine fibromyoma.

The earliest recorded case which I have been able to find was reported by West[3] in 1858. He describes a case in which he found a fibroid the size of a walnut in Douglas' cul-de-sac and supported by a "false membrane between the uterus and rectum."

Sir James Simpson[4] in 1871 reported having seen "several instances" but gave no details.

Porter[5] in 1875 exhibited at the thirty-seventh annual meeting of the Dublin Obstetrical Society a specimen of a fibrous tumor which he had found lying free in the abdominal cavity of a woman aged 50. Cases have also been reported by Eve,[2] Depaul,[2] Wylie,[2] Rindfleisch,[2] Homans,[2] Wallace,[2] Routh,[2] and Nélaton.[2]

In Routh's case, a calcified myoma the size of a turkey's egg, detached from the uterus and grafted on the small intestine, was successfully removed.

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[1] Turner: Edin. Med. Jour., Feb. 1861, p. 698.
[2] Williams: Uterine Tumors, p. 75.
[3] West: Lectures on the Diseases of Women, p. 210.
[4] Simpson: Selected Obstetric and Gynecologic Works, p. 716.
[5] Porter: Dublin Jour. of Med. Science, vol. lii, p. 247.

In Wallace's case, a calcified tumor was removed from the tissues of the brim of the pelvis.

Senn[6] reports a case in which, at a laparotomy for multiple myomata, he found in the abdominal cavity a detached tumor as large as a small pear. The apex of the tumor tapered to a small point marking the place where the pedicle became detached.

J. Whitridge Williams, Baltimore (personal communication), reports two cases in which subperitoneal myomata had formed vascular connections with the omentum and were completely detached from the uterus. Both were undergoing calcareous degeneration and were successfully removed.

Charles P. Noble, Philadelphia, who has had a very large experience with fibromyomata, reports (personal communication) that he has never seen an example of a detached myoma.

F. H. Martin, Chicago, reports (personal communication) two patients operated on by him in whom subserous fibromyomata had broken away from their uterine attachment and had established nutritive attachments to the omentum and intestine.

J. M. Baldy, Philadelphia, reports (personal communication) two cases in which he discovered at operation a small detached tumor the size of an English walnut lying perfectly loose among the intestines and states that he could not understand how they derived their blood supply. My own experience with tumors of this class is limited to two cases, a brief description of which follows:

CASE 1.—Mrs. E., aged 46, was referred to me by Drs. Bushby and Brown of Primghar, Iowa.

History.—The patient had borne five children and had enjoyed unusual health. There was nothing of importance in the previous history until about one year previously when she began to suffer with vague abdominal pains and noticed a gradually increasing tendency to constipation. These symptoms persisting, she consulted her physicians who sent her to me with a diagnosis of tumor of the left ovary. After careful bimanual examination I too came to the conclusion that the growth was of ovarian origin but could not satisfy myself as to its classification. In view of the distress occasioned by the tumor its removal was advised.

Operation.—July 19, 1904, at St. Joseph's Hospital. On opening the abdomen with the patient in the Trendelenburg position I was surprised to find the uterus with both ovaries and tubes perfectly normal. Nesting against the left side of the pelvis was a globular tumor the size of a large orange and very hard and firm. It was intimately attached to the parietal peritoneum and to the mesocolon. The adhesions binding the tumor to these structures were organized and very vascular and were cut between ligatures. Much time and patience was required to effect the removal of the tumor but it was finally accomplished and the raw surface covered with peritoneum.

Remarks.—It was only after the tumor was completely removed and in my hand that I recognized its true character. It presented all the characteristics of a large subserous myoma of the uterus and at one point tapered slightly, indicating the spot to which the pedicle formerly connecting it with the uterus had been attached. The uterus was again carefully examined with the hope of finding some slight scar to mark the former attachment of the pedicle, but none could be detected. The abdomen was closed and the patient's recovery was uneventful. The pathologist reported the tumor as a fibromyoma doubtless of uterine origin.

CASE 2.—Mrs. L., aged 57, was referred to me by Dr. George White of Plankinton, S. D.

History.—The patient was the mother of one child; she had never become pregnant again and suffered with dysmenorrhea and some menstrual irregularity, the intervals between menses being frequently a week or ten days too long. Menopause occurred at 47, since which time she has been very well. January, 1904, she noticed some beginning enlargement of the abdomen. July, 1904, she "flowed" for six days; no further discharge was noticed. The abdominal condition remained stationary occasioning no symptoms and marked by no noticeable increase in size until December, 1904, when she discovered that the growth was rapidly becoming larger. At this time, she consulted Dr. White, who referred her to me for hysterectomy. With the history of the case as a guide, a diagnosis of uterine fibromyoma probably undergoing malignant degeneration was made, and immediate operation was advised and accepted.

Operation.—Jan. 4, 1905 at St. Joseph's Hospital. The abdomen was opened, and the uterus, which contained many tumors varying in size from a walnut to a base ball, was completely removed, it being considered unsafe, owing to the possibility of malignancy, to leave the cervix. Attention was now directed to a large tumor the size of a fetal head attached to the right lateral wall of the pelvis, adherent to the parietal peritoneum and to the mesentery of the ileum and cecum. This tumor presented the characteristics of a large pedunculated uterine fibromyoma but had absolutely no attachment to the uterus or to any of its appendages, all of which had been removed without in any way disturbing the blood supply or loosening the adhesions holding the tumor firmly in position.

As in the former case, the adhesions were very vascular and the enucleation of the tumor was accomplished with considerable difficulty. At one portion of the tumor was found what was assumed to be the remains of the pedicle which had formerly formed its attachment to the uterus. The raw surfaces left after the removal of the growth were covered by peritoneum and the abdomen closed. Patient's convalescence was normal.

The pathologist (Dr. Henry Albert) reported that the tumors within the uterus as well as the detached growth were fibrosarcomata and gave it as his opinion that the detached tumor had originated in the uterus.

In neither of these two cases at the time of operation was the tumor attached to the uterus, the tubes, the ovaries or the round ligaments, nor imbedded in the broad ligament, in all of which organs myomata are frequently found.

I have taken the liberty of reporting the second case under the title fibromyoma, as although at the time of its removal it was diagnosed by the pathologist as a fibrosarcoma, I consider it quite probable that at an earlier period in its development it would have been found to present the characteristics of a fibromyoma. It is neither possible nor proper at this time to take up the question of the transformation of benign tumors of the uterus into malignant growths. That such a transformation does occur, however, I firmly believe from my experience in several cases and for that reason I include Case 2 in this report.

I wish to acknowledge the assistance which I have received in the preparation of this article from Dr. Palmer Findley of Chicago, and the excellent work on tumors of the uterus by Roger Williams, as well as those gentlemen whose names are mentioned in the text as having, in personal commmunications, acquainted me with their experience in similar cases.

Importance of Catharsis.—The intestinal tract can hold an immense quantity of fecal matter. Do not, therefore, argue that you have an empty bowel because the patient says he has had free stools. Sweep out the *primæ viæ* and then keep up normal peristaltic activity and you will discharge two cases while your rival is treating one.—*Alkaloidal Clinic.*

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[6] Senn: Pathology and Treatment of Tumors, p. 498.

THE TREATMENT OF TETANUS BY INTRANEURAL AND INTRASPINAL INJECTIONS OF ANTITOXIN.*

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Some recent laboratory studies in the toxicology of tetanus seem to offer a little more hopeful therapy than has hitherto prevailed. To make the subject clear, it is necessary to review, briefly, what is known of the micro-organism, its poison and the natural antidote. The bacillus is anaërobic, and exposure to sunlight and air are inimical to it, but it can exist, at least in the spore state, for great lengths of time in every conceivable place contiguous to man and the domestic animals. The superficial layers of cultivated earth seem to be its favorite habitat, possibly because it is said to be a normal inhabitant of the intestine of the horse and has often been found in the feces of man and other animals; nevertheless, it is not generally considered normally a parasite. With such a distribution, the ingestion of the bacillus with raw vegetables and its inhalation in dust are readily conceivable and it is hardly necessary to note that the micro-organism has been demonstrated in the human bronchial secretions. As the bacillus only needs a lesion of the skin or mucous membrane in order to gain access to the body, an explanation of the etiology of many obscure cases of the disease is obvious. In addition to the requirement of a breach in the continuity of protecting epithelium necessary for the entrance of the germ into its host, several other factors must be combined, and hence the comparative rarity of this disease.

Inoculation of a susceptible animal with a pure culture of either the bacilli or their spores, provided these are not in excessive or massive dosage—in other words, inoculation with such a dosage as would be encountered under natural conditions—results in a positive chemotaxis, and the germs are taken up and apparently, as a general rule, destroyed by the leucocytes; anything which hinders this process of phagocytosis conduces to the growth and development of the parasites and the disease.

In the course of such an inoculation experiment, the bacilli or their spores are found to become less and less numerous at the point of infection until, at the end of twenty-four hours, they cease to be demonstrable by the microscope, except within the leucocytes and by cultures. They are thus carried to the neighboring lymph nodes and to distant organs, where apparently they perish or rarely retain their vitality indefinitely; under favoring conditions in their host, such as a lowered vitality or a severe trauma, they may develop and produce symptoms or death. A guinea-pig, which ordinarily perishes within a few days or hours after inoculation, has been known to survive without symptoms for over four months after an experimental infection, and then without apparent cause develop the disease and die quickly. In man there are from time to time reported cases in which there seems to have been a very long incubation period, followed by an acute and violent development of symptoms. This, of course, is contrary to the general rule, which is that a mild course follows a prolonged incubation period. For this somewhat unusual state of affairs there are several explanations which can be reduced to almost the single phenomenon of phagocytosis. At least anything which interferes with this process, like the introduction with the bacilli of foreign bodies or the devitilization of the surrounding tissues or the simultaneous inoculation with saprophytes or pyogenic cocci, and this symbiosis is particularly favorable to the tetanus bacilli, leads to the more or less rapid development of the latter.

As deficient phagocytosis seems the most important factor in the development of the disease, the reasons for an acute course, with a preceding long period of quiescence after the original infection, are more or less obvious. The host's resistance was at first good and later becomes impaired, perhaps because of the traumatism of a foreign body which in itself favors a later lodgement of pyogenic cocci approaching from the skin or blood, or there may be a secondary traumatism or general infection of otherwise innocuous bacteria. A short incubation period and a violent course of the disease would necessarily follow a considerable mixed infection with or without an accompanying damage to or necrosis of surrounding parts.

After death, the tetanus bacilli are found most abundantly in the immediate neighborhood of the point of inoculation and less abundantly in the blood and distant organs, and they have been demonstrated to be present and virulent months after the burial of their host. In addition to the bacilli, the characteristic postmortem findings consist only in rather slight degenerative changes in the spinal ganglia. The chief interest, of course, attaches to the toxin by which all the symptoms of the disease are alone produced. It was one of the first bacterial poisons isolated and was soon proved to exert its effects solely on the ganglia of the central nervous system. At present it is of merely academic interest to note that it has been separated into two distinct bodies—tetanospasmin and tetanolysin—one producing the characteristic spasm and the other destruction of the red blood corpuscles.

The horse and man are the two most susceptible animals, while fowls are very resistant. At low temperatures, frogs can withstand immense doses, but when their temperature is raised to 37° C. their susceptibility approaches that of the mammals. Young guinea-pigs are more easily affected than older animals. This varying susceptibility is obscure, and in different animals may be due to different causes, such as fixation of the poison by other organs than the ganglia of the central nervous system, or inability of the toxaphore portion of the poison to unite with these ganglia.

A greater or less degree of immunity, as in other infectious diseases, may be produced by the repeated injection into an animal of a toxin weakened by one of several methods. This immunity depends on a substance existing in the blood and body fluids which as yet is of undetermined origin. It was once thought to be derived from the cells of the central nervous system, as an emulsion of brain tissue and toxin can be injected into a susceptible animal with negative results. Other facts, however, render this conclusion improbable and the antitoxin is now generally believed to have a multiple peripheral origin. It does not arise exclusively, if at all, in the nerve ganglia, and, although phagocytosis seems to have a very important influence on this infection, the leucocytes are probably not the sole source of the protecting body. However it may be derived, the antitoxin acts by neutralization of the toxin very much as an acid neutralizes an alkali.

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* Read before the Gouverneur Hospital Alumni Society, 1905.

A great many curious facts have been brought out by the work on immunization, but, as they have no direct bearing on the treatment of tetanus, at least so far as we know at present, they require only the briefest mention. The horse, for example, is one of the animals most susceptible to tetanus toxin and the chicken is one of the least susceptible. In the chicken, the poison can be demonstrated as circulating unchanged in the blood several days after inoculation. The horse, although far more susceptible, requires a much larger fraction of the lethal dose to give manifest symptoms than does the chicken, which gives a reaction with from one-tenth to one-fifteenth of the amount of toxin necessary to produce death. To show the same symptoms, the horse requires nearly one-half of the lethal dose. This has a bearing on the production of immunity artificially, because it has been found that for any given animal the toxin to be injected must be weakened in such a way—either by heating or by mixing with one of the iodin compounds or with varying quantities of antitoxin—as to make the "sickening" dose, or the amount which will just produce symptoms, as small a fraction of the lethal dose as possible. Then the longer the interval between the time of injection of the weakened toxin and the time when symptoms first appear and, in general, the more susceptible the animal, the better is the protective power of the serum. Without this protective substance, i. e., if it is withdrawn, the animal is much more susceptible to tetanus than an untreated animal. Moreover, during the process of immunization, an over-susceptibility is developed; that is, the animal under investigation can be killed by a fraction of the dose which would be innocuous to another animal previously treated with the endangered, immunized animal's serum. These facts and others are of importance or interest in the production of antitoxin, but apparently have no other bearing on the practical therapeutics of the disease.

There is much more direct interest attaching to the mode of absorption of the toxin. The incubation period was long a puzzle, for, no matter where the toxin was introduced into the body, provided it was not into the substance of the cord, a considerable incubation period always elapsed before the appearance of symptoms. Then it was noted that the toxin, after inoculation, could only be demonstrated in the blood and nerves, and that, as a general rule, the larger the animal the longer was the interval between infection and the outbreak of symptoms. With these slight suggestions, Marie and Morax, and later Meyer and Ransom proved the very remarkable fact that the toxin which was already known to act solely on the ganglia of the central nervous system, reached these ganglia only by way of the motor nerves. Wherever in the body it may be injected, some of the toxin diffuses through the tissues to the neighboring end-apparatus of the motor nerves; the rest of the toxin passes into the lymphatics, thence into the general circulation and out again to the capillaries, where it comes into contact with all the other motor nerve end-apparatus. From these points (under natural conditions), the toxin enters the axis cylinders of the motor nerves, through which it flows or is transmitted to the spinal ganglia. Even when injected into the subarachnoid space, provided no lesion of nervous tissue is produced, the incubation period is the same, as the poison follows the same course through the lymphatics, the blood and the capillaries, to the motor end-apparatus and thence back through the motor nerves to the cord and upward, probably in the motor tracts, to the medulla. The sensory nerves can not take up the poison and have no direct part in the process. Some of the experiments which elucidate these facts require a brief review.

It has long been known that the toxin exerted its effects solely on the central nervous system and that after death it could only be found in this system and in the blood. It can not be found, by the way, in any of the secretions or excretions, except in the urine, and then only after the experimental administration of enormous doses. Therefore, it remained to trace the progress of the toxin from the periphery to its final destination, and this Marie and Morax and after them Meyer and Ransom finally seem to have succeeded in doing. It was found that one and one-half hours after intramuscular injection in the hind leg of a guinea-pig the toxin was easily demonstrable in the corresponding sciatic nerve. If at the time of the injection the nerve were cut high up, the toxin could not be found in the nerve until after the elapse of about twenty-four hours, while if the nerve were cut six days before inoculation, or long enough in advance to insure degeneration of its axis cylinders, none of the poison was absorbed by the nerve. At the same time, if simultaneously with the injection of the toxin in the foot, the nerve were divided at about the middle of the leg, the proximal segment was found to contain no toxin, while the peripheral segment was full of it. Furthermore, when the nerve was cut off after it had absorbed and become charged with the toxin, the distal segment retained its charge, while the proximal gradually lost it, and, to supplement this, inoculation of the cut proximal end of a sciatic showed that subsequently the toxin could be demonstrated in the lumbar and then in the dorsal cord.

That the poison ascends in the cord as in the motor nerves was proved by the following experiment: Two guinea-pigs were taken and the spinal cord of one was severed at the level of the second lumbar vertebra. After the wound had healed, the sciatic nerves of each pig were inoculated with the same amount of toxin. The normal pig died speedily with general tetanus, while the other, with its cord cut, survived many days, showing tetanus only in the paralyzed hind legs, while the upper part of the body remained free from tetanic symptoms; death eventually took place apparently from exhaustion. Hence, if only the vital centers of respiration and circulation can be protected, death is at least not imminent. As a further proof of the importance of the motor nerves, it was demonstrated that a very small amount of the poison was sufficient to cause death if the toxin was injected into a motor nerve; a considerably larger dose if injected intravenously, and ten times the fatal intravenous dose was needed to cause death after a subcutaneous injection of the toxin. The length of the incubation period—that is, the time intervening between the inoculation of a motor nerve at any given point and the appearance of symptoms—was found to vary directly with the distance of the point of inoculation from the corresponding spinal ganglia. Inoculation of a purely sensory nerve yielded negative results. The poison apparently could not be taken up to the sensory nerves under natural conditions, but by direct injection into such a nerve the toxin was proved capable of diffusing through it up and down, as in the motor nerves, although more slowly. Whatever amount of toxin could be introduced into a sensory nerve, however, was always arrested in its progress to the cord by the posterior root ganglion. The discovery of this fact led the investigators to try the effect of introducing the poison between the ganglion and the cord, and the result was the discovery of a unique and frightfully painful form of the disease which they aptly called "tetanus dolorosa." The animal died without any of the usual motor symptoms, apparently from exhaustion due to extraordinarily severe paroxysms of pain in the region supplied by the afflicted nerve. The cerebral tetanus produced by direct inoculation of the brain has for some time been known as another peculiar experimental form of the disease.

From the above facts, and because even if the toxin is injected subdurally under proper precautions, there is always the usual incubation period, it follows that the course of the poison is from the point of inoculation by diffusion to the nearest muscle end-apparatus of a motor nerve; at the same time, it is taken up by the lymphatics and passes into the general circulation and capillaries to all the other motor-nerve endings. Thence it travels centripetally and only in the motor nerves to the cord and in this upward to the vital centers in the medulla. The more concentrated the poison is at any one point, and the shorter the motor nerves as in facial or head tetanus, the greater is the likelihood of a primary local manifestation of the disease. Such instances are rare, but have been reported, and this must be their explanation.

Experimentally in animals, the characteristic stiffness and spasm generally begin in the region of the subcutaneous or intramuscular inoculation, and thence extend to all the rest of the body. The differences, however, are so slight in the artificially and naturally acquired disease, and the points of correspondence in reported cases so numerous, that results obtained in animals can be directly applied to man.

Nothing has been so clearly proved experimentally as the value of tetanus antitoxin and the generally pessimistic view of this valuable remedy is largely due to faulty technic in its use, and a clear understanding of its disposition in the animal economy should enhance the regard in which it is held, although at the same time it reveals its limitations.

After the injection of tetanus antitoxin subcutaneously, it passes rather slowly with the lymph into the general circulation. The maximum amount being found at the end of from twenty to forty hours. In the capillaries, it mixes with the fluids of the tissues and by these a portion is destroyed. The major part, however, ultimately passes unchanged into the secretions and excretions, the milk, feces and urine and at the end of six days there is left in the body only one-third of the original amount. At the end of three weeks it has entirely disappeared. The nervous system takes up none of the antitoxin and only after massive intravenous injections can even traces of it be found in the cerebrospinal fluid. Subdural injections of antitoxin pass quickly and almost completely into the blood and hence it is evident that its administration by lumbar puncture as ordinarily practiced is of small value.

The amount of antitoxin necessary to neutralize a definite quantity of toxin can be accurately estimated, as can also the lethal dose of toxin for a given animal. If, now, the toxin be administered subcutaneously first, and then be immediately followed by the necessary amount of antitoxin, the animal will show serious symptoms or die. The conditions are improved by reversing the experiment and giving the antitoxin first. In short it has been demonstrated that to protect such an animal the antitoxin must be injected no more than forty nor less than twenty-four hours before administering the toxin. If a longer interval elapses, the dosage of antitoxin must be increased, in other words, it is comparatively rapidly destroyed or excreted. After an intravenous injection of a lethal amount of toxin, the elements of time and quantity of antitoxin are even more apparent, for it has been found that two minutes after the introduction of the poison, double the neutralizing dose of antitoxin must be similarly administered in order to save the animal. After the elapse of eight minutes, ten times that quantity of antitoxin is required, and after ninety minutes the intravenous dosage of antitoxin must be increased to forty times that which was required to neutralize in a test tube the given amount of toxin. Furthermore, if tetanus spores are introduced into the tissues of a guinea-pig, and the development of symptoms awaited before administering the antitoxin, the pig can only occasionally be saved even by very massive doses of antitoxin.[1] Hence, it is evident that the toxin is absorbed rapidly and soon passes into the motor nerves, that the antitoxin is absorbed slowly, especially if injected subcutaneously or subdurally, and is quickly excreted or destroyed. It is also incapable of being taken up by the nerves which have a most extraordinary and fatal affinity for the toxin. This is emphasized by the fact that if only a fraction of the subcutaneous lethal dose be injected into the sciatic nerve of a cat no amount of antitoxin, even if it be introduced immediately thereafter into the jugular vein, can save the animal. Therefore, only that portion of the poison which is at the point of infection, and that which has gained access to the blood and lymph can be reached by the antitoxin as ordinarily given. If once a fatal dose of toxin has gained access to the nerves, the outlook would be hopeless were it not for the point suggested by one of the series of experiments published by Meyer and Ransom. In the first place, they introduced a lethal dose of toxin into the jugular vein of a cat, six hours later they exposed both sciatic nerves high up and injected them with antitoxin. The cat died within the usual length of time but both hind legs, the sciatic nerves of which had received the antitoxin, remained entirely free from tetanic manifestations. After this experiment they similarly exposed and injected the right sciatic nerve of a guinea-pig with antitoxin and followed this by inoculation of the subcutaneous tissue about both feet with a lethal dose of toxin. The pig also perished but the right leg, the one in which the sciatic nerve had been filled with antitoxin, remained unaffected by the spasms which attacked the rest of the body. The experiment was repeated in two days, with the same absence of tetanus in the protected limb. One dog died, and the other finally recovered but eventually showed some symptoms in the leg which had at first been artificially protected. In other words, although the antitoxin cannot under natural conditions be taken up by the nerves, it can be operatively introduced into them and so, at least for a time, block the progress toward the cord of the possibly fatal charge of poison within them. Even after the toxin reaches the cord it should be possible similarly to block its progress upward.

Clinically, it has long been known that prophylaxis is the most effectual treatment for tetanus, and this means thorough cleansing and disinfection and bacteriologic examination of all wounds, and if the tetanus bacillus is found the antitoxin should be given immediately and repeated daily until at least two weeks have elapsed from the time of the reception of the infection. After the outbreak of the symptoms, to give antitoxin subcutaneously is useless or so nearly useless as to amount to a waste of good antitoxin, especially if the original focus of infection is not destroyed or removed. Subcutaneously the antitoxin is slowly absorbed and rapidly excreted or destroyed, while the toxin is rapidly taken up and quickly enters the motor nerves, where it is entirely inaccessible to the antitoxin. As therefore only that part of the toxin can be neutralized which is in the blood and tissues outside of the nerves, it follows that the antitoxin should be injected directly into a vein and into the tissues around the infected region. This places the medicament where it can do the most good in the shortest time, and even minutes are precious. Practically, the median basilic vein can be exposed and under proper precautions from 10 to 20 c.c. of antitoxin injected into its interior with an aspirating or large hypodermic syringe. Too little is far more dangerous than too much, as the remedy is entirely harmless and it must be present in considerable quantity when the amount of toxin, as under natural conditions, is unknown.

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[1] See article on "Immunity" in this issue of THE JOURNAL.

For this and the subsequent procedures, general anesthesia, preferably from chloroform, is imperative in spite of the danger of asphyxia, from vomiting in the presence of "locked jaws." Furthermore, the chloroform produces at least a temporary relaxation of greater or less duration and seems to that extent, to be beneficial. The subsequent nausea is also generally less than that following ether.

Then, following the suggestion of the experiments detailed above, the motor nerves which supply the region primarily infected should be exposed as near to the cord as possible and each injected by a fine hypodermic syringe with from 5 to 10 or 20 minims of antitoxin. As the usual location of the original wound is in one of the extremities this means a careful dissection of the axilla or base of the thigh. In the arm, all the nerves come together around the axillary artery and it is a comparatively simple procedure to expose first the axillary vein and then to identify the two heads of the median with the ulnar to the inner side and the musculocutaneous to the outer side and a little above, and behind the musculospiral and circumflex nerves. In the leg there is no difficulty in reaching the anterior crural nerve to the outer side of the femoral artery and the sciatic behind in the center just below the gluteal crease. The obturator can be found by flexing and abducting the thigh and making an incision high up in front of the fold produced by the gracilis and adductor magnus. The obturator foramen is felt and the nerve recognized at its upper anterior part in front and behind the adductor brevis. After isolating the nerves, a ligature is passed under each to facilitate its subsequent treatment and identification, and each is repeatedly punctured with the previously prepared hypodermic and enough antitoxin is thus injected into its substance to cause it to swell to three or four times its normal size. The loose ligatures are then left in place with the possible exception of one around the obturator, which is deeply placed and much exposed to infection. From day to day thereafter as the symptoms demand, the nerves can be drawn into sight by these ligatures and the treatment repeated. The wounds are then partially closed and dressed. Such violent manipulation and evident injury of motor nerves may seem unjustifiable, but the experimental facts seem to warrant it, and after many repetitions of the method detailed in the following cases I have never noted even a suspicion of damage or paralysis.

As the poison enters not only the nerves supplying the region primarily infected, but, by passing into the circulation, all the other motor nerves of the body simultaneously, it is evident that local nerve blocking only partially fulfills the indications. Presumably in the case of infection located in one of the limbs, a little more of the poison will gain access by direct transudation, to the local muscle end apparatus and a little earlier than will pass through the circulation to the other nerves and hence the necessity of stopping the local and major charge first. To prevent the lesser charge gaining access to the vital centers, the spinal cord must be similarly blocked. Bearing in mind that death from this disease is ordinarily due to asphyxia from spasm of the respiratory muscles and diaphragm, to arrest of the heart by spasm of the muscle, or to general exhaustion, if the vital centers governing the respiration and circulation are not first sufficiently affected there are two courses open, either injection of the antitoxin into the cauda equina by lumbar puncture or high up into the upper dorsal or lower cervical cord. In lumbar puncture it is necessary to wound one or more of the nerves in the cauda equina, as otherwise the injection is simply a subdural one which quickly passes from the lymph into the blood and can have no effect on the large charge of poison which is on its way up to the cord in the long nerves of the lower extremities. As the cauda equina begins opposite the first lumbar vertebra, a long needle should be inserted and manipulated back and forth until a twitching of one or both legs indicates that the desired nerve lesion has been produced. The injection of the antitoxin has then some prospect of being useful; from 10 to 20 c.c. are thus introduced in and around the wounded nerves. As this is manifestly working in the dark, I have often been tempted to perform a laminectomy in the lumbar region and to inject each nerve directly, as is done in the axilla or groin; but experience has not yet seemed to justify so drastic a procedure.

If, however, cyanosis be present when the patient first comes under observation, life is evidently in imminent danger, and the vital centers of respiration and circulation must be protected at all hazards. As the progress of the toxin is always upward in a centripetal direction through the nerves and cord and never downward, the antitoxin must be placel in the cord as near to the medulla as possible. Hence when the symptoms are urgent, a long hypodermic needle is entered near the median line posteriorly opposite the sixth or seventh cervical spine and passed through the spinal canal until the body of the vertebra is encountered. If a long, pointed needle is employed and is aimed at the center of the canal, one can hardly avoid penetrating the cord at this point, and I have thus repeatedly injected from 20 to 30 minims of antitoxin at a sitting, with absolutely no ill effects and with much apparent benefit; that is, the cyanosis has been relieved and the jaws partially or completely relaxed. The results in this respect have been so noticeable as to prove beyond question, in my mind, the value of the intraneural injections of the serum. I admit the danger of the procedure, involving as it does a hemorrhage into the cord, and hence have only practiced it in seemingly desperate cases. As remarked before, however, no ill effects so far have been encountered, and in at least one of the cases reported it was apparently life-saving.

In addition to the toxin which is in the blood and which has already gained access to the cord and nerves by the circulation and by diffusion, there is the original source of the infection to be treated. This is left to the last in order to avoid the obvious danger of multiple infection. After the intravenous, the local intraneural and the intraspinal injections of antitoxin the wound should be thoroughly cleaned and all foreign matter removed, and immediately the question of amputation arises. Removal of the affected member has fallen into undeserved ill-repute owing, I believe, to the earlier ignorance of the cause and course of the poisoning. In the first place, it is indispensable to destroy entirely all the tetanus bacilli in and around the wound, and for this purpose experience and experiment have proved that the antiseptics most valuable are, in their order of usefulness, strong tincture of iodin, 1-1,000, or even 1-500; solutions of bichlorid of mercury, and 1-30 or stronger solutions of carbolic acid. Iodoform in the shape of iodoform gauze packing is extremely useful owing to its iodin content. It is almost unnecessary to add that extensive contused and lacerated wounds filled with dirt, or with other foreign matter present, are a practically hopeless field for disinfection. The bacilli, in spite of all that can be done, are bound to multiply to a greater or less extent and disinfection with strong antiseptics by producing more necrosis, probably aids rather than hinders their multiplication. Hence, the only logical resource, removing as it does all the bacteria or as many as have not escaped into distant regions, and all the local nerve charge, is amputation as near to the body as possible. In my experience these severe infections have seemed practically hopeless from the outset and so an amputation might be said to be unnecessary, but it is submitted, like intraspinal injections of antitoxin in the cervical cord, as a desperate remedy, which might save some desperate cases.

If the source of infection is a small, more or less easily cleaned wound, the conditions are somewhat different, and experience has demonstrated the success of local treatment, although even in such conditions the question of amputation, preferably high up, should be seriously considered. After thorough local disinfection, supplemented by the swabbing of tincture of iodin into every crevice, the diffusing toxin must not be forgotten, and a plentiful amount of antitoxin must be injected into all the tissues surrounding the wound. Not till all this has been completed and the wounds properly dressed can the patient be put to bed. Then the whole process, including the anesthesia, should be repeated once each succeeding day until the symptoms subside. The intraneural and intraspinal injections can not be omitted, as the antitoxin apparently soon disappears from the points where it is placed in the nerves and the toxin remains and can then resume its progress toward the vital centers. The exhaustion from long-continued muscular spasm, which is one of the causes of death, must also be constantly combated by the usual remedies of quiet, easily assimilable food and the antispasmodics, of which the best seem to be chloral, morphin and the bromids. One case has recently been reported as recovering under the intraspinal administration of cocain and another by the use of curare, and, as in each the treatment was begun by disinfection of the primary wound, it must be assumed that further intoxication was stopped and the alleviation of the spasms (from the poison already in the nerves), and so of the exhaustion, was an important factor in the result. Both drugs are absorbed and exert their effects in a manner so analogous to the tetanus toxin, yet so antithetically, that an experimental investigation of their antidotal properties should be very valuable. In the absence of such exact knowledge, however, their employment is only to be recommended as an adjuvant to the antitoxin to aid in presenting exhaustion, and not as a specific. Curare, it should be stated, is a rather dangerous drug, of uncertain composition and dosage, and each sample should be tested on animals before its administration to man.

The limitations in the treatment of tetanus are, I think, obvious. Some of the cases are hopeless from the outset either because they come under observation too late or because of an overwhelming infection—and it is worth noting that animals are often so inoculated with tetanus that no amount of antitoxin can save them—or because of the location of the infection near to the medulla, as in tetanus hydrophobicus. The fact remains, however, that the antitoxin serum is the natural and best means of combating the disease, and the essential factor in its successful use is the technic of its administration. The following cases are submitted to illustrate its employment.

It would be unwise and unfair from so short a series to expect any vast improvement over the mortality statistics hitherto published, but the fact that the mortality is less than that usually given, which is between 40 and 50 per cent. for all antitoxin cases, is suggestive. The most important fact is that the method of treatment is based on sound experimental proof, and though apparently drastic and more or less dangerous, especially the high intraspinal injections, no ill effects whatever have been noted. A careful perusal of these histories reveals many errors in the technic which is advised, but this was principally due to the fact that the importance of each step was not at first fully appreciated.[2]

CASE 1.[3]—J. H., aged 12 years, was shot in the lower part of the palm of the left hand by a toy pistol on March 17, 1904. He was immediately thereafter treated in some dispensary by the application of a wet dressing, which was changed on March 19 by the family physician, who then cleaned the wound of fragments of "wadding." Nothing abnormal further was noted until April 2, when his mother observed that he moved with some stiffness.

April 3: In the morning he showed marked dorsal rigidity and complained of difficulty in chewing and cramps in the back and legs.

Examination.—In the evening I found him with jaws tightly locked in trismus and the muscles of the back and legs rigid. The opisthotonos position was so pronounced that it was only with difficulty that he was carried in a cab to the hospital.

Treatment.—At 11 p. m., under chloroform anesthesia, the lower end of the left brachial plexus was exposed in the axilla and each nerve trunk, after repeated puncture with a fine hypodermic needle, was injected with m. x-xv of antitoxin, or enough to cause it to swell to triple its natural size. A long needle was then inserted into the spinal canal between the second and third lumbar vertebræ and, after withdrawing about one dram of cerebrospinal fluid, a similar amount of antitoxin was injected. Just previous to this, however, the needle was moved back and forth to wound or to abrade the nerves in the cauda equina. The wound in the palm was next thoroughly disinfected, swabbed with tincture of iodin and packed with iodoform gauze.

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[2] All the facts given above and the references to the literature can be found in the Handbuch der Pathogenen Micro-organisms. Vols. ii and iv (Kolle and Wassermann, 1903).

[3] N. Y. Medical Record, May 21, 1904, p. 813.

Course of the Disease.—April 4: Slight improvement was noted. Nevertheless, he was again anesthetized, the wound in the axilla was opened and one of the nerves, probably the median, was injected with antitoxin. The lumbar puncture and injection of one dram of antitoxin was repeated, as was the dressing of the hand, which was swabbed with tincture of iodin. During this day 60 grains of chloral and 120 grains of bromid of soda were given in divided doses. No other treatment followed except daily dressing of the wound in the hand with iodoform gauze packing, and the improvement continued. He was discharged cured on April 23.

Case 2.[4]—J. M., aged 11, received a punctured wound in the sole of the left foot from a rusty nail on April 25, 1904.

May 2: Seven days later at 6 a. m. he complained of stiffness about the jaws and neck and was unable to eat. He was brought to the hospital in the afternoon showing the picture of severe acute tetanus, and was given 20 c.c. of antitoxin subcutaneously, by the house staff. During the night the trismus and general rigidity became worse.

Treatment.—May 3, at 11 a. m., under chloroform anesthesia, I exposed the left anterior crural and sciatic nerves and injected into each from 20 to 30 minims of antitoxin and then two drams by lumbar puncture into the cauda equina. In manipulating the needle to wound these nerves (the legs were made to twitch), there was quite a free flow of blood but no ill results followed. The wound in the foot, which was nearly healed, was laid freely open, disinfected, swabbed with tincture of iodin and packed with iodoform gauze. A culture from this point subsequently showed abundant tetanus bacilli. At the end of the operation there was a noticeable improvement in the relaxation of the masseters and muscles of the back, which was undoubtedly due to the chloroform. During the night following, however, the symptoms returned with severe convulsions.

Course of the Disease.—May 3 I found him slightly cyanotic, with every muscle rigid, and lying on pillows to permit the opisthotonos position. The outlook seemed hopeless, as the temperature had risen to 103 and the pulse to 120-130. Under chloroform, one dram of antitoxin was injected directly into the spinal cord between the second and third dorsal vertebræ, with the intention of protecting at all hazards the respiratory center. The sciatic and anterior crural nerves were also injected as before and the wound in the foot swabbed with tincture of iodin and redressed. Rectal feeding alone was possible during this day. As in the previous case, the chloroform seemed to be of considerable temporary benefit.

May 5: There had been no convulsions during the night, and the rigidity was so much better that liquid food could be taken by mouth. The only treatment on this day consisted in the change of dressings, which was continued daily until discharged.

May 6: The trismus and rigidity had slightly increased over the previous day and, under chloroform, one dram of antitoxin was administered through a lumbar puncture, after previously scratching the nerves enough to cause the legs to twitch.

May 7: There was some improvement, but the lumbar puncture was repeated under chloroform as before.

May 8: From this date until discharge, on May 18, there was steady and rapid improvement and no more antitoxin was given. No sedatives were administered at any period in the treatment, as this was considered a crucial case and it was desired to prove the value of the antitoxin and the technic of its dosage.

Case 3.—W. M., aged 22, received a punctured wound in the left wrist with a cotton hook on July 2, 1904. The wound subsequently showed a little infection but soon healed. Another wound was received from the same hook in the right palm on July 10, which had not healed when he first noticed some stiffness of the jaws and difficulty in eating and walking. July 29, this gradually increased, and he was brought to the hospital on August 10, with marked symptoms of tetanus.

Examination.—The masseters and muscles of the back and legs were rigid. He was unable to sit up in bed. Under chloroform anesthesia, both axillæ were opened and the lower ends of the brachial plexuses exposed, as I was uncertain which wound was the source of the infection. All the nerve trunks were punctured repeatedly with a fine hypodermic needle and each injected thus with 5-10 minims of antitoxin. About 10 c.c. of the antitoxin were then injected around the cicatrix in the left wrist and the nearly healed punctured wound in the right palm. After this, the cicatrix and the wound were freely excised and the raw areas swabbed with tincture of iodin and packed with iodoform gauze.

Course of the Disease.—August 11: The rigidity was less, the patient could take liquid food by mouth, which was impossible the previous day, and from this time on there was a steady, slow improvement until he was discharged cured August 25. No other treatment except the daily dressing of the wounds was practiced except the antitoxin which was administered on August 10.

Case 4.[5]—E. D., aged 5, received a punctured wound in the neighborhood of the right knee from a sliver of wood nine days before admission to the hospital on June 20, 1904.

Examination.—There was marked trismus and opisthotonos, with general convulsive spasms every ten minutes. The first symptoms of trismus had been observed on June 18, or seven days after reception of the injury. The original wound had healed without reaction.

Treatment.—At 10 p. m., under chloroform anesthesia, the right anterior crural and sciatic nerves were exposed by Dr. Schley and each injected with 3 c.c. of antitoxin. Then 10 c.c. were injected into the region of the cauda equina between the second and third lumbar vertebræ, after previously wounding the nerves slightly by manipulation of the needle. Ten c.c. were also given subcutaneously. In the subsequent treatment, moderate doses of chloral and bromids were also administered by rectum.

Course of the Disease.—June 21: Several convulsions occurred during the previous night. The temperature had risen to 103 and the pulse to 120. Chloroform was again given and the anterior crural and sciatic nerves were injected with antitoxin as before.

June 22: Some improvement was noted during the night, but the chloroform and the intraneural injections were repeated.

June 23: The patient seemed to be losing ground so much that frequent inhalations of chloroform were required to allay the convulsions.

June 24: Slight improvement began to appear, although in the afternoon there was a severe convulsion accompanied by cyanosis.

June 25: One severe convulsion was noted; the general rigidity remained nearly unchanged and the intraneural injections were repeated under chloroform anesthesia. Later in the day there was so much improvement that liquid food could be given by mouth.

June 26: The improvement from now on was steady and the patient was eventually discharged cured without further resort to antitoxin. The original wound had healed without reaction and was not disturbed in the whole course of the treatment.

Case 5.—W. W., aged 8, was run over by a cart on April 29, 1905, and received a bad contused wound of the right foot.

May 8, ten days after the injury, trismus was first noted, and in the afternoon there was general rigidity with opisthotonos and some cyanosis.

Treatment.—At 4 p. m., under chloroform, I exposed the right anterior crural, sciatic and obturator nerves, and after passing a ligature under them, injected each with from 10 to 20 minims of antitoxin; one dram was then injected between the second and third lumbar vertebræ, after scratching the nerves enough to cause the legs to twitch. The extensive suppurating wound in the foot, which involved nearly the whole plantar aspect and exposed the os calcis, was made as aseptic as possible, swabbed with tincture of iodin, packed with iodoform gauze, and two drams of antitoxin were injected in and around it. This dressing and local injection around the wound, of antitoxin, was repeated daily. Amputation was advised in this case, but refused. The infection was so extensive that I regarded the case as hopeless, especially when the culture ground could not be removed.

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[4] N. Y. Medical Record, July 2, 1904, p. 12.

[5] Reported by Dr. Schley in N. Y. Medical Record, Oct. 15, 1904, p. 616, from which this is quoted.

Course of the Disease.—May 9: There were several severe convulsions during the night and the condition was evidently worse; as cyanosis was marked, under chloroform, one dram of antitoxin was injected between the sixth and seventh cervical vertebræ, directly into the cord; two drams were then given into the median basillic vein and the intraneural injections into the sciatic and anterior crural nerves were repeated. The latter procedure was much facilitated by the long ligatures which had been left loosely encircling these nerves. Large doses of chloral and bromid were also given throughout this day and until the end, by rectum.

May 10: Considerable improvement was observed; the trismus was so much less that liquid feeding by mouth was possible. There were no convulsions. In the afternoon, by mistake, diphtheria antitoxin was given by lumbar puncture, intravenously, intraneurally and around the wound, with disastrous results, for the error was not discovered till the next day, and the improvement noted on May 10 had all disappeared, the temperature had risen to 104, the pulse to 150-160, and convulsions were reappearing.

May 11: The anesthesia and the numerous injections, this time with the proper antitoxin, were all repeated, including the puncture of the cervical cord.

May 12: The convulsions had decreased in severity and frequency, but the rigidity was marked and the picture was one of exhaustion, as the temperature was rising and the pulse almost imperceptible.

May 13: Death occurred during the morning.

Remarks.—I believe this patient might have been saved, as on May 10 the improvement was very noticeable, but the substitution of diphtheria for tetanus antitoxin was fatal. The error was due to the label, which was simply "antitoxin." I was also to blame in that I did not give an intravenous injection of tetanus antitoxin until the second day of the treatment, but trusted to the intraneural and local injection.

The following two cases I regard as instances of overwhelming infection which can not be saved by any means in our power.

Case 6.—P. F., aged 41, received an extensive crushing wound of the right forearm on August 22, 1904, exposing the muscles and tendons from nearly the elbow to the wrist. A heavy stone had fallen on the arm, crushing it in a muddy street. September 2, or eleven days after the injury, trismus was first noted, and in the afternoon he was brought to the hospital with every symptom of severe tetanus.

Treatment.—Under chloroform, the right brachial plexus was exposed in the axilla and each nerve trunk injected with about 10 minims of antitoxin; 10 c.c. were then injected between the second and third lumbar vertebræ into the neighborhood of the cauda equina, after scratching these nerves sufficiently with the needle to cause the legs to twitch. Amputation of the arm was refused and so the best disinfection possible under the circumstances was attempted in the extensive and dirty wound, which was then swabbed throughout with tincture of iodin.

Course of the Disease.—Convulsions every few minutes with constant opisthotonos and considerable cyanosis were noted as increasing. Under chloroform, a long needle was introduced between the second and third dorsal vertebræ and 5 c.c of antitoxin were injected into the substance of the cord. The intraneural injections in the axilla were repeated, as was the dressing of the wound. For a few hours that afternoon, it is worthy of remark that the trismus seemed much improved but all the symptoms increased in severity during the evening and death occurred quite suddenly, apparently from spasm of the heart at 11 p. m.

Case 7.—M. R., aged 49, sustained a severe crushing and laceration of the hand with compound fractures of two metacarpal bones by being run over in a dirty street on May 3, 1905. May, 9 he first complained of some difficulty in swallowing, indicated by signs, but as he spoke no English and nothing abnormal was apparent, the condition was not diagnosed until the following day.

May 10. The symptoms of severe tetanus were very evident.

Treatment.—Under chloroform, the axilla was opened and the brachial plexus injected with antitoxin, ʒii were given into the median basilic vein and ʒii, by lumbar puncture after scratching the nerves, in the cauda equina. The hand was amputated through the middle of the forearm. Some improvement occurred during the afternoon, but at 8 a. m. on May 11, having passed a quiet night, he had a severe convulsion and died suddenly without cyanosis and evidently from cardiac spasm.

NEWER AIDS TO DIAGNOSIS IN DISEASES OF THE URINARY TRACT.*

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The urinary tract may be subdivided into four parts, namely, the kidneys or secreting part, the ureters or conducting part, the bladder or receptacle, and the urethra with its accessories in the male.

Each of these parts may be the subject of pathologic changes and at times it may be very difficult or even impossible from the symptoms alone to determine to which part or parts the disease is confined.

The mere presence of pus or of blood in the urine affords no evidence as to its origin, and when the symptoms do not indicate the origin some means must be employed which will enable one to investigate each portion of the urinary tract separately.

A number of ingenious devices have been invented recently by the use of which one is enabled to obtain information of the greatest importance concerning the condition of the various portions of the urinary tract.

Among these may be mentioned, first, the catheterizing cystoscopes and the urine segregators. By the use of these instruments one is enabled to collect the urine from each kidney separately and thus to differentiate the diseases of the upper urinary tract, or kidneys and ureters, from those of the bladder, urethra, etc. They also enable one to determine whether there are two kidneys present or only one, and if two whether the disease is confined to one or involves both, and, if the latter, the extent of the involvement.

Each of these methods, namely, ureteral catheterization and segregation, has its advantages and a proper selection of the method to suit each particular case is necessary in order that the best results may be obtained.

Ureteral catheterization is suitable in a greater variety of cases than is the segregator, for the reason that it possesses many advantages which are independent of the mere collection of the urine.

If the catheter pass without obstruction as far as the kidney it indicates that the ureter is pervious. If it meet with an obstruction, the distance which it enters will locate exactly the seat of the obstacle.

The use of the catheter or bougie is of great aid in the diagnosis of ureteral stones. Notwithstanding the importance of the x-ray in the diagnosis of this condition, a number of errors of interpretation of small shadows in the pelvis have been made which might have been avoided had ureteral sounding been practiced.

Again, the catheter may be introduced as far as the pelvis of the kidney and may drain a hydronephrosis or a pyonephrosis, the amount of fluid not only indicating the condition present, but also approximately the size of the cavity drained.

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Contamination of the urine with pathologic products from the ureter may be prevented by introducing the tip of the catheter as far as the pelvis of the kidney. When it is desired to collect the urine for several hours or more catheterization is the only method applicable.

It should not be concluded that ureteral catheterization is a simple and perfect method. Aside from the fact that in a small percentage of cases the catheter can not be introduced, there are other disadvantages. For example, the introduction of the catheter often causes a slight hemorrhage which may contaminate the urine; or when left in place a long time the catheter may cause a severe ureteral colic requiring large doses of morphin to control the pain. The flow of urine may cease suddenly or gradually owing to the lumen of the catheter becoming occluded or to the production of a reflex temporary anuria.

While a catheter is in the ureter on one side, it is never safe to judge of the condition of the kidney on the uncatheterized side by the character of the urine taken from the bladder, because it may not only be contaminated by products from the bladder, but also by products from the catheterized kidney, as a certain amount of urine flows around the catheter and the urine from the bladder to a certain extent is mixed urine.

While the possibility of infecting a healthy ureter or kidney in the presence of an infected bladder can not be denied, still it must be acknowledged that this accident has rarely occurred.

The fact that such an unfortunate accident may happen, however, demands of one the greatest care and circumspection in catheterizing a patient under such circumstances, and makes it incumbent on one to catheterize only when the desired information can not be obtained in any other manner.

The cost of catheterizing instruments and the great skill and dexterity, acquired only by long practice, necessary to use them must unavoidably restrict the use of this exceedingly valuable aid to diagnosis to the hands of comparatively few.

The urine segregator finds a more limited field of usefulness than does the ureteral catheter. There are two kinds of segregators—the Harris instrument, which raises the posterior wall of the bladder into a longitudinal fold, thus forming a watershed between the ureteral openings, and those which attempt to form a water-tight septum within the bladder, such as Neumann's, Cathelin's, Luy's, etc.

Theoretically the latter are less reliable than the former, for the reason that it is very difficult to form a water-tight joint by pressing a smooth edge against a mucous membrane naturally thrown into folds (such as the bladder wall when that viscus is empty), and in practice this is found to be true.

My experience is based on the use of the Harris instrument. In order that the results from the use of the segregator may be satisfactory and reliable, the cases in which it is used must be properly selected.

For instance, those cases are not suitable for the segregator in which the ureteral openings are abnormally close together or so arranged that an efficient septum can not be raised between them; or cases in which the base of the bladder is so thick or distorted that a suitable watershed can not be made; or cases in which the bladder is too small or contracted to permit the opening of the instrument; or cases in which there are intravesical growths which interfere with the proper working of the instrument; or cases of irregular or excessive enlargement of the prostate. Some of these conditions render catheterization of the ureters impossible as well.

The most satisfactory results are obtained with the segregator in diseases of the kidneys when it is desirable to know whether the affection is unilateral or bilateral; when one wishes to learn whether certain pathologic products come from the kidneys or from the bladder, and when one wishes to determine the amount of work done by each organ. In such cases the results are very satisfactory and the method has the advantage over catheterization in that it requires much less practice and skill.

By this it is not intended to convey the idea that segregation is a very simple procedure; on the contrary, it requires the most careful attention to the minutest details, and I am convinced that the reasons why some have failed at times in the use of the instrument are that an unsuitable case was selected; or that some of the details were omitted; or that too much was expected of the instrument. It should also be remembered that an instrument is always only an inanimate mechanical device which, when properly used, furnishes certain data, but a correct interpretation of the data depends entirely on the knowledge and experience of the operator.

As has just been stated, there are a number of conditions unsuitable for segregation and some in which catheterization is also impossible. It is necessary to recognize these conditions in order to make a suitable selection of the method of procedure in the case in hand, and to do this a cystoscopic examination is frequently absolutely essential.

In every case in which there is the slightest doubt as to the condition of the bladder, a cystoscopic examination should precede an attempt to segregate the urines. So important is this, in my opinion, that I look on a cystoscopic examination as the keystone of the diagnostic arch in diseases of the urinary tract. It is often truly remarkable the amount of information an expert at times will gather not only in regard to the involvement of the kidneys, but of the side affected and approximately of the relative amount of work done by each kidney by a simple cystoscopic examination. I feel certain that any one familiar with its use would unhesitatingly choose the cystoscope as the most valuable of all instruments of diagnosis in this line of work.

Having collected the urine by one or the other method the next question to determine is the functional activity of the kidneys both combined and separately. The recent attempt to explain the secretion of urine entirely by osmology has not met with general acceptance, and the cellular activity theory of Heidenhain is still necessary to a satisfactory explanation, although osmotic tension is undoubtedly an important factor. Such being the case, the amount of solids eliminated with the urine must represent the functional activity of the kidneys.

Up to quite recent times dependence was placed on the specific gravity and on chemical analysis to determine the amount of solids present in the urine, but recently another method has been introduced. It has been known for a century or more that the freezing point of a solution of any substance is lower than that of the solvent, but it is only during the past few years that the laws of this phenomenon have been known. It is now known that the freezing point of a liquid bears a direct ratio to the number of molecules held in solution.

Koranyi was the first to make use of this fact as a means of determining the amount of solids held in solution in the urine, blood, etc., and the method has since come into more extensive clinical use under the term cryoscopy. The technic of the procedure need not be described here. The real value of cryoscopy above that of other methods when applied to the urine is questionable.

Casper and Richter,[1] however, claim that it is practically the only method of any value in determining the total solids of the urine, and, therefore, the amount of work done by the kidneys, and would have us believe that the estimation of the percentage of urea, chlorids, etc., is of no significance. Their argument is that the amount of nitrogen containing substances and of chlorids in the urine may vary so widely under varying conditions of diet, etc., even in health, that their estimation is without practical significance. These substances, however, form more than 85 per cent. of the total solids of the urine, and if their estimation by one method is of no significance surely their estimation by another method is equally without value.

Cryoscopy is but another method of estimating the total solids of the urine, for the freezing point is an index of the number of molecules in solution. Cryoscopy when applied to a single specimen of urine is of no more value than is the specific gravity of the same specimen. In fact, as Clowes[2] says: "On comparing the freezing point directly with the specific gravity a constant relationship is found to obtain which only varies within such narrow limits as almost to fall within the range of experimental error."

Each 0.01 of the decimal of the specific gravity of urines depresses the freezing point 0.75 C. Consequently, if the decimal part of the specific gravity be multiplied by the constant 75, the freezing point will be obtained. This applies practically to all conditions except when sugar is present or albumin in considerable amount. In order to be able to attach any value to the amount of solids contained in a given specimen of urine, however, one must take into consideration the factors, time and the body weight of the patient. It is very interesting to note how the product of these three factors averages up from hour to hour under ordinary circumstances. The amount of solids in a specimen of mixed urines is not of so much diagnostic value as is a marked difference between the amounts found in the separately collected urines. It is here, again, that the value of ureteral catheterization or segregation becomes evident, for under normal conditions each kidney secretes approximately the same amount of urinary solids in a given time. If there be a marked diminution in the percentage of solids found in the urine from one kidney, when compared with the percentage of solids found in the urine from the opposite kidney, it is positive evidence of an abnormal kidney.

One can not tell, however, from a determination of the percentage of solids alone whether or not the combined work of the two kidneys is sufficient. If by renal insufficiency is meant the failure to remove from the body all of the excrementitious substances which normally should be eliminated by those organs, then renal insufficiency, except it be of high degree, can not be determined simply by an examination of the urine, because it is impossible to know how much material has been brought to the kidneys for elimination.

We, therefore, turn from the urine back to the body to determine, if possible, whether any of the excrementitious substances have been retained. Evidence of such retention is sought along two lines: 1. Symptoms due to the substances retained. 2. The presence of such substances in the body fluids in increased amounts as determined by physiochemics.

It is unnecessary to mention all the symptoms of imperfect elimination, but attention is particularly directed to increased arterial tension as shown by the sphygmomanometer.

Under the second heading we have to consider cryoscopy as applied to the blood. The freezing point of the blood in health is found not to vary materially from —0.56 C. This uniform point is maintained by the kidneys acting as a regulator of the osmotic tension of the blood. When the kidneys fail to eliminate properly, or, in other words, become insufficient, the retained substances increase the osmotic tension of the blood, which is made manifest by a lowering of its freezing point.

Based on a somewhat limited number of observations, it is assumed that a lowering of the freezing point of the blood to or below —0.60 C. is an indication of retained excrementitious products, or, in other words, of kidney insufficiency.

Were kidney activity the only factor involved in maintaining the normal freezing point of the blood, the problem might prove to be a simple one, but such is far from being the case. Some of the factors influencing the freezing point of the blood are unknown, others are but slightly known, but that the freezing point varies considerably is certain. For instance, in the anemias, or when the percentage of hemoglobin is diminished, the freezing point of the blood is found to be much higher—0.52 or more.

If 0.04 of a degree is sufficient to mark the dividing line between normal blood and that of renal insufficiency, and if the anemias can raise the freezing point 0.04 or 0.06 of a degree, it is easy to see that marked renal insufficiency may be associated with anemia, and the blood still have a normal freezing point or one even above normal.

This was well shown in one of my cases. A young woman had had but one secreting kidney for some time, and that one badly involved, as it furnished but a small amount of albuminous urine containing numerous casts and blood cells. She was in an extremely low condition, yet the blood froze at —0.53 C. There was a high degree of anemia, 2¼ million reds and 40 per cent. hemoglobin.

On the other hand, the freezing point of the blood may be found as low as —0.60 C. or lower with normal kidneys in diseases of the lungs or heart, in which oxidation is below normal; in some of the fevers; in malaria and in diabetes (Bouchard).

From this it follows that until we know the influence of other factors on the freezing point of the blood so as to make the necessary corrections therefor, we are unable to affirm that there is renal insufficiency on the results of cryoscopy of the blood alone.

In order that reliable deductions in regard to renal sufficiency or insufficiency may be made from cryoscopy of both the urine and the blood, it is necessary to know concerning the former the amount secreted in a given time, together with the weight and general diet of the patient, and concerning the latter the amount of hemoglobin present and such other factors as may influence the freezing point.

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[1] Functional Diagnosis of Kidney Disease. 1903.

[2] Amer. Jour. of Physiology, 1903, vol. ix, No. 5.

When cryoscopy is applied in a differential sense to the separate urines, it becomes of great value in determining the amount of work done by each kidney.

The use of phloridzin as a test of renal activity was first employed by Klemperer. As is well known, phloridzin, when injected subcutaneously, produces a temporary glycosuria, and the amount of sugar eliminated by each kidney depends on the amount of active parenchyma possessed by the kidney.

Ureteral catheterization or segregation, therefore, must be used in connection with the phloridzin test, for this test becomes of value only when the amount of sugar contained in the separate urines is compared. When used in this manner the test has some value. The methylene blue test is purposely omitted, as its value is probably not great. The value of the x-ray in the diagnosis of renal and ureteral calculi has become firmly established and need only be mentioned here.

In conclusion, then, the newer aids to diagnosis in diseases of the urinary tract may be arranged in the following order, according to their value:

1. The cystoscope.
2. Ureteral catheterization or segregation with comparative analyses of the separate urines.
3. The x-ray.
4. The phloridzin test.
5. Comparative cryoscopy of the separate urines.
6. Cryoscopy of the blood with the necessary corrections made.

NEURASTHENIA.*

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Neurasthenia is a rather comprehensive term derived from the Greek "neuron," nerve, and "asthenia," exhaustion or weakness, and covers a variety of functional disturbances of the nervous system, with great irritation and lowered vitality.

It is due to a variety of causes, chief among which are strenuous life, excesses of various kinds, overwork and worry. Neurasthenia, also, is often a result of other diseases, such as influenza, typhoid, syphilis, alcoholism or chronic narcotism, surgical operations, anemia, shock, injuries, autointoxication, impaired metabolism, and in women menstrual or other troubles of the generative organs, such as prolapsus, lacerations, the menopause, etc. In males, prostatitis and masturbation are causative factors. Most authors acknowledge that heredity plays an important rôle by endowing the individual with a neuropathic tendency, and point to the progeny of tubercular, alcoholic or syphilitic parents as proof. There is a close relationship between neurasthenia and the sexual function. Neurasthenia usually occurs between the ages of 15 and 45.

SYMPTOMS.

Great fatigue—mental and physical—occasioned by the least exertion of body or mind, general irritability of the whole nervous system, with vagaries of any of the special senses and intractable insomnia, are the more pronounced symptoms. The mind is irritable and apprehensive and there is loss of memory. Curious and interesting mental perversions are frequent, and melancholia is often pronounced.

The reflexes are heightened, and muscular tremors in the extremities are seen. The spine is nearly always sensitive, and backache is a persistent symptom. The urinary secretion is generally increased, the fluid being of a low specific gravity. There may be obstinate constipation, or a watery diarrhea. Exhaustive sweats occur and there is usually a coldness of the hands and feet, sometimes a subnormal temperature.

Tachycardia is a prominent symptom, and headaches are common. Anorexia is often pronounced. Hyperesthesia of various parts of the body often occurs, and an interesting symptom, seen sometimes, is severe pain in the region of the appendix simulating appendicitis. A sense of suffocation, throbbing of the arteries and vertigo are common symptoms. Vision is usually impaired. There is more or less sexual impotence.

PATHOLOGY.

There is a starvation of the nerve cells, due to deficient metabolism, with an accumulation of the waste products of the body, which enter the circulating medium, causing an autointoxication, and irritation of the cortex, and through the nervous system an inhibition, or perversion, of the functions of various organs.

The body secretions are altered, the kidneys rarely throw off the solids like they should and uric acid accumulates and adds to the irritability of the already quivering nerves.

The nutrition of the whole body is usually greatly impaired. There is evidently deficient oxidation—a point which should be remembered in the treatment. The absorption of toxins from the intestinal canal—caused by changes in the digestive juices, by imperfect digestion, fermentation and by bacteria—constantly takes place, and is the chief cause in perpetuating the trouble.

One should remember, in studying functional nervous troubles, that severe mental strain, grief, great worry, or marked depression will alter or inhibit the secretions of a number of the organs of the human body.

Close study and clinical observation have led me to believe that the primary or essential causative factors in hysteria, neurasthenia and incipient insanity are closely allied and correlated.

PROGNOSIS.

While these cases are exceedingly hard to treat, still, with tact, persistence and careful, thorough treatment, and where there is no pronounced hereditary taint, the prognosis is usually good.

TREATMENT.

First of all treat and remove the cause; then with nutrition rebuild the impoverished and wasted nerve cells, and induce to activity all the various functionating cells of the body. Yet, treatment must not only be of the body, but of the patient's mind as well. This may partly be accomplished by pleasant surroundings, by cheerful companionship, by music and by out-door games, drives and other diversions, as the patient improves.

It is well to remember that in this disease we have more or less degenerative changes occurring in the nerve cells, admittedly due to irritation and starvation—no matter what the primary cause may have been—and a loss of tonus, with a perversion of certain functionating cells.

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* Read before N. C. Medical Society, May 23, 1905.

Just what changes take place in the internal secretions, or the rôle they play in this trouble, is not known. We do know, however, that the whole human economy becomes erratic, and that there is apparently a pathologic reciprocity between the sensitive brain and the whole perverted and diseased digestive tract.

Physical exercise, or work, is necessary to the proper performance of the functions of the body—a fact that escapes most people—as it increases respiration, circulation, oxidation and elimination; hence, exercise, graduated from passive to the most active, is of the utmost importance in the treatment of neurasthenia.

That the waves of sunlight have a powerful curative influence in the treatment of disease, is recognized; sunlight should be used in the treatment of all cases of neurasthenia—sun-baths being especially beneficial. As soon as possible, patients should be kept in the open air, where the oxygen, so necessary, may be obtained in sufficient quantities.

The patient must make every effort to get well, for this is a disease where self-help is of the utmost value.

Cases due to alcoholism or chronic narcotism should be treated for those habits and their baneful influence removed. In women where the disease is due to lacerations, malpositions, etc., surgical intervention should be insisted on, as a cure is impossible so long as the primary cause exists.

Persons who have suffered with neurasthenia should for some time live the "simple life," and avoid the rush, noise and worry incident to city life; should be careful and moderate in their diet, should avoid excesses of any kind, should have regular habits, and should take plenty of exercise in the open.

The patient should have sleep—and plenty of it. At the beginning of the treatment he must have absolute rest—mental and physical. Massage in the morning, followed by a sponge bath and an alcohol rub, are very invigorating and should be employed. Later, as the patient improves, he should be given the cold douche. Electricity in the form of the static or mild faradic current, applied particularly over the spine, soothes the nerves and aids the cure by stimulating cellular activity.

Weir Mitchell's system of treatment may be used in the worst cases. High irrigation of the colon is useful in suitable cases. Both the hot and cold pack are very beneficial, used according to indications; the hot pack being one of our best remedies for the intractable insomnia which is present in these cases.

As hypernutrition is an end sought for, the patient should be fed often of easily digested, or predigested liquid food. Milk, egg albumin, meat soups, etc., should be used at the beginning, followed by more solid food as the digestion and general condition improve. Fruit juices are also of much benefit.

All the eliminating organs must be kept active by appropriate remedies. This is one disease where suggestion—either simple or hypnotic—often gives most brilliant results; but it must be used tactfully.

A mild but invigorating climate, change of scenery, sea baths, or a sea voyage are all of great utility in the treatment of neurasthenia.

As to drugs, I find the glycerophosphate of calcium and strychnia nitrate to be the best builders, while the compound syrup of hypophosphites is a close second. I give the glycerophosphate in 3 grain doses.

It is well to give a good mercurial purge at the beginning of the treatment, and the bowels afterward should be kept open by laxatives. Phosphate of soda and cascara are excellent for that purpose. Where there is much gastric irritation or catarrh, lavage with the stomach tube should be employed. The nitrate of silver pill (1/8 grain) may be used for the same trouble. Iron and arsenic may be given with benefit—the peptonated preparations of iron being best.

Salicylate of soda, or some of the laxative lithia salts may be used to eliminate the uric acid and to relieve pain. When necessary hypnotics may be employed, such as the ethyl-menthyl-sulfone compounds.

Patience and perseverence are necessary to obtain results. I may add that I have found the sulphocarbolates and creosote to give efficient service in the fermentation and diarrhea incident to this disease.

APPENDICITIS IN TRAINED NURSES.

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The great frequency of this disease among the pupils of the training school of the Denver City and County Hospital has attracted my attention, as well as that of other members of the staff, for some years. I have therefore collected the notes of 10 cases occurring in the past four years, and all operated on successfully by Drs. Freeman, Fleming, Craig, Van Meter, Bagot and Lyman. Nine of these cases were under my care, as far as diagnosis and the medical treatment were concerned, the remaining one under that of Dr. Henry Sewall. Several trained nurses came from outside the hospital for operation for appendicitis during this interval, but, not belonging to the school, they do not concern us at present. At least three mild cases, presumably positive as to diagnosis, but either refusing or delaying operation, are also omitted from consideration in order that we may deal only with completed cases in this study. Meanwhile, I have recommended operation on two trained nurses from other cities, who were successfully operated on elsewhere, these likewise being omitted from our study. A single case recorded, after several attacks while in the school, returned just after graduation for an interval operation, and is included in the statistics. In order to broaden the scope of our inquiry, I have obtained details of four cases operated on at St. Joseph's Hospital, but one of whom I saw, and of three cases at St. Luke's Hospital. Dr. H. G. Wetherill has furnished data of the only case at the Woman's Hospital. At Mercy Sanitarium no case has occurred among thirty-three nurses. In one nurse, aged 38 years, a widow, on whom Dr. Fleming operated for removal of the uterus and tubes, the appendix was found adherent and inflamed by contiguity, but this was in no proper sense a case of appendicitis from our point of view. But two years are covered in the records of the four hospitals last mentioned.

We have here, then, a total of 18 cases of appendicitis among the pupils of our five training schools, the total number of nurses during the time under consideration being 296. Thus a percentage of 6.08 have been operated on, while a considerable additional number have had mild attacks of the disease. Although the total number of nurses in all the hospitals is given, I make no pretense that the percentage of cases stated is an average for that number of nurses. The average number of nurses present at any one time in the five schools is 140, but constant changes take place in the personnel.

I think there can be no possible escape from the conviction, after a consideration of all that we have thus far presented, that appendicitis is extremely common in the pupils of training schools, and among trained nurses in general. It is of interest to study why so many cases occur, and why so many come to the operating table.

The average age of the eighteen nurses was 23½ years. They averaged to have been in training about 14 months at the time of operation. Six were operated on at once with the beginning of the first attack, one two weeks after the first attack, four on the outbreak of the second attack, one after the second attack, three at the beginning of the third attack, or a later one, and three after three or more attacks. Thus thirteen were operated on at the beginning of an attack, and five were interval operations.

In thirteen of the cases the usual appearances of chronic appendicitis were found, clubbed, bent or thickened organs, generally. Strictures were noted in four, concretions in five. Acute inflammation was superadded in all of these, excepting the five interval cases. Auete inflammation was found alone in the remainder of the list, gangrene being present twice. One patient, whom I did not see, broke out with measles as she left the table, and the appendix showed much redness and swelling, leading the operators to consider it a case of eruptive disease manifested internally as well as externally. One case under Dr. Devlins' care, and operated on by Dr. Bagot, developed typhoid fever immediately after operation. It was one of those in which in the beginning it is impossible to state whether the disease is appendicitis or typhoid.[1]

Every case recovered with a practically perfect result. In one acute case, where the beginning was complicated by painful menstruation, operation was delayed until thirty-six hours had passed and gangrene was already present. I erred in underestimating the severity of this case, and we were anxious for a day or two because of the extent of the infection, although recovery was but little delayed.

I can only offer theories as to the cause of the frequency of this disease in nurses, and shall be ready to accept any new evidence brought forward.

Doubtless most pupils in training schools are on their feet vastly more than before entrance, for many come from the school or the home, where there is no such amount of standing and walking. Constipation is certainly almost the rule among the pupils and it may be a factor. A rather monotonous diet, complained of by nurses at times, may promote this trouble.

The stooping posture while at work in making beds, attending to and bathing patients, especially when using the tub bath for typhoid, is doubtless to be considered in the etiology of the disease. Traumatism of the already diseased appendix may occur here through action of the psoas muscle as easily as in riding the bicycle or other similar exercise; we recognize the occasional dependence of the disease in the male on some such exertion.

But the single greatest factor we have yet to mention, I believe. Doubtless many people in other walks of life have worse attacks than many of these for which the nurses were operated on, and recover, to go on for years, either immune or suffering from recurring attacks. The nurse, however, like the physician, on the alert for trouble in the right flank, recognizes the attack at once, realizes its danger, sees a physician at once, and, as in most of these cases, is operated on immediately rather than go through an attack of more or less doubtful outcome.

In my opinion, the results in these cases are as nearly ideal as we can hope to obtain, chiefly owing to early diagnosis and to prompt and skillful intervention.

I do not doubt the possibility of almost equally good results in any large series of cases, if all of the elements to be considered were under the control of the physician. If every case could be seen in the first few hours we should gain the first point. This will be impossible until the laity realize that abdominal pain, even though apparently trivial, should be the signal for calling the physician immediately. If he makes a prompt diagnosis and calls efficient surgical aid, we should gain the second point. In order to take full advantage of it, however, we must assume sufficient confidence on the part of the patient in her advisers to lead to the acceptance of early operation if advised.

I believe there is no way in which we may be of more use to those coming under our care than in keeping before them the tremendous advantage of early diagnosis, and if necessary, prompt operation in cases such as we have considered. The mortality rate could be practically wiped out if we could only have such favorable conditions as we find in the average training school for nurses.

THE RELIEF OF UREMIC HEMIPLEGIA AND OTHER UREMIC STATES BY LOWERING INTRACRANIAL PRESSURE.

TEN CASES.

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In a previous communication[1] were published the results of lumbar puncture and drainage of the cerebrospinal canal as evidenced by three suggestive but eventually fatal cases. My conclusions, as stated at that time and based on the experience of these cases, were essentially as follows:

1. Probably several toxins exert an influence in uremia at different times and in different cases.
2. Other portions of the brain than the cortex are also affected by the causal influence in uremia.
3. Intracranial pressure is usually in evidence, either independently or in conjunction with toxic irritation and tissue destruction.
4. In cases in which the intracranial pressure is the main factor, lumbar puncture of itself may save life; it should constitute one of the routine measures in the treatment of uremia.
5. Transfusion of normal salt solution, except in cases presenting anuria or a markedly diminished secretion, is contraindicated.
6. Drainage of the spinal canal will not cure purely toxic cases.

Other workers in the Philadelphia Hospital at the time of the publication of the former paper were so discouraged with their unfortunate results as to frown on the procedure and to prevent its further employment in their wards. With this knowledge as a drawback my own first, partial, but highly satisfactory, results were obtained. It is because I have gradually convinced myself that the experience of those who have failed to obtain successful results with lumbar puncture in uremia has been due to a series of unfavorable coincidences, and because I have since demonstrated with what seems to me certainty, and by means of an unusually rich series of cases, the value of the procedure, that I have ventured to place my results before the profession for criticism.

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[1] See article by C. G. Cumston, "The Clinical Aspects and Differential Diagnosis of Appendicitis and Typhoid Fever," Amer. Jour. Med. Sci., May, 1905.

[1] The Journal A. M. A., Oct. 8, 1904.

It is my intention in this paper to omit, at least in its beginning, all primary reference to any one toxin as a causative factor, assuming at once that a toxin or toxins are present in every case of uremia, whether playing a prominent part or filling a minor rôle.

That Conclusion 2, with regard to the involvement of portions of the brain other than the cortex, has been amply proved will also be taken for granted: (1) because of clinical evidence cited in the previous paper; (2) on the ground of the autopsy findings in the brain in Case 3 of the previous series; (3) based also on Weisenberg's discovery of pathologic changes in the brain tissue even when macroscopic lesions were absent; (4) and, still more positively, on the postmortem dilatation of the lateral ventricles noted in every case of uremia that has come to autopsy following the antemortem removal of excessive quantities of cerebrospinal fluid.

There remain for active discussion, however, three important considerations:

1. To what extent does intracranial pressure influence the occasional case which responds favorably to spinal drainage?
2. To what extent does it influence the average uremia?
3. What influence, if any, will relief of intracranial and intravascular tension exert on an assumed dominant toxemia?

Before proceeding to the discussion of these questions it will be interesting and instructive to outline briefly the clinical pictures on which this subsequent study has rested, constituting, as the cases do, two instances of uremic coma with convulsions, one of simple uremic coma, two of uremic hemiplegia, convulsions and amaurosis, and one of severe uremic asthma. Of these cases, two patients (representing three instances of uremic seizure treated by spinal drainage) are still alive at the time of writing. Only one patient considered in this paper died before a sufficient interval had elapsed to demonstrate the value of the measure. Nearly all promptly recovered, at least for the time being, from the uremic attack.

Case 1.—J. C., white, male, aged 82; an instance of uremic coma and convulsions, was admitted to the wards of the Philadelphia Hospital on Oct. 5, 1904.

Examination.—He was greatly exhausted, and showed considerable dyspnea due to a marked cardiac dilatation and to congestion of both pulmonary bases. The radial and temporal arteries were calcified and beaded, there was marked accentuation and a metallic clang of the second aortic sound, and at the apex there was a systolic murmur, presumably of a relative mitral insufficiency. The legs, penis, and scrotum were markedly edematous. The urine contained large quantities of albumin, and many hyalin and hyalogranular casts.

Course of the Disease.—A few days after admission, his edema had entirely disappeared, but he began to complain of headaches, vomited nearly all his food, his breath was decidedly urinous, and coma gradually supervened. On the same day there occurred a general uremic convulsion, and two attempts at venesection proved unsuccessful, the veins collapsing as soon as opened.

Treatment and Result.—Lumbar puncture was performed, the fluid spurting nearly an inch from the cannula. During the operation, a second general convulsion occurred. Slightly over two ounces of clear fluid was withdrawn, the flow then ceasing. At once the pulse became less angry, and the second aortic sound became less active and less metallic. Within a brief half hour the patient was fully conscious and talking to the nurse in attendance. He knew nothing of the lumbar puncture. When seen by me on the following morning, his mind was clear, the headache was gone, the urinous odor had disappeared from his breath, and he expressed himself as feeling "pretty well." There were no further convulsions, no return of the coma, and indeed no sign suggestive of uremia. The urine gradually showed less albumin and less microscopic sediment.

Subsequent History.—On Nov. 7, 1904, he sat up in a chair, but almost collapsed, and was replaced in bed. From that day on, his physical failure was gradual, though his mind was invariably clear. He lived until November 30, fifty-six days after the uremic attack, and then died of asthenia.

Autopsy Findings.—Arteries were found to be sclerotic and calcareous over the entire body. There was marked emphysema of the lungs, covering a large dilatation of the ascending aorta (not aneurismal). The cardiac valves were fairly normal; there was no gross valvular lesion, but there was marked cardiac dilatation. Both kidneys showed a high grade interstitial nephritis, and a subacute inflammation, with considerable fatty change. The brain externally appeared normal. Both lateral ventricles were enormously distended, so as to hold easily an ounce of fluid each, though containing at the time only about one dram. No hemorrhage was found, and no gross destructive lesion present. The brain tissue did not appear to be distinctly edematous.

Case 2.—T. F. M., white, male, aged 36, an instance of uremic coma and convulsions, was admitted to the Philadelphia Hospital on Nov. 6, 1904, from the police patrol.

Examination.—He was completely comatose when admitted. His urine, drawn by catheter, contained nearly 50 per cent. albumin, by volume, and many granular casts. His pupils were unequal, the right larger than the left, but both were dilated. The respiration was stertorous.

Course of the Disease.—He could be aroused, but relapsed at once into stupor. He was purged and given a hot pack, and following the latter his temperature rose to 104° F. He then had two severe general convulsions at short intervals, and later a third. Nystagmus appeared, and coma became profound.

Treatment and Result.—Lumbar puncture was then performed by the resident physician, and about one ounce of clear cerebrospinal fluid was withdrawn. Two hours later, the patient could be easily aroused, and seemed markedly improved. Venesection was then done, six ounces of blood being extracted in the hope of further improvement. Unfortunately, as it afterward appeared, one and one-half pints of normal salt solution were introduced into a vein, and within a half hour three convulsions had occurred, and again profound coma appeared. Lumbar puncture was again performed, and again over an ounce of cerebrospinal fluid was withdrawn, although the canal had been emptied not four hours previously. There was no improvement, on this occasion, however, and the patient died before morning. An autopsy was not allowed.

Case 3.—E. McD., white, male, aged 38, an instance of uremic coma, was admitted to the wards of the Philadelphia Hospital on Oct. 28, 1904, following a debauch.

Examination.—There was partial coma, which increased during the next three days, though at no time was it possible to rouse him by questions. The arteries were hard and fibrous, the second aortic sound was loud and metallic, and the heart was much dilated. The urine contained large quantities of albumin, and many casts of all forms. The breath was distinctly urinous.

Treatment and Result.—On Nov. 2, 1904, lumbar puncture was performed, the fluid spurting from the needle, and about an ounce being obtained. There was absolutely no improvement in the condition, and on the following day 20 ounces of blood were removed by venesection. Improvement was extremely slight, if present at all, and consciousness was never regained. The patient rapidly emaciated and died on Nov. 11, 1904. Autopsy was not permitted.

Case 4.—M. W., colored, female, aged 52, a case of uremic hemiplegia, convulsions, and amaurosis, was admitted to the Philadelphia Hospital on Nov. 28, 1904.

History.—Several months previously she had had an attack in which she fell and was unconscious "for a few minutes." She had then recovered completely. Her hands and feet had never swollen, but she had been subject to headache. On the day of her admission she had fallen again owing to sudden unconsciousness. The patient knew nothing of these falls, and stated that she had felt merely a numb feeling in her left arm for about an hour on the morning of her last attack (the present one). On awaking from her stupor she was in the hospital convalescent, with a dim recollection of the pain of my incision prior to the lumbar puncture.

Examination.—On admission, the patient was profoundly comatose, with complete paralysis of the left side of the body. Both pupils were contracted, the peripheral arteries were hard and fibrous (the radials beaded), the pulse of high tension, and the second aortic sound characteristically accentuated and metallic. The heart was greatly dilated. The lungs appeared negative. There was no edema, even the pretibial tissues showing no sign of pitting on pressure.

Treatment and Result.—Lumbar puncture was performed. Five drams of cerebrospinal fluid flowed from the cannula, at first with force, and later dripping slowly as in health. At once the patient seemed brighter mentally, and an hour later moved both the arm and leg freely, and discussed "what had been done to her back" intelligently and clearly. She could see almost nothing, however, except the gaslight. On the following morning the paralysis had entirely disappeared, and she was able to see clearly with her spectacles as usual. The pulse at this time was slow and full and the second aortic sound much less angry and metallic than previously. Headache was completely gone. On Dec. 7, 1904, she sat out of bed, and two days later was walking freely around the ward, feeling strong and well.

Case 5.—Same patient as in Case 4, an instance of recurrent hemiplegia and convulsions.

Course of the Disease.—The patient remained in the Philadelphia Hospital, and was free from symptoms until December 31, when she described a numb feeling in her left arm and side, headache, and dimness of vision. The urine contained a trace of albumin, and showed a constantly low specific gravity. The pulse was of high tension, and the second aortic sound angry and metallic in its accentuation. She was placed in bed, and the next morning felt well and was again around the ward. On January 3, she again felt numbness in her left arm, had severe headache and about 10 a. m. noticed her left hand and fingers twitching. She was placed in bed and at 12 o'clock, noon, the twitching had increased to violent rhythmic movements of the left hand and soon of the left arm, later of the left side of the face, and then involving the left leg, until the convulsive movements included the whole left side. Consciousness was preserved, and the patient stated that she had severe headache, but that her eyesight was clear. At 1:30 p. m. there was complete hemiplegia of the left side, though uncontrollable convulsive movements were almost constant.

Treatment and Result.—Lumbar puncture was performed with the only needle obtainable, of a very small, unsatisfactory size, and about 10 c.c. of fluid withdrawn, but the needle becoming plugged no more could be obtained. The convulsion became general about 3 p. m., and at 4:30 lumbar puncture was done with a small trocar and cannula, and considerably over one ounce of cerebrospinal fluid was withdrawn. The latter was blood tinged. During and prior to the operation the convulsive movements became very active. When asked to raise her arms and legs the patient responded with her right limbs, but failed completely with the left. Sensation was diminished on the hemiplegic side. The reflexes were almost absent on the same side. The pupils were contracted and equal.

While the fluid was still flowing from the cannula the patient suddenly relaxed and the convulsive movements disappeared, to recur once or twice very slightly, and then to disappear finally within five minutes of the withdrawal of the cannula. The headache was relieved to a great extent at once during this attack; the eyesight at no time was impaired. One-half hour after the lumbar puncture the hemiplegia was still complete. Two hours later (7 p. m.), the patient raised her left hand, and at 10 p. m. the entire left side was under control. Her convalescence from that time was steady.

Subsequent History.—On the evening of January 6 (three days later), the patient suddenly went into a general epileptiform convulsion and was completely unconscious during the convulsive seizure, after which her mind gradually cleared. There was no paralysis. One hour later, a second convulsion followed. The spinal canal was punctured, but no fluid could be withdrawn, although the cannula was repeatedly extracted and reinserted in the canal. In the emergency bleeding was resorted to. The veins collapsed as fast as they were opened, and finally the radial artery was incised and 23.5 ounces of blood were removed. Within an hour, the patient had a third convulsion, and from that time for twelve hours was in a state of constant delirium. The radial pulse which had been obliterated was faintly palpable on the succeeding day (20 hours later); the left radial was of a markedly high tension. With the idea that, having relieved the fluid pressure, the remaining uremia including the high pulse tension must be purely toxic, aconite was given in 5-drop and later 10-drop doses every two hours, and with gradually favorable results, the patient relaxing and finally returning to a state of rest. The high tension of the radial pulse gave way to a normal condition, and the second aortic sound lost much of its metallic quality and accentuation.[2]

Case 6.—W. E., white, male, aged 44; an instance of uremic asthma; was admitted to Philadelphia Hospital on July 7, 1904, suffering from rheumatism of the toe and thumb.

Course of the Disease.—As the rheumatism subsided, his legs began to swell. His arteries were stiff and fibrous, his heart dilated, his second aortic sound metallic and loud, and his urine contained considerable albumin and many hyalin and granular casts. He remained in bed from July to October, 1904, and then began to suffer from severe dyspnea, especially at night. He also has now to rise several times during the night to urinate. The dyspnea soon developed into severe attacks of asthma, his face became puffy and swollen, as did also his lumbar region, his buttocks, and gradually his legs. Nitroglycerin and caffein were used continuously. When at last the asthmatic attacks made their appearance every few hours it became a matter of almost certainty that they were due to uremic poisoning or to uremic intracranial tension.

Treatment and Result.—On Oct. 3, 1904, venesection was done by the resident physician, and 10 ounces of blood were removed, with marked temporary relief from the dyspnea. The asthma recurred, however, and on October 13 venesection was done on the other arm, the same amount of blood being withdrawn and temporary improvement again following. The radial pulse disappeared on the side of the operation for about four days following the latter, and then suddenly reappeared. His legs, buttocks, and face were greatly distended with fluid, and on elevating his legs his abdomen showed distinct fluctuation, which disappeared when both the body and legs were finally lowered. About October 18, the asthmatic seizures recurred, and became very severe. Lumbar puncture was done on October 20, the cerebrospinal fluid spurting out until one and three-quarters ounces were obtained. Immediate relief was experienced, and from this time until November 8 (18 days), he was free from distress, and then had a brief attack which proved to be his last up to the present time. The edema gradually disappeared until, on December 2, there was no pitting on pressure, even over the pretibial area. The patient was then dressed and out of bed for the first time in six months. Two days later he returned to bed with an acute attack of rheumatic inflammation of the ankle joint, but with no indication of uremic or other renal embarrassment. On December 26 there was a protracted convulsive movement of his arms and legs, lasting for three-quarters of an hour and disappearing as suddenly as it occurred. Consciousness was preserved throughout the attack, whatever its doubtful nature may have been. A definite statement certainly can not be made as to whether it was or was not uremic, though, as there was neither chill nor fever, and the pulse remained normal, the patient conversing with the nurse and the resident physician throughout the seizure, I have been inclined to consider it hysteric in character. Since that time bronchopneumonia and pleurisy have successively complicated the nephritis, but the uremic symptoms have failed to reappear.*

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[2] This patient recovered entirely and returned home feeling well. As long as she was under observation, her constant tendency to a high-tension pulse was controlled by the intermittent use of aconite.

Case 7.—E. J., white, male, aged 68; a case of uremic coma and delirium; was admitted to the Philadelphia Hospital on Dec. 27, 1904, with ruptured cardiac compensation, dyspnea, and marked edema of the extremities.

Examination.—His lung showed a small area of bronchopneumonia. The urine contained large quantities of albumin and many granular casts of all forms.

Course of the Disease.—On Jan. 4, 1905, the patient's breath was distinctly urinous, his mind was not clear, the temperature rose from subnormal to 101 F., the respiratory rate from normal to 40, and the pulse from 50 to 120. Delirium soon became prominent, restraint in bed being necessary. On Jan. 19, 1905, the condition was somewhat improved, though there was the same odor of urine on the breath, and the mind was by no means clear.

Treatment and Result.—Lumbar puncture was performed and one and one-half ounces of clear cerebrospinal fluid was obtained. The temperature fell within three hours from 101 F. to subnormal, the pulse from 110 to 50 and then to 80, where it remained; the respiratory rate became 20. Within three hours the patient answered questions intelligently, and was fully conscious. On January 7 delirium returned, with incontinence of feces and urine, and death ensued during the night.

Autopsy.—The autopsy showed: Cerebral edema, both lateral ventricles appeared dilated; chronic adhesive pleurisy, hydrothorax, chronic interstitial nephritis, acute pyelitis, cystitis; urethritis, and red atrophy of the liver.

SYNOPSIS OF CASES.

In a brief backward glance at the foregoing cases we may frame the following synopsis:

Case 1: Uremic coma and convulsions in man of 82. Lumbar puncture and 2 ounces of fluid withdrawn. Recovery. Death 56 days later. Autopsy: greatly dilated lateral ventricles.

Case 2: Uremic coma and convulsions in man of 36. Lumbar puncture; one ounce of fluid withdrawn. Improvement. Transfusion of salt solution, followed at once by relapse. Second lumbar puncture four hours after first; again one ounce of fluid withdrawn. No improvement; death.

Case 3: Uremic coma in man of 38. Lumbar puncture; one ounce of fluid obtained. No improvement. Venesection (20 oz.), with slight temporary improvement. Death.

Case 4: Uremic hemiplegia, convulsions and amaurosis in a woman of 52. Lumbar puncture; five drams withdrawn, with prompt disappearance of the hemiplegia and of the amaurosis. Recovery.

Case 5: Convalescent uremic hemiplegia. One month later a recurrence of the convulsions and left-sided hemiplegia. Lumbar puncture, one and one-third ounces of fluid removed. Immediate cessation of the convulsive seizure and disappearance of the hemiplegia within three hours.

Case 6: Uremic asthma. (1) Venesection, (2) venesection; improvement following both, then relapse. Lumbar puncture (one and three-quarters ounces), with almost complete and finally permanent relief. Recovery.

Case 7: Uremic coma and delirium. Lumbar puncture, followed within two hours by a return to consciousness. Recurrence of condition and death two days later.

In order to render the following discussion as practical as possible, the three questions already proposed may be cited and answered seriatim.

I. TO WHAT EXTENT DOES INTRACRANIAL PRESSURE INFLUENCE THE OCCASIONAL CASE OF UREMIA WHICH RESPONDS TO SPINAL DRAINAGE?

The answer to this question may be based on the following evidence offered (a) by the physical signs before and after lumbar puncture, (b) by the influence of the latter on uremic coma (complete or partial), (c) by its influence on the uremic convulsion, (d) by its influence on uremic monoplegia or hemiplegia, (e) by its influence on uremic asthma, (f) by its influence on uremic amaurosis.

Among the physical signs indicative of intracranial and intravascular pressure are the coma, the pupillary abnormalities, the hemiplegia (temporary), the pulse of hypertension, the angrily accentuated second aortic sound, and the convulsive movements.

Without considering these in detail, it may be assumed, as a matter of common knowledge, that all the foregoing may be caused by excessive intracranial pressure. Not only have Gower's studies shown that a pressure of 130 mm. exerted on the brain of a dog is sufficient to cause coma, but many other clinical examples bear witness to the fact that one form and another of intracranial pressure—cyst, tumor, bony outgrowth, cicatrix—may cause, singly or in combination, all the remaining phenomena which I have mentioned.

The converse is equally well proven by the cases cited in this paper, viz., that these phenomena disappear, as a rule, on relief of intracerebrospinal pressure. In every instance in which improvement has been noted, the coma has been at least partially, and usually completely, relieved with such promptness as to leave no doubt regarding the causal influence; hemiplegia, when present, has been caused to disappear, monoplegia (see former article) likewise, the pulse has become softer and even normal, amaurosis has disappeared, the aortic second sound has become less accentuated and less metallic, the convulsive movements have (even in eventually unfavorable cases) ceased, and at times before the flow of cerebrospinal fluid had stopped.

With special reference to the coma, it will be observed that in two of the series of three cases reported in my former communication, and in five out of the seven cases in the present series, the coma disappeared almost immediately (within two hours) after the withdrawal of evidently overlarge quantities of cerebrospinal fluid. In Case 1, of the former series, consciousness was never fully restored, but within a few minutes mental clearing was apparent. In Case 2, consciousness was completely restored within a few hours of the operation. In Case 3, consciousness became almost complete after each of three daily lumbar punctures. In Case 1, of the present series, consciousness was complete within a half-hour from a previous deep coma; the patient in Case 2, also previously in deep coma, could be aroused within two hours, but following veneclysis relapsed and died; in Case 3 there was no improvement; in Case 4 the patient regained consciousness within an hour; in Case 5 the patient did not lose consciousness; in Case 6 the patient did not lose consciousness; in Case 7 the patient regained complete consciousness in about one and one-half hours. Thus, of ten cases of uremia, eight patients were comatose and six regained consciousness shortly after spinal drainage.

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* This patient is now out of bed and preparing to return to his home, free from cardiac and respiratory distress.

Three patients (Case 3 of the first series and Cases 4 and 5 of the present) exhibited paralysis, the former an oculomotor palsy and the latter two complete hemiplegia. In all these instances the paralysis was relieved, and in the hemiplegic woman the change was remarkable—from a complete left-sided hemiplegia to a free use and control of her entire body within 12 hours, and to a partial use at once.

Of the ten cases included in the two series, six patients suffered from convulsive movements; in five instances general, and in two (one patient) limited to the hemiplegic side. In every case in which spinal drainage was instituted the convulsions terminated with the withdrawal of the cerebrospinal fluid, and in only one case did they recur within several weeks of the operation. In Case 5 the convulsions were at one time general, following two attacks of unilateral convulsions and hemiplegia.

Of the ten cases, only one gave certain evidence of true amaurosis, and this disappeared within a few hours after the lumbar puncture. One case showed typical uremic asthma as its most prominent feature, the breath at the same time being distinctly urinous. The asthmatic attacks were relieved twice by bleeding, and the third time by spinal drainage, and since the latter have not recurred.

TREATMENT EMPLOYED.

In all of the foregoing cases, the routine treatment consisted of free purging, drainage of the cerebrospinal canal, and occasionally bleeding. Only those cases in which lumbar puncture formed the only treatment at that particular time are, however, considered in this paper. Two patients were transfused with normal salt solution and both died; one of these showed improvement until the salt solution was introduced, then promptly relapsed into coma and convulsions; death ensued. The hot pack has invariably appeared to me to cause high temperature and a weak running pulse, and in no case has seemed to be certainly beneficial.

In Cases 1, 4, 5 and 7 of the present series, all instances of profound coma, convulsions, and in one instance hemiplegia, absolutely no other measure was employed than drainage of the cerebrospinal canal.

Spinal drainage, bleeding and over-free purging seemed to act similarly in their respective order of promptness and efficiency. The similarity of the action of lumbar puncture and venesection was most evident in Case 6 (renal asthma). Aconite appeared to exert a decided and invaluable influence in counteracting the uremic, adrenalin-like toxin, thus reducing intravascular hypertension when fluid pressure had been dissipated in vain (Case 5).

It would appear to be a fair inference from the foregoing that in all except Case 3 (of the present series), namely, in nine of ten instances, relief of intracranial pressure effectually relieved the symptom complex known as uremia; and similarly it would, on the same grounds, seem reasonable to conclude that intracranial overpressure, whether due to toxemia or whatever cause, was at least the dominant factor in causing the uremic picture in these particular instances. In Case 6 cerebrospinal pressure seemed at first to be the only factor, and later appeared to have no hand in the affair, which then suggested a toxic influence only.

II. TO WHAT DEGREE DOES INTRACEREBROSPINAL PRESSURE INFLUENCE THE AVERAGE CASE OF UREMIA?

In order to arrive at any conclusion, it becomes necessary to analyze the cases of uremia reported in medical literature to the present date which have been treated in the main or solely by lumbar puncture and drainage of the spinal canal. Of my own ten cases, all but one showed marked improvement within the two hours following the withdrawal of the fluid, and Cases 1 and 5 of the present series showed almost instantaneous return to consciousness and quiet. In Case 4, the severe headache suddenly disappeared. Of these ten cases, five improved so far as to be entirely free from uremic symptoms. Five died too soon after the operation to warrant the statement that final recovery from uremia took place, in spite of the return to consciousness and the cessation of convulsive movements.

While a sufficient number of instances of lumbar puncture in uremia has been recorded up to date to justify an estimate of the value of the procedure, the list is by no means extensive. McVail has reported two cases of uremic coma and convulsions, in both of which recovery took place for the time being at least. Seiffert has also reported several instances of uremic convulsions and coma in the course of scarlatina in which prompt recovery followed lumbar puncture. Hand has recently described a case of uremia in typhoid fever, in a child, responding promptly to spinal drainage.

During the last three years, there have been many instances of intracranial hypertension other than those of uremia in which lumbar puncture has been employed, which illustrate the same principle. In many, the symptoms were identical with those of the uremic state. Among them the following are most suggestive: Huber[3] has relieved otitis serous meningitis, also the cerebrospinal form of typhoid fever, and true cerebrospinal meningitis, in three different patients by lumbar puncture. Beky[4] has permanently cured acute hydrocephalus by repeated (fifteen and upward) and persistent tappings and withdrawal of the cerebrospinal fluid. He notes that Concetti has cured another patient by tapping fifty times within two years and with capital final results. Many observers, among them Warrington,[5] have drained the spinal canal in meningitis with prompt return of the patient to consciousness, and with relief from other symptoms. Lumbar puncture has also been used in bronchopulmonary lesions, and Nobecourt and Voisin[6] have reported its use in thirty-one such instances in children. In seven of these, there were no meningeal phenomena, while in 24 it was marked. Of the 24 meningeal cases only four patients survived, the symptoms varying from mere stiffness of the neck to convulsions. In the seven cases without meningeal symptoms the cerebrospinal fluid was clear and usually sterile. In the meningeal series it was turbid, contained many polynuclear leucocytes and bacteria.

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[3] Arch. Ped., January, 1904.

[4] Jahr. f. Kinderheilk., February, 1903.

[5] Pediatrics, February, 1903.

[6] Revue Mens. des Mal. de l'Enf. xxi, 1903.

Babinski[7] reports an interesting case of meningitis in a young girl of 12 years in whom the fluid obtained by lumbar puncture spurted out in a turbid stream. During the month, several subsequent punctures gave the same result, and at last recovery ensued.

S. O. Golden[8] records a case of meningitis with convulsions in a child, with protrusion of the fontanelles, the latter subsiding at once on draining the fluid from the spinal canal.

Syphilitic cephalalgia has also been relieved in this manner by Millan [9] in Fournier's service; and Rochard[10] has restored consciousness promptly in fracture of the skull by draining in the same fashion.

Herbert Rhodes[11] has called attention to the prompt relief from pain following lumbar puncture in a case of gliosarcoma of the optic thalamus, also to the relief of coma in a case of postbasal meningitis. Hodskins and Norton have published a most interesting series of cases of status epilepticus treated by lumbar puncture, in six of which there was positive improvement and recovery in four cases, attended by marked lowering of the blood pressure.

Each and all of these cases demonstrate the fact that when cerebrospinal fluid is present in excess, and in quantities sufficient to exert intracranial overpressure, the symptoms due to hypertension are promptly relieved by drainage following lumbar puncture. In all but one of my own ten cases, and in all of the instances of lumbar puncture in uremia reported by other observers there has been the same prompt relief from pressure symptoms whether the case eventually terminated in recovery or proved fatal. In all the cases observed by me, there was a marked change not only in the volume, but in the rate and force of the radial and apical pulse, and frequently a corresponding fall in the temperature and respiratory rate. I shall deal in a subsequent paper with the actual fall in blood pressure resulting from drainage of the spinal canal. When the fluid spurted from the needle, improvement was almost invariably (with one exception) prompt and usually permanent. If it simply dropped as if reluctant to flow, the improvement was much less positive. The average amount of cerebrospinal fluid obtained was considerably over an ounce, and in one case (1) over two ounces was obtained.

In all my cases except 3 and 5 (in the third attack) the result of spinal drainage was gratifying. In Case 3 absolutely no improvement was noted in spite of the fact that an ounce of fluid was withdrawn. One such case goes far toward proving that occasionally the toxemia or the local influence of the toxin is so profound as to dominate the symptom complex, in which event lumbar puncture is futile. Such a case can be isolated from the average only by the failure of spinal drainage and bleeding, or in the event of a dry condition of the canal as in Case 5 in the third attack. The great majority of cases will respond at least partially and many completely to lumbar puncture; and many others will respond to this procedure when reinforced by bleeding, free purging, diuresis, and the use of aconite. It would seem warranted to say that lumbar puncture should be employed in every case of uremia, and should be looked on as one of the most important features of the routine treatment.

III. IN WHAT MANNER DOES DRAINAGE OF THE CEREBROSPINAL CANAL EXERT AN INFLUENCE ON INTRACRANIAL PRESSURE; AND WHAT OTHER PROCEDURES MAY EXERT A SIMILAR INFLUENCE?

It seems certain from the autopsies in Cases 3 of my former series, and 1 and 7 of the present series, that in certain instances of uremia, if not all, the brain tissue suffers from fluid pressure. This affects the parenchyma itself, distends the ventricles and the spinal canal, and in Case 3 of the former report led to the formation of a cystic cavity in the brain substance leading from the posterior horn of the left lateral ventricle.

Drainage of the cerebrospinal canal indubitably relieves the excess of fluid, as is proved both by the appearance of dilatation of the ventricles at the autopsy and by the repeated dry tapping in Case 5, following an earlier puncture, which showed an excess of fluid.[12]

The prompt relief from clinical symptoms furnishes still more satisfactory proof of this point. It also goes to show that in certain instances the injury to the cortical motor centers is only temporary, and is independent of the occasional destruction of cellular tissue described by Weisenberg as occurring in uremia and referred to in my previous communication. That wholesale destruction may occur is evidenced by this very cyst formation, even more certainly than by microscopic study. I consider the question still *sub judice* whether this tissue change should be credited altogether to the action of a toxin, as held by Weisenberg, or whether perhaps direct pressure may not have an equal or even greater influence in certain instances.

The mechanism seems to be somewhat as follows: Owing both to the toxemia and to the arteriosclerosis, hypertension of the arterial and venous circulation prevails, and as a consequence an increasing hypertension of the cerebral blood and lymph channels. Possibly the toxin carried to the brain by the blood vessels exerts a local action also on the various motor centers. Thus, we find working side by side a toxin and fluid pressure, the latter often in the form of edema, and both capable of producing a similar series of brain symptoms, and both acting, many times, in conjunction.

Possibly the excess of fluid is directly due to the influence of the toxin on the brain tissue or on the meninges, or in any event to strictly local influences. Certain it is that fluid pressure occurs most frequently in persons who are entirely free from general edema or effusion other than that in the cerebrospinal cavity. The toxin, therefore, may be the predominant factor, or, as more frequently occurs, if we can judge from a series of cases like my own, the excess of fluid within the cranium may of itself produce the uremic picture. Whether the uremic picture is due to the one or the other is of little clinical consequence, provided the withdrawal of the fluid relieves the symptoms. The very relief of such symptoms as headache, convulsions, amaurosis, and coma, by mere drainage of the cerebrospinal canal, forces us to the conclusion that portions of the brain are sometimes encroached on and that sometimes there is even an isolated involvement of one or more motor centers, which is most easily and rationally explained by the assumption of a localized collection of fluid or edema, which in favorable cases disappears under the influence of lumbar puncture. Free drainage of the canal depletes at once the ventricles, the brain tissue, and ultimately also the venous and lymph channels. Free bleeding must accomplish the same result by working from the opposite direction, i. e., through the circulation, and secondarily through such a relief of congestive pressure. The latter is, of course, a much more indirect, a slower, and therefore less efficacious process. Bleeding, free diuresis and purging and sweating act in the same manner, by relieving the general circulatory hypertension, and, indirectly, by relieving intracranial pressure. Aconite seems to act in a similar manner by depressing the cardiac vigor and thus diminishing the amount of blood forced with each systole into the already overful brain, and by dilating or relaxing the vessel walls. Nitroglycerin dilates the peripheral vessels to accommodate the excess of blood, but, unfortunately, it also whips up the heart into new exertions, so as to further increase the systolic output.

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[7] La Revue Med. No. 435, 1902, p. 713.
[8] Amer. Med., Dec. 27, 1902.
[9] Semaine Med., June, 1902.
[10] Presse Med., No. 35, 1902.
[11] Brit. Med. Jour., July 11, 1903.

[12] This occurrence should not lead to the conclusion that the fluid does not as a rule recollect. It usually does; in this case it did not.

Of all these adjuvant measures free bleeding, from a vein or artery, seems to be the most rational procedure after lumbar puncture, and only second in importance to the direct drainage of the tissues of the central nervous system.

Thus it seems fair to assume that cerebrospinal drainage relieves the symptoms of uremia by directly relieving the excess of fluid in the brain cavities and brain tissue, and that in certain cases the fluid must be repeatedly removed until it ceases to reform and recollect within the cranium.

IV. WHAT INFLUENCE, IF ANY, WILL RELIEF OF INTRACRANIAL HYPERTENSION EXERT ON A DOMINANT UREMIC TOXEMIA?

The discussion of this question must rest on the assumption that (1) a toxin or toxins are actually at work in uremia; (2) that the vascular hypertension is the direct result of a toxemia; and (3) that the cerebrospinal overpressure which characterizes certain cases is due to the excess of cerebrospinal fluid manufactured as a direct outcome and result of the toxic state.

If we admit these theories to be founded on a fair basis of probability it is easy to proceed a step further and to assume that by relief of cerebrospinal tension, which itself is a result of toxic irritation, we neutralize and gradually lessen the influence of the toxin, which may exhaust itself in this manner in vain, the spinal drainage serving the rôle of safety valve or exhaust. There is also the possibility, though nothing more, that a significant amount of toxin is abstracted with the cerebrospinal fluid, and also by bleeding, and that in this way the amount of toxin is directly reduced. The experiments of Hughes and Carter[13] would seem to indicate that the blood serum of uremic human beings and less so that of the healthy human organism is toxic at least for dogs. Our own animal experiments[1] seem to demonstrate conclusively that the cerebrospinal fluid of uremic persons contains no principle deleterious to the smaller animals. My feeling at the present time is that in all cases of uremia both a toxin (or toxins) and intracranial pressure are at work, and that relief from either must to that degree enable the patient to withstand the assaults of the other.

TRANSFUSION OF NORMAL SALT SOLUTION IN UREMIA.

I have already emphasized my conviction that transfusion of normal salt solution in uremia is contrary to what we know to be beneficial to the state of the individual at the time. Even when there is only the likelihood and not the certainty of intracranial pressure, the result of introducing any liquids, and especially salt solutions, into the circulation will be to raise the pressure still further.

If we first bleed to abstract the toxin and to reduce pressure, and then transfuse in the hope of diluting the toxin (a theory at one time in prime favor) we at once restore one of the conditions most active in producing the symptom-complex of uremia, namely, intravascular and intracranial pressure. A striking demonstration of the truth of this assertion was obtained in Case 2 (this series), which showed decided improvement following the spinal drainage. The resident physician then extracted a small quantity of blood and introduced in its place a considerable quantity of normal salt solution. This procedure was promptly followed by convulsive seizures and coma, and the second lumbar puncture obtained as much cerebrospinal fluid as the first, although the canal had been drained dry not over three hours before. Novi has produced the complete picture of uremia in dogs by the injection of a 10 per cent. solution of common salt solution into the blood stream, until the latter attained a concentration twice that of the normal. Landois has produced "coma and convulsions by simply applying a sodium chlorid solution to the surface of the cerebral cortex. As the substance was absorbed the attacks grew slighter, and perfect recovery at times ensued."[14]

These facts lead me to the conclsuion that no good end can be served and that much ill may be accomplished by veneclysis in uremia, while its opposite, free depletion, is an ideal procedure from every point of view.

METHOD AND INDICATIONS FOR LUMBAR PUNCTURE.

In all my cases I have followed a method of procedure founded partially on the technic employed by others and partly on the difficulties experienced in several of my first cases. A frequent cause of failure to attain the cerebrospinal canal is the employment of an instrument that is too short to reach its destination. Another source of difficulty lies in the fact that a needle is commonly used the lumen of which can not be cleared while *in situ*; and, finally, most cases of failure are noted in subjects with a thick adipose or muscular layer over the spinal column in which the spinous processes are obscured or lost, as is also considerable of the needle's length. I used in my second case and still constantly employ a small trocar and cannula, the latter nearly 8 cm. in length, and its lumen measuring 1.5 mm. This instrument was resorted to owing to the fact that the small needle used in the first operation repeatedly became clogged in its passage through the cartilage and in this case more than once failed to reach the canal.

When the tissues overlying the vertebral column are excessive I also make a small incision over the upper lumbar vertebræ large enough for the insertion of the forefinger. With the patient in the left lateral position, his knees approximating his chin as nearly as possible, I then introduce the trocar and cannula between the second and third or between the third and fourth lumbar vertebræ. Klein recommends the third and fourth interspaces, and publishes an illustrative series of diagrams showing the relative positions of the vertebræ in the cadaver. The instrument passes along the finger, then downward and slightly outward beside the spinous process, feeling for the yielding of the cartilage. The feel as the trocar leaves the bone and enters the cartilage is unmistakable, and as the needle can not penetrate any other structures so long as it keeps fairly close to the spinous process, it is probable that the first yielding surface is the sought-for intervertebral disc.

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[13] Boylston Prize Essay, 1893.

[14] Quoted from previous communication.

Ossipow[15] has pointed out the various dangers of the otherwise very simple operation, but with cleanliness and care in the presence of undoubted uremia there should be no time lost in proceeding to the operation. Fatal meningitis has rarely been caused where none existed before. Mathes,[16] and Furbringer, Kronig, and Lichtheim have all reported cases in which death followed the puncture. The latter observers withdrew at times from 100 to 150 c.c., reducing the intraspinal pressure from 420 to 180 mm. of mercury. Millan[17] cites the case of a young woman punctured for chronic headaches, in whom extremely severe headache followed the operation, with vertigo, nausea and vomiting. In contrast to such occurrences, I must cite the present series of cases, in each of which relief, not aggravation, of the symptoms was the result.

I have obtained my best results in cases in which the fluid spurted from the cannula. In some of these the serum was clear and in some bloody; thus in all the present series of cases the fluid was clear, except one in which blood (which promptly coagulated and probably originated in a punctured vessel) and serum flowed from the cannula together. This case, however, showed a most prompt and gratifying result and the patient is still alive as evidence of the success of the treatment.

I have also obtained clear and again bloody fluid from cases which proved afterward to be fatal. A syringe pump is never necessary, as the fluid if present in excessive quantity will force its way out of the tube as soon as the latter enters the canal; and I incline to the belief that many of the unfortunate results have been due to the use of the syringe. On the other hand, it is my belief that all cerebrospinal fluid should be withdrawn, notwithstanding Ossipow's conclusion that hemorrhage into the brain and cord is likely to occur after the withdrawal of considerable quantities of cerebrospinal fluid. I have seen no unfortunate results attributable to the operation in any of my cases and in some I have allowed the wound to drain for several days, to obviate the necessity of repeating the puncture. In one case I drained the cerebrospinal canal for more than three days with excellent results, the fluid escaping in such profusion as to keep a thick gauze dressing and the nightclothes constantly moist. Of Seiffert's cases, there were two in which he did repeated lumbar puncture with resulting recovery. I have already cited Boky's, Concetti's, and my own cases in which repeated punctures were performed with final benefit to the patient. Occasionally the cerebrospinal fluid is bloody, and sometimes it flows like thick blood. Normally it is thin and clear. When viscid the fluid may take its character from an admixture of blood from torn vessels outside the canal, or from vessels in the dura mater, or in the pia mater. If the latter is the source, the fluid should become clear on withdrawing the cannula a short distance. Blood from a vessel will also promptly coagulate in the air under ordinary circumstances; blood from the spinal canal will not, owing to thorough mixture with the cerebrospinal fluid. If the ruptured vessel is in the dura mater a little deeper insertion into the canal will clear it of contact with the bleeding surface. If a trocar and cannula be employed, the plunger can clear away obstructions to the tube at the will of the operator. A yellowish or reddish tint usually indicates the presence in the fluid of hemoglobin or of red corpuscles actually in solution.

CONCLUSIONS.

In summing up my conclusions, I would call especial attention to the fact that by no means all cases that show chronic interstitial nephritis are subject to uremia, and to the still more important circumstance that neither sclerosis of the kidney, nor, in fact, arteriosclerosis, predisposes to uremia until hypertension of the vascular system is superadded. The two by no means always go hand in hand. Many cases of high-grade sclerosis present a comparatively normal blood pressure. Certain cases of hypertension show little or no sclerosis and yet apoplexy occurs. Add to sclerosis of the arteries and veins hypertension, however, with the consequent intracranial tension due to this and to local toxic irritation, and we have present at once the ideal conditions for the causation of the uremic picture.

The preceding series of ten cases treated entirely with a view to relieving pressure appears to warrant the following conclusions:

1. The belief is reaffirmed that various toxins are influential in producing the symptoms in various instances of uremia. Among these, probably the most important is one originating in an abnormal digestive tract, or elsewhere, and resembling adrenalin in its physiologic action, as suggested by Thomson.

2. Whether as a result of or a coincidence with toxic irritation, intracerebrospinal overpressure, due to an accumulation of fluid, may and usually does cause the majority of the classical symptoms of uremia, and is often the dominant influence.

3. Spinal drainage may, and in many cases does, promptly relieve the symptoms of uremia, furnishing clinical proof of the foregoing statement.

4. Case 5 demonstrates the fact, however, that occasionally when intracranial pressure has been removed the toxin alone may cause the picture of uremia.

5. Uremic manifestations (other than coma), when due to intracranial pressure, may be either general or localized. Unilateral convulsions, convulsive movements of one limb, monoplegia, hemiplegia, motor or sensory aphasia, and similar phenomena are of rather frequent occurrence. The toxic influence, in the few instances in which it has seemed to act independently of intracranial pressure, has caused only general manifestations, usually of an irritative nature (convulsions, etc.), seldom, if ever, paralytic phenomena.

6. Uremic hemiplegia and other uremic paralyses are due usually to direct pressure on, or edematous infiltration of, the motor centers of the brain, and may usually be relieved by withdrawal of the cerebrospinal fluid.

7. There is a striking suggestiveness in the frequent absence of general edema, though there be an excess of intracranial fluid, arising from an entirely different influence and cause. My most successful cases showed

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[15] Deuts. Zeits. f. Nervenheilk, No. 2.
[16] Mathes, Centralbl. f. Gyn., vol. xxviii, No. 8, 1904.
[17] Semaine Méd., June 18, 1902.

no edema of the external body, but without exception a high degree of intravascular and intracranial tension.

8. Lumbar drainage should be employed as a routine measure, together with all the known means of reducing systemic pressure or hypertension. Among these the most valuable are free bleeding, free purging, free diuresis, and the administration of large doses of aconite.

9. The ultimate cause of the vascular hypertension of uremia has not yet been discovered. It would appear by no means impossible that the intracranial fluid pressure is partly due to toxic inflammatory exudate; that this causes hypertension within the cranium and favors a similar hypertension throughout the general circulation, or vice versa; and that the symptom-complex of uremia is thus usually due to such a sequence of causes. Probably uremia can not occur in the presence of low intravascular and intracerebrospinal tension.[18]

10. It would appear from the failure in repeated instances to produce any deleterious effect on healthy small animals by injecting successive small quantities of the cerebrospinal fluid from uremic subjects that the toxic principle of uremia is not to be found in the latter. The experiments of Hughes and Carter in 1893 seemed to show that it may possibly be found constantly present in small quantities in the normal blood serum.

11. While lumbar puncture is not infallible, nor devoid of a slight risk to the patient, the procedure should be employed early in the course of uremia, and repeatedly if necessary to accomplish the lowering of systemic hypertension. It may save life and will often dissipate the uremia at least for the time being.

12. Transfusion of normal or other salt solution is harmful in uremia, in that it causes, both by its mechanical and chemical influence, an increase of intravascular and intracranial tension, and supplies certain of the conditions necessary to the uremic seizure.

MOVABLE KIDNEY.

IS IT A SURGICAL LESION? IF SO, HOW IS IT BEST CORRECTED?

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OMAHA.

Further interest in this subject is aroused by a recent contribution from Mr. Treves in which he facetiously questions the existence of this lesion, but immediately suggests a treatment by means of a complicated double-spring truss which, he says, must be delicately adjusted.

It is well understood that the kidney, normally, has a certain range of motion; it is generally admitted that the degree of mobility varies considerably and that it may attain a position easily palpable yet may not cause pathologic changes; it is an accepted fact that its ptosis is sometimes but a part of Glenard's disease; but faithful observers of the anatomy and the pathology that is seen within the abdomen in repeated explorations recognize the additional and—clinically speaking—the rather more important fact that the kidney may attain such a degree of mobility as primarily and seriously to act as an impediment to health and that in so doing it produces in the contiguous organs a pathology which can be neither palliated nor cured by the delicate adjustment of any form of spring truss—the opinion of Mr. Treves to the contrary, notwithstanding.

That this position can be supported will become apparent from the argument of two propositions: first, that the anatomic surroundings of the kidney, in some people, encourages its wide displacement; second, that when so displaced its presence sets up contiguous inflammatory changes, especially peritoneal adhesions, for the relief of which an abdominal support must be impotent, and its use pernicious.

To sustain the first proposition it is but necessary to recall the well-known fact that the postabdominal lumbar fossa, in which the kidney rests, is practically absent in some people. Experienced clinicians actually get accustomed to suspect a movable kidney in a long-waisted, thin-flanked woman. This physical build is in fact the type in which the movable kidney most frequently occurs, although no physique should be considered free from the possibility of the occurrence of a wandering kidney.

Another observation which is made by those who explore the abdomen is that the peritoneum, in its resistance, in the strength of its texture and in the firmness of its attachments, presents the widest variations. It offers, therefore, an equally uncertain support to the kidney. Indeed, it has been my view for some time that the variations in the reflections of the peritoneum, especially in the right side of the abdomen, and the wide difference in its strength and mature development, influence to a marked degree acute and chronic inflammatory changes of this neighborhood.

I would not underestimate the positive relations which exist between the implantation of a virulent germ on the peritoneum and the acute destructive inflammation which follows, nor would I overlook the well-known principle that the location and the amount of exudate are influences directly proportionate to the severity and the dangers attending a given attack of peritoneal sepsis.

But what relates more especially to this subject of nephroptosis is that the peritoneum, like the integument, differs in its susceptibility to irritations and morbid changes. If necessary, I could still further sustain my view by applying the well-known principle of immunity to this subject, viz., that the cells of the body as well as the blood directly contribute to the terminations of abnormal changes when they are once started.

It must appear plain, then, that proposition No. 1 is proved on the ground of individual differences in the topography (amount of concavity) in the lumbar fossæ behind, and in the support offered by the strength and firmness of attachment of the peritoneum in front. Other influences, although important, are, I believe, chiefly contributory or exciting in character, while the two reasons above mentioned are the predisposing ones.

Among the exciting causes, traumatism, variations in intra-abdominal pressure (gestation, tumors or a relaxed muscularis of Glenard), absorption of perirenal fat, occupation influences, or disease of the kidney itself may be mentioned, but generally speaking they are minor in importance.

Proposition No. 2 may be considered demonstrated when I enumerate some of the results of the abnormal range of motion of this organ, which weighs 5 ounces and which has become migratory, namely: the stretching and the uplifting of the peritoneum with the organs which it covers, the direct pressure in one case of the upper pole on the bile ducts and in another of the lower end on the cecum and appendix, the attrition itself on the peritoneum, producing, at least in some people whose resistance or cell immunity is not great, adhesions between adjacent peritoneal surfaces, the crowding of the omentum to the right side and the interference of the adhesions with return circulation and peristalsis—results but the most tangible and easily recognized changes which primarily and seriously impair the health—to say nothing of the reflex disturbances through the sympathetic nerves.

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[18] The clinical results obtained by spinal drainage, in the relief of arterial hypertension, confirm the conclusions of Cathelin (Presse Médicale, vol. ii, No. 90, 1903) with regard to a constant intercommunication between the blood circulation and the cerebrospinal fluid by means of lymph vessels.

With these observations I rest this part of my case. To go into the realm of symptomatology is not my purpose, for the reason that symptoms occupy a scope so wide that one observer has said that the very indefiniteness of the symptoms in some cases should suggest movable kidney. Another mentions that a large proportion of the symptoms of disease in general are represented in movable kidney. I believe that when a movable kidney is causing changes which demand surgical interference the symptoms are fairly represented below in class three.

TREATMENT.

Approaching the treatment of nephroptosis gives us a chance to point out the fallacy, if not actual danger, which must follow teaching which employs too prominently the words "always" and "never" in suggesting therapeutic aid, for surgical rules are not permanently fixed and one who teaches that one plan should be always used or that another method should never be followed, promulgates a doctrine harmful in the extreme.

In this affection I believe that the rational treatment will be fairly reflected by pointing out in a judicial way the following facts:

(*a*) Many cases in which the kidney is sufficiently movable to be plainly palpated do not need any surgical treatment. Hygienic and dietary care, with efforts in the direction of increasing the body weight, are logical measures.

(*b*) In other cases the symptoms are more obtrusive, the degree of mobility greater and the reflex symptoms more pronounced, yet intermittent in character. In an individual who is in a position to follow the above rules (under *a*) and to take conveniently a protracted rest, great amelioration in the symptom and in the position of the kidney can be secured.

(*c*) I will here place that class of patients who manifest the trouble in the most exaggerated form, in which there is a palpable and tender kidney, disturbed digestion, headache, dizziness, emaciation and the passage of a large amount of slime and mucus with the bowel movements, with perhaps nausea and even vomiting with recurrent attacks of jaundice. There will be a history of a dull, heavy, aching, recurrent pain about the right side (the right side being most frequently affected), although the patient will not, as a rule, be able definitely to locate the distress. The pulsations of the abdominal aorta are accentuated. The individual especially complains that she becomes completely exhausted on slight exertion and that she is unable to rest comfortably on the left side. Severe, colicky, renal pain due to twisting of the ureter is not common.

I will not differentiate gallstones (cholecystitis) nor appendicitis, either may exist in a case having a movable kidney which may act as an exciting cause of the latter.

In my experience, which includes 62 cases, I have found the following condition which, so far as I am aware, has not been described, viz.: a kidney displaced downward to a point opposite the last dorsal vertebra and fixed in this position, so adherent as to require most careful separation of adhesions and to make its replacement very difficult.

Meeting these severe cases as well as many others in which reposition of the kidney was fairly easily accomplished, yet in which the adhesions between the kidney and the peritoneal surface were most marked, and then exploring the abdomen to clear up all doubts concerning the appendix and the biliary passage and finding no evidence of inflammation in either, and yet finding the omentum matted in dense adhesions to the ascending colon and to the parietal peritoneum, has led me to the positive conviction that a kidney which has become movable on account of the anatomic peculiarity of the patient and which, for the reasons above cited, has caused definite and severe pathologic changes involving particularly the peritoneum, embarrassing the functions of digestion and assimilation and producing reflex disturbances not surpassed by any other lesion, that such a kidney will not tamely submit to a cure which consists in the delicate adjustment of a double-spring truss, which makes pressure on the anterior surface of the abdomen.

ESOPHAGOTOMY FOR THE REMOVAL OF FALSE TEETH,

WITH SOME REMARKS ON COLON ALIMENTATION.*

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History.—A man, 50 years old, a sculptor by occupation, in good health, on Monday, Feb. 27, 1905, at 11 p. m., in a fit of laughter, dislodged and swallowed an artificial plate of vulcanized rubber to which two false upper incisor teeth were soldered.

This plate, crescentic in shape, measured from point to point along the arch two and one-half inches, the direct diameter between the two points of the crescent was one inch and a half, the widest measurement of the plate at the center, including the teeth, was five-eighths of an inch. (Fig. 1.)

Two hours after the accident he was carried to the city hospital in Cincinnati. The house surgeon introduced his finger deeply into the pharynx, but did not feel any foreign substance. On account of severe spasmodic pains, the patient was given several hypodermics of morphia during that night. At 8:30 the next morning deglutition was extremely difficult, the patient complaining of severe pains in the throat and both sides of the chest.

At 11 a. m. of the 28th he was given a small piece of bread which, after thorough mastication and moistening with a draught of water, was swallowed. The surgeon who then visited him introduced a bulbous bougie into the stomach without recognizing the presence of any obstruction. For the eight days he remained in Cincinnati nothing further was done for his relief. In the meantime, on account of pain, the patient took morphia and sustained himself on soft foods and liquids.

Ten days after the injury he went to Indianapolis to attend to professional business, remained there one day, then to Memphis, thence to Atlanta, returning to Cincinnati several weeks after the accident. He then came to New York to consult Prof. R. C. Myles. The latter had a radiograph made which showed distinctly the outline of the plate lying just behind the upper portion of the manubrium, the convexity of its curve looking upward and toward the patient's left shoulder.

Instrumental examination confirmed the location of the foreign body, which so completely closed the esophagus that the finest bougie would not pass it without using a degree of force which was considered unjustifiable. The patient by this time was much emaciated from six weeks of semi-starvation, for the last four days of which he had swallowed only a small quantity of liquids.

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* Read before a special meeting of the Clinical Society of the New York Polyclinic Medical School and Hospital.

Operation.—I saw the patient, Sunday, April 9, six weeks after the accident. Dr. Myles made several attempts to remove the obstruction by seizing it with esophageal forceps. It was, however, so firmly imbedded that it could not be dislodged. The patient was removed to the private pavilion of the Polyclinic Hospital, and at 3 o'clock on that afternoon, assisted by Dr. Myles and the Polyclinic staff, esophagotomy was performed. Chloroform was selected as the anesthetic, as it was desirable to avoid vomiting during or after the operation.

An incision five and one-half inches in length was made along the anterior border of the left sterno-mastoid muscle, the incision extending one and one-half inches on to the surface of the manubrium. The fibers of the sternohyoid and the sternothyroid muscles were separated by dull dissection, the left lobe of the thyroid body turned upward, and careful traction made on this in order to avoid over-tension of the recurrent laryngeal nerve, which was clearly seen as it came from behind the carotid artery and passed upward and inward in the general direction of the inferior thyroid vessel of that side.

In the exposure of the esophagus at this low level very considerable care was necessary to avoid injury to this nerve. A bougie was carried into the esophagus by Dr. Myles, and on this as a guide I made an incision three-quarters of an inch in length through the gullet on its left posterior aspect. This was gradually dilated by inserting the index finger which, carried down to its full length, barely came in contact with the upper rim of tne plate. On the finger as a guide a pair of dull-pointed scissors, curved on the flat, was passed anterior to the plate and slightly beyond it. With this on one side and the finger opposing it, the upper corner of the plate, which was deeply imbedded in the walls of the esophagus, was carefully loosened and tilted upward, and in that way dislodged and brought up lengthways to the wound and extracted without any further difficulty. The wound in the esophagus was left open, while the upper portion of the superficial wound was closed with four or five silkworm gut sutures. The deeper wound was filled with a light packing of sterile gauze. There was no vomiting during or after the operation.

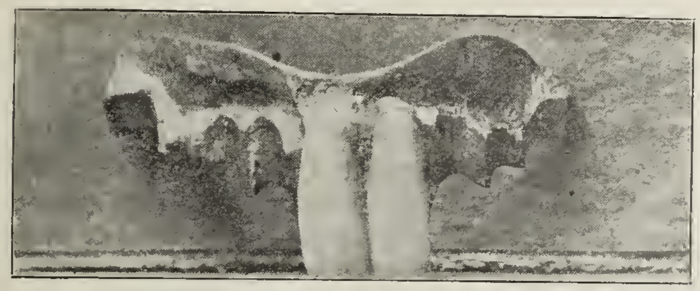

Fig. 1.--Artificial plate. Natural Size.

After Treatment.—The patient was placed in bed on the back, the foot of the bed elevated about twelve inches in order to facilitate drainage upward and away from the mediastinum. Every four hours he received six ounces of normal salt solution by the rectum for the first twenty-four hours. After this the quantity was increased to eight ounces, and in the intervals two nutritive enemata were given. He suffered practically no pain after the operation.

Nothing passed into the esophagus for the four days from Sunday until Thursday, April 13. On this date a tube was easily introduced through the mouth and esophagus and sixteen ounces of milk were carried into the stomach. This was repeated on the next day. On the following day, the 15th, six days after the operation, he began to swallow liquids, and of sixteen ounces of milk given four ounces came out through the wound. The proportion which leaked through gradually diminished by April 20, twelve days after the operation, the esophageal wound was entirely healed, and he is now entirely recovered.

COLONIC ALIMENTATION.

The value of alimentation by the colon as a feature of surgical practice is so important that the following is submitted:

For conveying water by the lower bowel to the blood, normal salt solution should be employed (one teaspoonful of salt to one pint of water which has been boiled and allowed to cool down to the temperature of the body). From six to eight ounces to as much as a pint, and at times more than this, may be employed if absolutely necessary. The foot of the bed should be well elevated so that the liquid will gravitate away from the rectum and thus avoid pressure which induces an effort at evacuation. When there is great intolerance of the lower bowel smaller quantities should be employed with more frequent repetition.

MILK PREPARED BY THE WARM PROCESS.

One of the most useful foods given by the colon is milk. When the bowel is irritable the warm process, which is as follows, should be employed: Put a teacupful (gill) of cold water and the powder contained in one of the peptonizing tubes[1] into a clean quart bottle and shake thoroughly; add a pint of cold fresh milk and shake again; then place the bottle in a pail or kettle of warm water—about 115 F.—or not too hot to immerse the whole hand in without discomfort. Keep the bottle in the water bath for from thirty to forty minutes or longer if a greater degree of pre-digestion seems necessary, then put it immediately on ice. As a portion is needed, shake the bottle, pour out the quantity—usually four ounces—and heat gently to blood warmth. Avoid hasty heating and over-heating.

Six, eight, or twelve ounces may be given every four or five hours, or a larger quantity if the case is urgently in need of nutrition and the bowel is tolerant. In rectal feeding it is of great importance not to overcrowd the colon sufficiently to produce irritation.

COLD PROCESS.

In cases where the enema can be retained for some time without irritation, the milk may be peptonized by the cold process. Put a teacupful (gill) of cold water into a clean quart bottle and dissolve it by shaking thoroughly the powder contained in one of the peptonizing tubes; add a pint of cold fresh milk, shake the bottle again and immediately place it directly in contact with the ice.

Warm each portion as it is required for injection, being careful to avoid hasty heating or over-heating.

Or, only a sufficient quantity to use may be prepared each time by the following method: In two tablespoonsful (one ounce) of cold water dissolve one-quarter of the contents of a peptonizing tube; add eight tablespoonsful (four ounces) of cold milk; warm to the proper temperature and inject at once.

EGGS.

In administering eggs the following formula is advisable: Dissolve the white of an egg in three times its bulk of warm water; to this add the contents of one of the peptonizing tubes, stir well, and inject at once. The water should be just warm enough to make the mixture the proper temperature for the injection, not hot enough to coagulate the albumin.

Another method of using the whole of the egg is to beat the white and the yellow well together, with a pint of milk, adding a gill of water in which the contents of a peptonizing tube has been dissolved. It may be employed cold, but if it is thought best to use the warm method, warm water can be used as in the formula immediately preceding.

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[1] I prefer those prepared by Fairchild Brothers & Foster.

BEEF JUICE.

In using beef for rectal feeding, to a tablespoonful of minced lean beef add four tablespoonsful of cold water, and gradually heat to boiling. Strain all through a fine sieve or colander. When it becomes lukewarm add the contents of one of the peptonizing tubes, and it is ready for injection. More water may be added should it seem desirable.

PEPTONIZED FOOD AND WHEY.

I have used Fairchild's panopepton in rectal feeding with much satisfaction. It should be diluted in two or three parts of lukewarm water, or preferably, normal salt solution.

If it be desired to employ whey, it can be combined with panopepton at times as follows: Put one pint of cold fresh milk in a clean saucepan and heat it to not over 100 F. Add two tablespoonsful of essence of pepsin and stir just enough to mix. Let it stand until firmly jellied, then beat with a fork until it is finely divided, and strain. Warm to the proper temperature and inject without dilution. Panopepton and whey may be used in conjunction by adding three parts of whey to one of panopepton.

Panopepton and peptonized milk may be used by mixing one tablespoonful of panopepton with two or three of peptonized milk prepared by the warm process. Mix the panopepton and peptonized milk when required for use.

THE SUBMUCOUS RESECTION OF DEFLECTED NASAL SEPTI.

THE SO-CALLED KILLIAN OPERATION. REPORT OF CASES.*

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This operation has been credited to various authors, among them being Killian, Hajek, Mensell, Janen, Freer, Krebs, Boenninghaus and others. It is, however, generally spoken of as the Killian operation, and perhaps it will not be amiss for me thus to speak of it in this paper.

The operation consists essentially in a submucous resection of the deflected area, whether in the cartilaginous or bony septum, or both, and the *modus operandi* and technic, while tedious and trying to both patient and operator, yet offer, on the whole, a brilliant and satisfactory result.

The various steps will readily be understood by referring to the illustrations here offered. The incision is made from above down, beginning on the side of the occlusion with membraneous septum and tip of the nose turned abruptly away from the occluded nostril.

This maneuver brings sharply to view the anterior border of the cartilaginous septum. With a sharp bistoury, this linear prominence is traversed from above downward, the incision being just deep enough to bring into view the anterior border of the white glistening septum. The mucous membrane is elevated, together with the perichondrium, on the convexity of the deflection, and this lifting-off process is continued well back of the deflection, extreme care being taken not to push the elevator through the mucous membrane. Should this be done, perforation will occur, especially if a similar thing has been done on the other side. It must be borne in mind that the lifting off of the mucous membrane must extend well up and low down, and that this must be thoroughly done before beginning to remove the deflected area, or else, in the removal, that part of it from which the mucous membrane has not been thoroughly elevated will drag along its mucous cover, and so give rise to a perforation. Having separated the mucous membrane from the septum on the one side, the same proceeding is carried out on the other, starting from the tip of the septum as before, and from the same nostril. At the beginning, it is well to employ a knife in order to make the cleavage exactly between the septum and the perichondrium. Once that this start is made, however, it is best to employ some sort of a periosteal elevator.

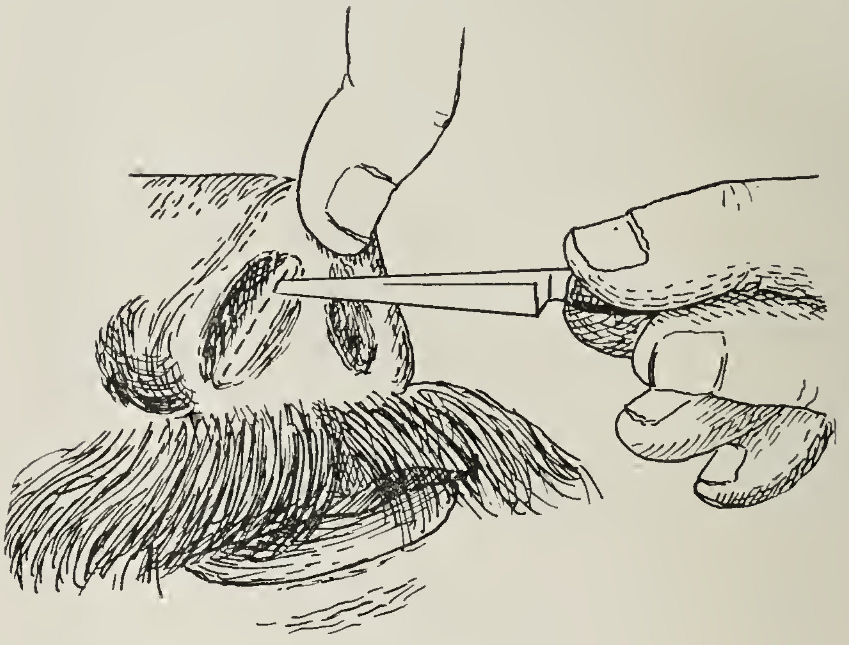

Fig. 1.—First step in operation.

In order to facilitate the peeling-off process, and also to increase one's orientation sense, it is best, and, indeed, I may say that it is a *sine qua non* for the successful performance of this operation, to employ the Killian long nasal speculum, the blades of which extend well back into the nostril. At the outset, it is more convenient to use the ordinary Kramer bivalve speculum. Later, however, as the separation has increased, it will be much better to use the Killian instrument. Once

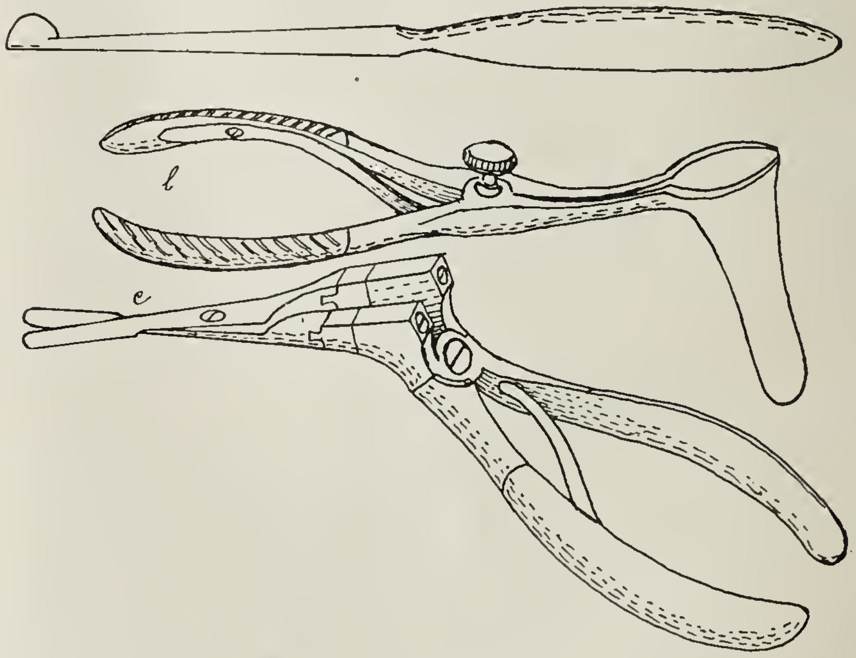

Fig. 2.—a, Combination periosteotome and knife; b, long-bladed Killian nasal speculum; c, Hartmann's conchotome.

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* Read before the American Laryngological Association at Toledo, Ohio.

that some progress has been made on the second side, the speculum may be employed, with the cartilaginous septum between the two blades. This will aid materially in the work, giving a clear idea as to location, etc. (Fig. 2).

Having carefully peeled off the mucous membrane, the septum may be removed from before back (Fig. 3), except the upper part, one-quarter from the roof of the nose. This is important. Hajek believes that the retention of this part of the septum aids in preserving the symmetry of the nose.

The amount to be removed depends on the extent of the deflection, and whether or not it is in the bony part, experience having shown that the vomer can be removed if necessary and no bad results follow. Very generally that part of the septum made up of the perpendicular plate of the ethmoid must also be removed. The instruments employed in the removal of the septum are a pair of scissors, and I usually use the ones after Hajek and Hartman, a conchotome, and a chisel, the latter being used to remove that part of the septum which articulates with the maxillary ridge along the floor of the nose.

By observation and experience it has been impressed on me that the removal of this portion of the septum along the floor of the nose is the most difficult part of the operation, and it is here, too, that one inflicts the most, if not the only, pain in the operation. In my first two cases I employed a rongeur in crushing this bony ridge; this necessitated strong downward pressure, with resultant pain; in one of my cases I used a chisel, placing it where wanted and having an assistant tap it with a hammer.

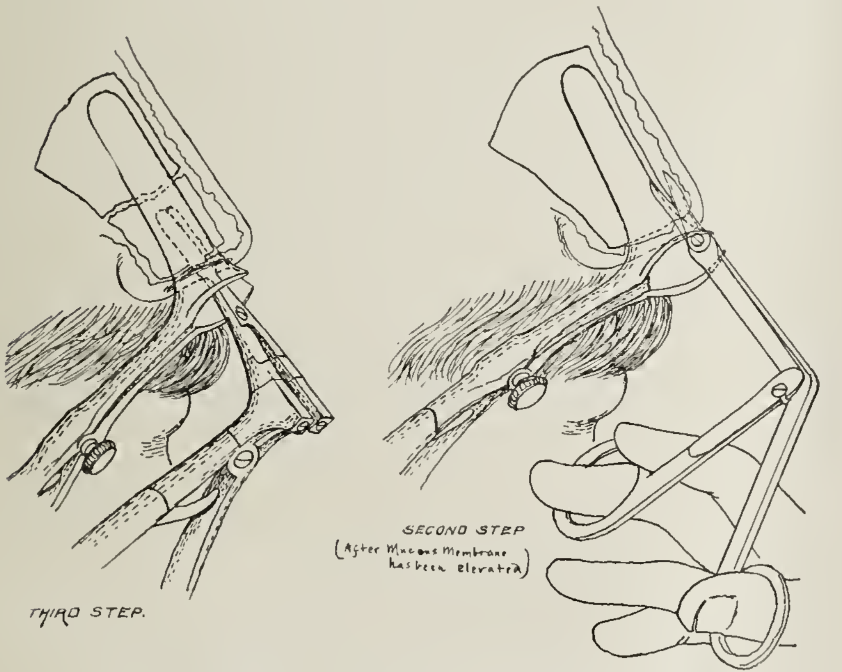

Fig. 3.—Second and third steps in operation.

In beginning the operation, I apply a 20 per cent. solution of cocain to the septum, following this with adrenalin, after which a Schleich solution is injected under the mucous membrane. This infiltration, in addition to bringing about a condition of anesthesia, also aids in lifting off the mucous membrane, paving the way, so to speak, for its elevation and removal. It is well in the removal of the septum carefully to inspect the progress being made,, and in no better way can this be accomplished than by repeatedly inserting the little finger in the nostril and by palpation determining whether the defect is being properly removed. It is astonishing what a keen sense of satisfaction this will impart and how unerringly the operator can proceed.

Having removed the offending part of the septum, the two mucous flaps usually fall gracefully into the middle line. To quote Hajek, the septum is now *"Künstlich dar gestellt besser als es gewöhnlich ist im natur."*

In one of my patients I purposely left small islands of cartilage, believing that this would leave a nidus for future proliferation, and so it has proved, the septum having a no inconsiderable degree of rigidity.

The after-treatment of these cases is simplicity itself, and this is in marked contrast to most of the other operations which necessitate splinting, etc. A loose packing of iodoform gauze is placed in each nostril and allowed to remain till the next day. I do not think it at all necessary to use sutures; indeed, I think it imperative to leave the wound open for the exit of whatever oozing or bleeding there may be. I remove the packing daily for several days, and usually I find no need of replacing it after the third day.

There will be some bleeding and oozing the day of the operation, but nothing of an alarming character, and soon danger from this source is *nil.*

The first case which I report is of peculiar interest, inasmuch as an Asch operation had been performed with negative results, and which left a slight perforation.

Case 1.—The patient gives a history of having sustained a fracture of the nose from the explosion of a cylinder of carbonic acid gas. He noticed that after that occurrence his nostril was occluded on the right side. He suffered greatly from periodic attacks of what he calls hay fever, together with headache and the usual semi-suffocative sensation which these patients have. He also had the marked stuffy nasal voice noticed so often with a deflected septum.

Examination.—An examination of the nose revealed a somewhat unsymmetrical external appearance with a slight depression near the tip. An examination of the right nostril showed a huge deflection which extended well back and involved the bony septum. As the vestibules of the nostrils were large, they were quite ideal for intranasal manipulation. The left nostril was also choked, due to an enlarged inferior turbinal, together with a collection of small polypi.

Treatment.—The polypi were removed and their bases cauterized. The turbinate was also put through the same process. I operated in this case in the manner described, the result being all that could be desired.

Result.—Breathing was re-established on the occluded side. Except for a slight perforation which is not chargeable to this operation, the appearance of the septum is quite ideal. The patient expresses himself entirely pleased, being loud in his praises of this method in contrast with his former operation; especially does he emphasize his gratitude and approval of the absence of the splints, which he thought a species of refined torture. To quote his own words: "I am glad you will not have to put that lobster claw in my nose, for if you do I prefer to leave my nose in its present condition."

Case 2.—The second patient has been the subject of impeded nasal respiration as long as he can remember, and in his position as captain of one of the local fire stations, was much annoyed, as at times he was practically incapacitated from properly pursuing his work, because of his inability as a mouth breather to contend with the smoke encountered on entering a burning building.

Examination.—An examination of the nose showed a bending of the septum to the right, with an inability to breathe through this nostril.

Treatment and Result.—He was operated on by the resection method, and is now able to breathe very well and is satisfied with the results.

Case 3.—The third patient has had difficulty in breathing through his left nostril for a number of years, due, he thinks, to being struck on the nose with a baseball bat. The hearing in his left ear is considerably obtunded, being on the side of the occlusion, a not infrequent concomitant of deflected septi.

Treatment and Result.—He was operated on under local anesthesia and the deflected area resected. With the exception of a small perforation the results were ideal. I attempted to close the perforation with sutures and was partially successful. I believe that if these perforations are closed at once they can be healed.

SUMMARY.

The points reached in this paper may be briefly summarized as follows:

1. Submucous resection of deflected nasal septi can be performed under local anesthesia with but relatively a small amount of pain.

2. This operation offers the most certain results in all deflected septi, whether in the cartilage or bony septum, or both.

3. The sagging back into the former pathologic position, as is often seen in other operations, notably by the method of Asch and by the use of the punch, can not occur with this operation. The offending area is removed, and hence is not susceptible of recurrence.

4. The correction of this condition by an operation without the necessity of employing splints places it well in the foreground from a humanitarian point of view, for, say what we will, splints are painful, do not always accomplish their purpose, and make the operation unpopular. Any operation which does away with their use can safely be accepted as a valuable step in advance.

5. The after-treatment with this operation has been cut down from four to six weeks by the old method, to two weeks at the most. It is painless, less apt to have sepsis, and with care perforation can be avoided.

6. It has been said that this method takes too long, but that can not be rightly charged to the operation.

7. In conclusion, this operation offers the most rational, the most certain and the most enduring results. It is not so hard to perform as it looks, it requires no special instruments beyond what are usually found in a rhinologist's armamentarium (except a Killian long-blade nasal speculum), and, lastly, with this operation we have been given a means of overcoming what has been, to a considerable extent, a reproach to rhinology, the non-successful septum operation.

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INSANITY AT PUBERTY.*

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Though pubertal insanity is rare it is important not only because many patients die and others are left permanently demented or imbecile, but also because in many of those who seemingly recover the attack is a warning of liability to mental breakdown later in life. Since the true cause of insanity is largely within the individual, is part and parcel of his mental makeup, depends relatively little on the mere accidents of his external life, his environment, and much on his ancestral history, and since the exciting causes merely give opportunity for insanity to arise, any mental abnormality occurring during the developmental period is of importance, however trifling it may seem in itself, as indicating mental instability or a tendency toward deviation from the normal, which under proper education may be corrected, but which if left uncorrected will certainly lead to disaster in the future.

Mental disease appearing in childhood, at puberty, during adolescence, or indeed at any period of life, indicates that the patient possesses less than the normal power of resistance to stress, whether it be the mere ordinary wear and tear of life, the exhaustion of bodily disease, mycotic infection, or vicious habits. Persistent recurring somnambulism, outbursts of causeless violent anger, frequent night horrors and day horrors in children are all signs of nervous and mental instability which can only be corrected by the greatest care and wisdom in education. Since puberty is the first and greatest period of mental and emotional stress it is not remarkable that then insanity greatly increases in frequency. At this time also it begins more nearly to resemble the clinical picture seen in the adult. In childhood its manifestations are simpler than in the adult because the mental and emotional life is simpler. The mental life of the insane is based on perverted reminiscences of past experience and is rich or barren, simple or complex, as the previous life was full or empty. Complete dementia alone pulls down all ages and all intelligences to the dead equality of mindlessness. The insane child may suffer from maniacal outbursts, emotional or intellectual depression, hallucinations, transitory delusions, obsessions and imperative impulses, and he may, of course, from the violence of the disease, be left demented or imbecile, but he cannot present the rich growth of delusions shown by his elder brother. He who has never heard of kings can not have the delusion that he is a king, and only those who have had strongly impressed upon them the dogma of the unpardonable sin can believe they have committed it. He alone can think he is persecuted who has learned something of the real persecutions that exist in the world. The child cannot show the curious perversions of logic of the adult paranoiac because logic itself is only just beginning to appear in him. The adult chronic reasoning maniac often possesses rich wit, perverted yet real. The boy shows only an impish mischievousness. As gradually, at puberty and through adolescence, the emotions broaden and deepen, sexual feeling appears, pure egotism normally becomes less marked and intellectual judgment comes into being, insanity conforms more and more to the adult type.

The study of psychiatry has been much hindered in its progress by the fact that we arbitrarily confine insanity within very narrow limits and pay but little attention to mental symptoms outside its boundaries or too often content ourselves by explaining them on the ground of viciousness. Much seeming viciousness is real disease. Psychiatry needs for its material for study not only the inmates of asylums and hospitals, but also the world at large, both old and young, well and ill. Wise schoolmasters know more about the normal and abnormal development of children than many physicians and could throw much light on obscure problems of mental disease. Unfortunately many schoolmasters are not wise, but foolish, mere hearers of lessons and correctors of exercises.

The types of insanity occurring at puberty and adolescence are as numerous as the types of boys and girls. Everyone is probably a little unbalanced at this time. This is physiologic. It is associated with sexual development and dependent on it. The healthy boy of healthy stock, even though his environment may be far from the best, passes through this period successfully and finally reaches stable equilibrium, the other now begins to show signs of abnormal development which later will grow into some distinct form of insanity. Probably the most common type, though seldom seen by alienists, and but little studied because its victims rarely get into asylums, or, indeed, receive medical attention at all, is a slowly oncoming weakening of the mind without delusions or hallucinations, a mere gradually increasing disability for mental work, usually stopping far short of complete dementia. Every schoolmaster knows the type. A boy who before puberty was bright, learned quickly and was interested in all things which make up a boy's world, begins to be inattentive, learns less and less readily, loses all ambition, no longer wishes to do things, ceases to have interest in play, becomes asocial and physically inert. He may present no moral abnormality, indeed, frequently his moral nature is of the best. The difficulty is entirely intellectual. His final state is that of mild dementia coming on slowly, not the result of any acute infectious disease, nor of masturbation, but caused by an inherent, congenital inability of the organ of mind to withstand stress. He is born with potential power enough to develop up to puberty or the earlier years of adolescence and then dissolution begins. In mild cases dementia is too severe a word, there is only slight feeble mindedness, and the boy who gave promise of being a leader or at least a successful man becomes only fit to take a very subordinate place in the world's army of workers. In another type there is added to the mental defect, or, indeed, overshadows it, gross moral aberration. The child who was average up to puberty begins then to have outbursts of causeless anger, to be cruel, to forget all he ever learned of his duties to others, to chafe and fret under restraint, to lose self control, to be a creature of impulse and passion and a slave of bad habits. He may in power of reasoning be equal or even above the average. Many of the criminal class are of this type. They are rarely recognized as insane in their earlier years, but if they escape being hanged or the diseases which nature uses to kill off the unfit they eventually frequently die in asylums with chronic mania or some secondary dementia.

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* Read at the meeting of the Association of Medical Officers of American Institutions for Idiotic and Feeble-Minded Persons, Vineland, N. J., 1905.

Another type, which has its beginning at puberty or early adolescence, though its full development is not reached till adult life, is the so-called original paranoia. There is no doubt that a clinical picture indistinguishable from original paranoia may appear in people whose childhood and youth showed no signs of mental disease, but frequently it is merely the natural development of a nature that from its conception was twisted, warped and abnormal. The boy normal before puberty then begins to be eccentric. He becomes vain of his ability, thinks he is of more importance than his parents and relatives, and that he is not treated with proper consideration. Sometimes he is a great student of many things, reading much and learning little, though, being plausible, he may deceive others as he deceives himself into believing that there is a great future before him. Egotism grows to such proportions that finally he believes he owes no duty to the world but everyone owes duty to him. All who live with him must give way to him. He must always have his way and for the sake of peace parents and brothers and sisters give it him. He has much religiosity but no religion. He day-dreams much of sexual matters, either with a sickly sentimentality or bestiality, or he may mix the two. He may have ideas of great inventions that never work. Soon or late he turns against the world that will not bother itself about him and being sure of his real greatness explains it by the delusion that people are persecuting him therefore. He thinks he must be great or people would not abuse him. They are envious of him. In paranoia egotism reaches its maximum. It may be acquired but more often is congenital. Paranoiacs are as a rule like poets, born, not made.

In the above described types only the prodromal symptoms, if one may call them so, appear at puberty, the disease not reaching its height until adult life. Acute insanity also occurs at puberty and, though rare, is sufficiently frequent to be of interest. It may arise without any discoverable external cause, or may follow an acute infectious fever (especially typhoid), fright or excessive masturbation. The last, however, is often a sign of degeneration rather than a cause of insanity. The following is a typical case of acute mania, the exciting cause of which I could not discover:

Case 1.—The patient was a boy 13 years old. His mother stated that he had always been healthy. He was a cash boy in one of the large stores and had worked hard. He was a reader of dime novels and a cigarette smoker, but had shown no sign of sexual feeling. He was brought to the Philadelphia Hospital in March, 1903. One week before admission he suddenly became violent. It was stated that previously he had shown no evidence of ill health, but his people are not intelligent and certainly are unobservant, and it is very possible that prodromal symptoms were overlooked. However that may be, he became suddenly violent, cursed and swore, complained of pain in the head, slept little and raved all the time. When I examined him I found a thin, pale-faced, frightened-looking boy with widely dilated pupils, dry skin, without fever, and with a strong pulse. The knee-jerks were large. He was very dramatic, gesticulating and pointing with his fingers. He talked unceasingly of Indians, burglars and murderers. He paid only momentary attention to questions asked him, sometimes beginning an answer but soon wandering off; more frequently he kept up his raving. He lived in his own world, and his train of thought was not influenced in any way by the things going on around him. He did not, as is usual, take up words or sounds or sights as a basis for his train of thought. He would eat food set before him, talking all the time, but never asked for it. At first he slept very badly, but later fairly well. He paid no attention to his bladder and bowels. His emotional state varied between elation and fright, but there was never mere depression. After a few weeks he began to improve. He would answer short questions, talked less and less about the Indians, burglars and murderers. He saw and paid more attention to what was going on around him. He did not pass through a stage of depression, but went directly but slowly from the period of excitement to that of normal life. In about three months he regained health.

Case 2.—Another boy, also 13 years old, is probably best classified as a case of acute confusional insanity. He had arrived in this country from Russia only a short time before his admission to the hospital, having made the journey alone. Whether his illness was the result of homesickness and fright at being alone so long or whether there was some mycotic infection is impossible to determine. We obtained only a meager history of the onset of his illness. It appears that on his arrival in Philadelphia from New York he appeared frightened and excited. He understood little that was said to him and talked incoherently. At times he would sing. He was somewhat violent at times, but could always be controlled. He would not eat. On admission to the detention ward he was highly excited, continually shouting, singing, whistling. By the time he was transferred to the insane department, a week later, he had become much quieter. Apparently there had been some slight improvement in his mental condition. Though excited and at times noisy, and though he had still to be fed with a stomach tube, his attention could be held long enough for him to answer a question. He remembered that he had been seasick on the journey across the ocean, but did not remember being in his uncle's house. He did not remember being brought to the hospital. Indeed, his mind was entirely blank concerning everything from the time of his arrival in New York until he found himself in the hospital a couple of days before the examination. (His relatives stated positively that he seemed entirely well on his arrival at New York, so it would seem that his illness obliterated all memory or at least power of recollection of events that had happened during some days previous to the onset of his illness.) It must not be thought that he made the statements above given consecutively and quietly in answer to questions. On the contrary, he was very confused and excited during the whole time, and only now and then could hold himself in enough to talk coherently for a minute or two. He improved a little for several days and began to sleep well, though he still had to be fed. Very soon, however, he became excited again, and later stuporous and very weak so that he could not stand. Finally, four weeks after the onset of his illness and while still stuporous, he had a violent nose-bleed and died in a few minutes. For several days before death his gums were slightly swollen and oozed a little blood. His urine was free from albumin, sugar or casts. It was acid and of a high specific gravity (1034). A blood examination a week before death revealed 5,270,000 erythrocytes, 14,000 leucocytes and 72 per cent. hemoglobin. At necropsy the brain was much congested throughout. There was marked congestion of the trachea and bronchi. The lungs were congested and in places carnified. There were some old slight pleuritic adhesions. The stomach contained about six ounces of milk and eggs, but no blood. There were a few pinhead-sized submucous gastric hemorrhages. The thyroid gland, kidneys and intestines were normal. I confess I am entirely ignorant of the exciting cause of his illness. Whether it was the mental shock resulting from a young boy traveling several thousand miles and suffering a large part of the time from seasickness or whether what he called seasickness may have been some acute infectious fever is, of course, indeterminable. The pathologic condition found in his lungs arose, I am sure, after the onset of his mental symptoms.

The influence of mental shock in causing insanity in children is shown by the following case:

Case 3.—The patient was a schoolgirl 14 years old. She had always been a nervous, delicate child, but was bright, active and full of energy. One day she was almost run over by a carriage. She was not injured physically, but was much frightened. She ran home and fell in collapse in the hall. She was kept in bed two weeks, during which time she was in a state of constant terror. She then improved a little and was allowed to get out of bed, but when I saw her, about five months later, she was still ill. She was afraid to be left alone or in the dark. She had frequent attacks of weeping and was greatly depressed, sitting for hours saying nothing and answering questions only in monosyllables. Whereas previously she had been fond of reading she now cared nothing for books and could not be taught anything. She never played and never smiled. Her expression was vacant. She knew perfectly well where she was and who she was, had no delusions or hallucinations and answered questions intelligently, but she was listless and inert and took no interest in anything. Her memory for recent and remote events was good. Her appetite was poor, her sleep troubled. Physically she was pale and thin, with cold bluish-red hands and dilated pupils. The deep reflexes were exaggerated. I advised that she should be sent to the country, fed on milk, eggs and vegetables, made to take outdoor exercise and given long hours of rest. What the result was I do not know, because she dropped out of my sight.

The acute infectious fevers, chorea and acute articular rheumatism are responsible for a large number of the cases of mental disease occurring during childhood, puberty, and adolescence. Whether mycotic infection or the exhaustion consequent to disease is the direct cause is still undetermined. Probably both act. Certainly the mental symptoms that occur early in the course of fever are directly caused, sometimes by the fever itself, sometimes by bacterial poisoning. In the later cases beginning during convalescence mere exhaustion and malnutrition of the brain is a sufficient cause. Post-febrile insanity is so infrequent that it is impossible to state with any certainty which one of the infectious fevers is most liable to be followed by it. Scarlet fever, measles, and typhoid fever seem to be the most important. In typhoid fever delirium is really a symptom of the disease. Almost no case of any severity escapes it. The more dangerous cases are those in which insanity begins during convalescence. Sometimes the only symptoms are permanent weakmindedness or marked imbecility. The amount of mental defect left varies greatly. There may be only slight obtunding of the faculties, a boy previously bright becoming dull and ordinary, or imbecility may be so great as to need permanent institutional treatment. On the other hand the patient may pass through an attack of mania, melancholia or stuporous insanity and recover or be left with more or less dementia.

Since Kraepelin's extensive and exhaustive studies, much has been written on the subject of dementia precox. It has become a very inclusive title, taking in almost all types of insanity occurring during puberty and adolescence and not a little of the insanity of adult life. It surely is not a distinct and definite disease as are paresis and typhoid fever, but serves a purpose in grouping together certain cases more or less similar in clinical aspect. The following case may be classed here as conveniently as under any of the heads under which insanity accompanied by stupor has been put.

Case 4.—The patient is a white, native American boy, 14 years old, who was admitted to the Philadelphia Hospital in September, 1904. His mother stated that in July she noticed that he was acting strangely. He would take off his clothes and wander about the house. He slept badly and passed a large part of the night walking aimlessly up and down stairs. Soon he became taciturn and ate but little. A few days before admission to the hospital he became excited, accused his mother of poisoning him and refused to eat. When he was brought to the hospital he was well nourished. He talked little, saying he was sick and had had pains all over his body for about a week. He said nothing about having been poisoned. He was stubborn and rarely answered a question. He would take food, but never asked for it. He lay quietly in bed most of the time, but sometimes wept and whimpered, for which he gave no explanation. His pupils were widely dilated. The knee-jerks were absent. The eye grounds were normal. In November he suddenly beame stuporous. He lay perfectly quiet, paying no attention to anything, passed urine and feces in bed, made no attempt to swallow food put to his mouth, and showed no sign of sensibility except that if a leg or arm were sharply pinched he would withdraw it. He obeyed no commands, however simple. Talking to him caused, as I have frequently seen in other patients, great dilatation of the pupils. The knee and Achilles jerks were absent. The plantar jerk was normal and the abdominal reflexes present. There was no rigidity of the spine, but any attempt to open his mouth to feed him caused him to hold it tightly shut. Sometimes he was cataleptic in slight degree, but most of the time a leg or arm raised in the air fell so soon as support was removed. He rapidly lost flesh and color and became much emaciated. His hands became clammy and blue. He remained in this condition of apparent stupor until January 3, when for the first time he began to chew food put in his mouth. January 28 he began to talk, saying he was hungry, and asked for milk and a banana. Next day when another boy patient asked him how he was he swore roundly. As yet he would not answer a question or obey a command. Almost a week before beginning to speak his hands resumed their natural color and he put on a little flesh. By March 12 he began to talk more, would feed himself, would obey commands and answer questions and ten days later he was perfectly conscious, was interested in things around him, talked like a normal boy and ate well. He had gained much weight and color, but was so weak that he could not stand alone. He remembered and related to us many things that happened in the ward during his apparent stupor. When asked why he had refused to talk for so long he said he didn't know. He guessed it hurt him. He rapidly improved in strength and to-day (April 22) is a fair example of the average street boy—bright, tricky, and with none too much moral sense.

The most interesting symptom in this case was the stupor lasting about three months. Stupor is an inappropriate name for the condition, but its use has become so universal that it probably would now be impossible to displace it. Stupor should mean a condition of stupidity with great but not complete obscuration of consciousness. This boy's condition was not loss of consciousness, but absence of evidence of its presence. As a matter of fact, he was conscious all the time, as is proved by the fact that he had a clear remembrance of what occurred while he was apparently unconscious. His condition was probably caused by aboulia, a paralysis of the will, an inability to will to do anything. In some patients refusal to talk, to eat and to obey commands is surely dependent on a delusion that they can not or must not eat. Sometimes, indeed, after recovery patients will so explain the condition, but a patient's reason for his previous conduct is not always to be accepted as accurate. As a rule the apparent stupor passes off suddenly after sleep, but in this boy the return of normal mental function was slow, and occupied many days. Sometimes the condition lasts many months as in a young man at the Philadelphia General Hospital, who has been in apparent stupor for two years. Sometimes also there may be long periods of stupor alternating with periods of more or less normal consciousness.

When cases of general paralysis were first reported as beginning at puberty and adolescence much skepticism was expressed as to their genuineness. To-day, however, it seems proved that though very rare, paresis may occur at an early period in a child whose parents are syphilitic. The influence of other chronic organic brain diseases in causing insanity in children and youths has been studied but little.

CASE 5.—One patient I have seen could be classed roughly as an imbecile but I believe his illness has been caused by some slowly oncoming organic brain disease. He is now 16 years old and his present illness dates from his twelfth year. He was healthy at birth. He was breast fed for eleven months. He began to walk and to talk at the proper time and developed normally until the twelfth year. Then he began to suffer from headache. He was taken from school a year later on account of his health. He began to fail mentally and several years later it was noticed that he was awkward in the right leg in walking. He continued to complain of headache, became mentally weaker and hard to manage. When I examined him he showed some spastic palsy of the right leg with flat foot, abortive ankle clonus on the right side, and increased knee jerks on both sides. He had no other sign of physical disease except some slight post-nasal adenoids which were later removed without influencing his mental state. The eye grounds and visual fields were normal and permit me to say, for the sake of those who believe refractive or ocular muscular disturbances cause all ills, that two excellent oculists could find no excuse for treating him. He was rather short for his age but of good weight and color. Mentally he was very deficient. He could scarcely read. He showed no evidence of sexual feeling. He had no boy friends, indeed scarcely any acquaintances, because he always quarreled with them. He had frequent attacks of anger but was never sullen. His memory for remote events was good but for recent occurrences very poor. Some things he had done two days before he had no remembrance of. He was never cruel. He was clean in his person but careless in dress. He was entirely self-centered and showed no affection for his parents. He was physically lazy and took no interest in outdoor sports. In short he is to-day rather a high grade imbecile but I think the cause is some unusual and obscure form of organic brain disease. The whole course of his case has been slow and did not result from any acute infectious fever or indeed acute disease of any kind. There is no history of parental syphilis and he does not show any physical sign of it and bore anti-specific treatment only well enough to make that test of no value.

There is not time to discuss the occurrence of acute insanity in imbeciles. It is not infrequent and may come on at any age, but most usually at puberty or during adolescence. One of the most important of the mental diseases is hysteria. It is customary to arbitrarily separate it from insanity or to speak of hysteria and hysterical insanity as if they were two distinct things. As a matter of fact hysteria is a disease of the organ of mind quite as much as mania. In children it usually manifests itself by convulsions or by those curious affections of the larger joints. In my own experience I have more than once found it very difficult to decide in youths whether a given case was one of hysteria or the stuporous insanity of adolescence. In the rare cases of insanity which are seen at the very beginning when the patient will submit to careful ocular examination the character of the fields of vision is of great aid in making a diagnosis. In dementia precox the field of vision is normal or else almost normal at the beginning of the examination and rapidly grows smaller as the examination continues. There is never complete reversal of the color field and tubular vision is never present. In hysteria contraction of the fields, if present at all, shows itself at the beginning of the examination and, of course, reversal of the fields is common and tubular vision not very rare. Hysteria is not followed by dementia and, indeed, we may say that in youths the attack is practically always recovered from. The importance of hysteria at puberty is that it is a sign of danger to come later in life.

The proper treatment of insanity at puberty is prevention, in other words, education. When we pay more attention to teaching self-control and clean morals, when those whom Nature intended to lead a quiet life do not try to lead the strenuous life, and when parents get wisdom insanity will greatly decrease. But these things are in the very distant future.

LIPOMA OF THE PRETIBIAL TRIANGLE OF THE KNEE.*

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Behind the patellar ligament is a triangular space formed by the capsule and the tibia. The tubercle of the tibia, to which the patellar ligament is attached, is situated about an inch below the joint-surface and half an inch in front of it, since the tibia slants backward from the tubercle to the joint. The capsule runs upward and forward from the upper border of the tibia, and is inserted into the lower edge of the patella. The patellar ligament is thus entirely outside of the joint, and so is the triangular space, the lateral boundaries of which are formed by the strong expansions of the fascia lata, called the lateral ligaments of the patella. This rough triangle is loosely filled with fat, which gives the capsule room enough to fold up during extension of the leg and allows it to conform to the condyles of the femur during flexion.

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* Read before Chicago Medical Society, 1905.

When it is not abnormally enlarged, this pad of fat can hardly be felt, and there is usually a slight hollow on both sides of the patellar ligament. After an injury, however, such as a bruise or strain, there may be a marked increase in the size of the fatty mass, possibly by the organizing of a blood-clot, or perhaps by a direct growth of the fat-tissue itself from the stimulus of the traumatism. This hypertrophy may not disappear, and may even increase gradually until flexion and extension of the leg are materially limited by the mechanical interference of this dense wedge of tissue. If the leg be forcibly flexed, the patellar tendon and its lateral ligaments or expansions are made tense and the pad of fat is compressed against the tibia and the condyles and forced out on both sides of the tendon, bulging outward under the more yielding lateral ligaments until the limit of compression is reached. If the leg be extended the notch between femur and tibia is narrowed and the pad is again compressed, though not so much as in flexion.

These motions, when carried beyond the self-established limits, are painful, and there is at all times a sense of unpleasant tension over the front of the joint. The interference with flexion is so marked in many cases as to cause serious disability. When the patient seeks advice he is apt to be treated for tuberculosis of the knee joint, the chronic swelling and the limitation of motion being responsible for the mistake. A careful examination will show that the limitation of extension is due, not to spasm of the hamstring muscles, as it invariably is in tubercular disease, but to a mechanical impediment, the hamstrings remaining relaxed.

An intracapsular effusion, such as is found in chronic synovitis, will be discovered above the patellar border, while the lipomatous pad never reaches above the level of the middle of the patella and there is present neither fluctuation nor floating of the patella.

A villous proliferation of the lower border of the capsule could be differentiated by the extent and peculiar feel of the villi.

A chronic bursitis of the small bursa lying under the insertion of the patellar ligament offers the greatest difficulty in differentiation unless fluctuation can plainly be elicited.

This lipomatous condition is much more common than is generally believed. The patients are mostly young and active men, who pay little attention to the slowly-progressing affection until it becomes a serious handicap to their working ability, and this usually takes five or six years.

As all of my cases preferred operation to more time-consuming methods, I have had no experience with the treatment by adhesive plaster strapping, or by the injection of such drugs as iodin or alcohol, which at best are uncertain.

The radical operation is safe and simple. A small incision two inches long is made just to the outer side of the patellar ligament. This is carried down through the strong fascia lata expansion, the so-called lateral patellar ligament, and the fatty mass is seen bulging up into the wound. This fat is seized with strong artery forceps and twisted out bit by bit, the twisting being far better than excision, because it prevents an annoying hemorrhage. The finger and forceps can readily be passed under the ligament to the inner extremity of the triangle, and no incision need be made on the inner side of the tendon. The reason for making the original and only incision on the outer side of the tendon is that if the lateral fascial ligament should fail to unite, there would be no tendency to the condition known as "slipping patella," which practically always occurs outward. After all the fat has been removed from the triangle, and all bleeding arrested, the fascia is carefully sutured with chromicized catgut in a separate layer, and the skin sewed with a subcuticular stitch of silkworm gut or wire. No drainage should be used. A sterile gauze dressing is applied and covered with a thick pad of non-absorbent cotton. A long posterior splint is bandaged on firmly, and the springy cotton makes sufficient pressure to prevent the oozing of blood into the triangle. The patient can be allowed to walk in a day or two, but the knee should be held stiff by the splint for ten days to allow the fascia to unite firmly. At the end of that time the splint is removed and the skin suture pulled out, and the leg can then be used freely.

The results in all my cases have been perfectly satisfactory, and the full normal range of motion has been possible as soon as the dressings were left off, even in the cases where great limitation had been formerly present. There has been no pain after the operation. If, through some misfortune, infection should occur, it would be entirely outside of the joint and could not endanger the mobility of the knee. I have not as yet attempted the operation under local anesthesia, fearing that the avulsion of the fat would cause too much pain.

100 State Street.

Special Article

IMMUNITY.

CHAPTER XVIII.

PRINCIPLES OF SERUM THERAPY.

In the strict sense serum therapy means the injection of antitoxic or antibacterial serums for curative or prophylactic purposes; this is passive immunization or direct serum therapy. Active immunization, in which the tissues of the individual are induced to form antitoxins or antibacterial substances as a result of vaccination or protective inoculations, may be considered as indirect serum therapy. We may, therefore, include the latter as one of the serotherapeutic measures.

Bearing in mind the significance of the terms active and passive immunization, and the fact that they may be used for curative and prophylactic purposes, the various procedures may be classified as follows:

I. PROPHYLACTIC INJECTIONS.

A. Active immunization, in which vaccination and protective inoculations are included, as with the organisms of typhoid, cholera and plague. Depending on the material injected, the result is the formation of antitoxins or antimicrobic substances (amboceptors); agglutinins are formed incidentally.

1. Inoculation of virulent organisms; antibacterial substances are formed. (*a*) Inoculation with small amounts of a virulent organism, i e., of a non-fatal dose; used principally in experimental work. (*b*) Inoculation with virulent organisms into a tissue which has some natural resistance. The success of vaccination against smallpox by using virus obtained directly from the diseased, a method which was practiced in earlier times, was probably due to the fact that the virus found unfavorable conditions for the development of virulence in the skin. In some instances vaccination is more successfully accomplished by direct inoculation of virulent organisms into the blood stream (Kitt's method of vaccination against symptomatic anthrax).

2. Injection of attenuated infecting agents: Attenuation by air and light (chicken-cholera, Pasteur); by cultivation of the microbe at high temperatures (anthrax, Pasteur); by

chemical agents (anthrax, Roux; diphtheria and tetanus toxins, Behring and Roux); by desiccation (rabies, Pasteur); by passing the virus through other animals (swine erysipelas, Pasteur). This last observation was a most instructive one; passing the bacillus through the rabbit several times increased its virulence for the rabbit but decreased it for swine, while passing the organism through the dove increased its virulence for swine.

3. Injection of killed organisms (anthrax, Toussaint; swine plague, Salmon and Smith). This method is of the utmost importance in human diseases, as it is the safest means of vaccinating against cholera, typhoid and plague. In the Pasteur treatment of hydrophobia the first injection of the dried spinal cord probably contains the killed virus.

4. Injection of bacterial products. (*a*) Bacterial cell plasm (Buchner's plasmin, obtained by submitting the organisms to high pressure, and Koch's tuberculin TR). (*b*) Soluble bacterial products (the bacterial proteins, as Koch's old tuberculin and mallein; the soluble toxins; products of bacterial autolysis). When toxins are injected antitoxins are formed. The autolytic products of some organisms, e. g., typhoid and dysentery, cause the formation of bactericidal amboceptors and agglutinins, but not antitoxins.

B. Passive immunization: the prophylactic injection of antibacterial and antitoxic serums.

C. Mixed active and passive immunization; the simultaneous injection of an immune serum with the corresponding organism which may be killed or living. The serum increases the resistance of the animal at once and, in the meantime, a new and more permanent resistance develops which is due to the formation of antibodies. This method has been practiced with swine plague, swine erysipelas, rinderpest, and experimentally in typhoid, cholera and plague.

II. CURATIVE INJECTIONS.

A. Active immunization.

1. Injection of killed micro-organisms in small doses with the intention of hastening antibody formation (Fraenkel in typhoid fever); value not yet demonstrated.

B. Passive immunization.

1. With antitoxic serums: diphtheria, tetanus, snake bites, plague, tuberculosis (?), typhoid (?), streptococcus infections (?), etc.

2. With antibacterial serums: typhoid, cholera, plague, dysentery, streptococcus (?), staphylococcus (?) and pneumococcus (?) infections.

General Strength of Serums.

In general, serums to be effective must have a certain strength. When diphtheria antitoxin was first used preparations were put on the market which contained twenty or fewer antitoxin units per cubic centimeter, rendering necessary the injection of 150 c.c. or more in order to introduce 3,000 units. Much of the criticism which was offered at first was not because antitoxin injured the patients, but because it caused no improvement, the explanation of which lies in the low value of the serums used at that time. If diphtheria antitoxin now contains less than 250 units per c.c. it is considered unfit for use; many serums contain 500 or more units per c.c.

Antitoxic and other serums should, of course, be free from micro-organisms and toxins. The cases of tetanus which developed in St. Louis following the injection of diphtheria antitoxin will be remembered. With correct governmental supervision of the manufacture of serums such accidents are entirely preventable.[1]

For the sake of simplicity we may consider the principles involved in serum therapy under the three topics of antitoxins, bactericidal or antibacterial serums and vaccination.

Antitoxins.

It has been sufficiently emphasized that neutralization of toxin by antitoxin implies a chemical union between the two substances. When the two are mixed outside the body at a given temperature and at a given concentration, the rapidity and completeness with which the union occurs depends only on the degree of affinity which one has for the other. There is no third substance with which one or the other may unite. In the body, however, the conditions are more complex; in this case two combinations are possible for the toxin, one with the antitoxin which has been introduced and a second with the tissue cells. As an instance of the great rapidity with which toxin may unite with cells, the work of Heymans with tetanus toxin may be cited. "Heymans found that, if all the blood were removed from an animal a few minutes after the injection of a single fatal dose of tetanus toxin and the blood of another animal substituted, still the animal died of tetanus" (Ritchie); that is to say, all the toxin had been bound by the cells in that brief time.

Experiments with Antitoxins.

Other experiments show that quantities of toxin and antitoxin which are neutral when mixed before injection are not entirely neutral if injected separately and at different points of the body. In this instance some of the toxin has had time to unite with tissue cells before it could come in contact with the antitoxin.

Certain work by Dönitz illustrates not only the rapidity with which toxin may be bound by the tissue, but also the method by which antitoxin effects a cure. In relation to tetanus he found that if the toxin were injected first and the antitoxin four minutes later, a slight excess of antitoxin was required to prevent the development of tetanic symptoms; if he waited eight minutes, six times as much antitoxin; after sixteen minutes, twelve times as much; after one hour, twenty-four times the simple neutralizing dose was required. A few hours later no amount of antitoxin could save the animal. Similar conditions were met in the neutralization of diphtheria toxin by its antitoxin in the body. Madsen, in performing what he called "Curative Experiments in the Reagent Glass," found that the longer tetanolysin had been in contact with erythrocytes, the more antitetanolysin was required to tear away the toxin from the corpuscles. Practical experience with diphtheria also indicates that the longer the disease lasts the more antitoxin is required for cure.

The experiments just cited give us a clear conception as to what is meant by the curative action of an antitoxin—an action which consists not of the neutralization of the circulating toxin, but of the wresting away from the tissue of the toxin which has been bound. Incidentally the circulating toxin is neutralized, which is essentially a prophylactic process. For the wresting away of not a mere equivalent amount of antitoxin, but a great excess, is required, a condition which some have compared to the mass action of chemical substances.

Antitoxin and Toxin.

When diphtheria or tetanus has advanced so far that no amount of antitoxin will effect a cure, the relation of the toxin to the cells has become something more than mere chemical union. Further processes of a biologic or biochemic nature have set in in which the toxin may have become an integral part of the protoplasm, and the toxophorous group may have begun its destructive action whatever the nature of this action may be.

It is important to recognize that antitoxin can not repair an injury already done by the toxin. The repair of the injury depends on the recuperative power of the cells, hence antitoxin cures by tearing from the cells, perhaps not all, but so much of the toxin that less than a fatal dose remains in the cell.

We may learn from the experiments of Dönitz and of Madsen two important principles of antitoxic therapy: First, that of early administration, i. e., before a fatal amount of toxin has been bound, and second, the necessity of injecting a sufficiently large amount of antitoxin.

The comparative study of diphtheria and tetanus has clarified the principles of antitoxic therapy to no small degree. Knowing that diphtheria antitoxin has a much greater curative value than tetanus antitoxin, we find some conditions which would seem to explain the difference, at least in part.

In regard to tetanus we have the following facts: In the test-glass the affinity between the toxin and antitoxin is

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[1] See appendix to this chapter.

Tetanus.

rather weak; since approximately forty minutes are required for complete neutralization (Ehrlich). On the other hand, the experiments of Dönitz and of Heymans show that the affinity of the toxin for nervous tissue is exceedingly strong, all the toxin being taken up within a few minutes. These two conditions alone suggest the probability of a low curative value on the part of the serum. The toxin of tetanus also has a remarkable selective action on the most vital of all organs, the central nervous system, hence a lower grade of injury may prove fatal than in other infections in which less important organs or those of greater recuperative power are involved chiefly. Furthermore, it is thought by some investigators (Meyer and Ransom, Marie and Morax) that tetanus toxin is taken up by the nerve endings and reaches the ganglionic cells by way of the axis cylinders. In this instance the toxin, to a certain extent, is isolated and perhaps less accessible to the action of antitoxin.

Diphtheria.

Concerning diphtheria, the affinity between toxin and antitoxin is relatively strong, for complete neutralization in the test-glass takes place in about fifteen minutes (Ehrlich). Clinical experience indicates that the affinity of diphtheria toxin for tissue cells is less than that of tetanus toxin, for diphtheria may readily be cured on the second or third day of the disease, whereas a cure of tetanus is rarely effected. These would seem to be favorable conditions for successful serum therapy. Although the toxin of diphtheria may attack the nervous system as indicated by the development of paralyses, yet these are seldom fatal; and on the basis of anatomic findings in fatal cases it seems probable that the greater portion of the toxin is taken up by parenchymatous and lymphatic organs, and by connective tissues, which compared with the nervous tissue are of less immediate importance for life and have greater recuperative powers. We may infer from clinical experience that diphtheria toxin is so situated in the body that it is accessible to the action of the antitoxin.

Conditions of Importance for Success.

We have, therefore, the following conditions which apparently are of importance for the success of antitoxic therapy: 1. The concentration (strength) of the antitoxin which is injected; 2, its freedom from contamination and adventitious toxins; 3, the time of its administration; 4, the quantity injected; 5, the degree of affinity between toxin and antitoxin; 6, the degree of affinity between toxin and tissue cells; 7, the amount of toxin which may be bound without a fatal issue, of which the vital importance of the organs involved and their recuperative powers are factors; 8, the location of the toxin in the body, i. e., its accessibility for the antitoxin.

Prophylactic Action of Antitoxin.

What has been said relates to the curative action of antitoxin. It is evident that the action of antitoxin, when used as a prophylactic, is of a simpler nature, for in this instance the conditions approximate those of the test-tube experiment. There has been opportunity for the antitoxin to become uniformly distributed in the blood and lymphatic circulations, hence it is able to meet and to bind the toxin before the latter comes in contact with the receptors of important cells. The high value of tetanus antitoxin as a prophylactic, a value which has become evident in recent years, probably depends on this condition.

The immunity which is afforded by a prophylactic injection of antitoxin is of short duration, from two to three weeks; the antitoxin is excreted in the urine to a considerable extent, but may also be bound and assimilated by the tissues in part.

(*To be concluded.*)

Chinese Camphor Trade.—It is only in recent years that the Chinese have made an attempt to cultivate the camphor trees which abound in some provinces. *The Pharmaceutical Era* states that camphor first appeared as an export in the customs receipts in 1902 and that since then, and especially in the last year, there has been a considerable increase in trade.

Clinical Reports

THREE CASES OF TETANUS SUCCESSFULLY TREATED.

CARLOS C. BOOTH, M.D.
YOUNGSTOWN, OHIO.

A CASE OF TETANUS FOLLOWING ABDOMINAL SECTION. RECOVERY.

CASE 1.—A young man, aged 22, was referred to me by Dr. F. S. Merwin of this city, and I operated on him for tubercular peritonitis, complete recovery following. The case progressed in the usual manner, excepting that the patient had a slight rise of temperature. On the tenth day we opened the dressing and discovered a small stitch abscess, which was treated and dressed daily. On the twelfth day he began having slight twitchings of his muscles, and complained of difficulty in opening his mouth, which symptoms gradually increased until the tetanic convulsions became general and of the most violent character. On the seventeenth day, or the fifth day of the illness, we began using antitetanic serum three times daily. The spasm continued to be severe for a few days, and then became less frequent and less severe. After seventeen doses of 10 cm. each were given, his spasms ceased and complete recovery followed.

TETANUS FOLLOWING GUNSHOT WOUND. RECOVERY.

The following case was reported to the Mahoning Medical Society by Dr. Justice:

CASE 2.—Clayton M., 11 years old, shot himself with a toy pistol on July 4, 1904, in the center of the right palm. July 6 he was taken to Poland to the family physician, Dr. C. R. Justice, who removed the wad from the wound and disinfected it with peroxid of hydrogen, leaving instructions to let him know if the wound did not heal kindly. July 16 the boy was taken to the physician's office for the second dressing, when the wound was found inflamed and the boy very nervous and unsteady in his walk. Dr. Justice cauterized the wound with carbolic acid, and the patient went home. Dr. Justice was called to see him next morning at his home in Youngstown. I was called in consultation. I found that, to all appearances, the wound was partially healed. The masseter muscles were so rigid that the boy was not able to open his mouth widely. There was opisthotonos. He was lying on the bed and was very nervous, but had had no spasms. We had him sit in a chair where I could secure a better view of the wound. With firm pressure, I succeeded in squeezing a little secretion out of the wound. At this moment he had his first tetanic convulsion, which was a very severe one. We gave him chloroform and I incised the wound, which I found extensive beneath the surface and filled with gelatinous material, which I curetted out and thoroughly cauterized the cavity with pure carbolic acid. After the usual surgical dressing we put him to bed and he continued to have regular convulsions. Dr. Justice gave him, at this time, one-half ounce of antitetanic serum, and continued to do so every eight hours for three days. Owing to the distance of his residence from that of the patient, he doubled the dose, giving an ounce at a time twice a day for three days, the nurse at this time being afraid to use it. After this the nurse began to use it, and it was continued for five days, night and morning. The spasms occurred regularly for five days, he was free from them for one day, and then had one general but slight spasm, which was the last. The antitoxin was continued for a few days, using in all 54 half-ounce doses, and although so many doses were given in such large quantities in such a short space of time, only one small abscess formed from the injections. The masseter muscles were the first to become involved and the last to recover. Chloroform was used to relax the spasms when they were severe. To facilitate giving him nourishment, the patient was allowed to inhale a sufficient amount of chloroform to relax the muscles of the jaw. The patient is now in good health.

TETANUS FOLLOWING AMPUTATION OF THE THIGH. RECOVERY.

CASE 3.—Mr. A. B., aged 48, was brought into the hospital Nov. 17, 1905, with a badly lacerated thigh, having been run over by a street car. The extremity was crushed at the junction of the middle and lower third. He had lost so much blood, and was so nearly exsanguinated that it was unwise to amputate at this time; therefore I thoroughly cleaned the wound, severed the crushed member, which was attached by skin only, tied up the stump with a wet antiseptic dressing, gave him an intravenous saline infusion, placed him in bed and waited for him to get into a condition for an amputation, which required two days and two more saline infusions. On the 21st I made a rapid amputation at the junction of the middle and lower third of the thigh. I found at the first dressing that one of the flaps had sloughed slightly, for some reason unknown to me; this caused a small suppurating surface. November 30 he complained of stiffness of the jaws, which continued for two days, when I gave him antitetanic serum subcutaneously three times a day. This did not cause any improvement, and on the fourth day, his back becoming rigid, the house surgeon, Dr. McCurdy, gave him an intraspinal injection of the serum. This caused some improvement which lasted for two days when I gave him another intraspinal injection, and repeated the same the third day. His condition being improved, although he had some little stiffness of the jaws remaining, he received no more serum, and made a gradual and complete recovery.

DISLOCATED THYROID CARTILAGE OF THE LARYNX.

FRANK W. SMITHIES, M.D.

CHICAGO.

Inasmuch as dislocations in this region are of such infrequent occurrence, the symptoms are so varied and the treatment so arbitrary, the report of this case should prove of interest and value.

History.—Patient, a male, aged 20, of slender but muscular build, an athlete, at the time of receiving this injury, was half-back on a local football team. He had previously been in good health, and had suffered no injury to the larynx or in the neck. While "bucking" the opponents' line, he was hit or kicked in the front of his neck. The blow rendered him unconscious for some minutes. On recovering his senses, he complained of much distress in his stomach, but did not vomit. He had a choking sensation in his throat, breathed with great difficulty, and could talk only in hoarse, low tones. He was unable to take further part in the game then in progress, but lay around for more than an hour, thinking that his condition would gradually improve. At the end of that time, as he became no better, I was called.

Examination.—The patient's face was flushed, pupils dilated, temperature 102, breathing stridant, respiration from 26 to 32 a minute. Speaking was very difficult, as the pain was very great on attempting conversation. The voice was a hoarse whisper. Anteriorly, the neck showed a noticeable flatness in the median line. Laterally, anterior to each sternomastoid muscle, was a prominence, that on the right side being more marked and somewhat lower than that on the left. The prominences moved when the patient swallowed, and their motion caused considerable pain. There was considerable swelling of the tissues in the region anterior to the sternomastoid muscle. The skin over the region of the larynx was not broken, nor did it show any marks of violence. The patient gave no history of raising blood, although he had coughed repeatedly since the accident. On palpation, there was great tenderness throughout the region of the larynx, especially when the lateral prominences were felt. It was apparent that the thyroid cartilage had been "sprung," as it were, from its seat on the cricoid. At the same time, there had been rotation in a vertical direction. The cartilage in question lay partially flattened out, anteroposteriorly, the prominences seen laterally proving to be the alæ of the cartilage. The vertical rotation had been from left to right, superiorly, causing the right ala to rest at a lower level than the left. The cartilage, as a whole, was capable of being moved considerably, but even the slightest motion caused the patient the most excruciating pain. On swallowing, the excursion of the cartilage, vertically, was less than normally. No crepitus could be detected along the anterior angle of the cartilage, nor did the two alæ move independently. The inferior border of the thyroid cartilage was about a sixth of an inch below its normal resting place on the cricoid. The latter cartilage did not appear to have been injured in any way. The fact that the patient was rather slender greatly facilitated the examination. The pulse was rapid, but strong and regular.

Laryngoscopic examination was very unsatisfactory, inasmuch as the patient could not bear to have the mouth open for any length of time. Coughing also interfered with the examination. It could be seen, however, that the epiglottis was normal and that the vocal cords were moving faultily, since the image on the throat mirror was very uncharacteristic.

Treatment.—This was mainly by position and by digital manipulation. The patient was placed in the supine position, with a pad beneath his head, in order to relax the muscles attached to the thyroid cartilage. Then, by careful manipulation, the cartilage was elevated to its normal position on the cricoid. At the same time, rotation was made vertically, from right to left, with lateral pressure on the alæ, synchronously, toward the median line, until articulation with the cricoid was felt. The entire region of the larynx having previously been painted with the tincture of iodin to aid in reducing the swelling of the cervical tissues, the position of the alæ was maintained by small pads of cotton held in place by adhesive strips. The position of the thyroid cartilage, as a whole, was then maintained by adhesive strips placed horizontally. The dressing was completed by a pad of cotton and a few turns of a wide roller bandage. The patient was instructed to remain in bed, on his back, to suck ice, to use his voice as little as possible, and he was placed on a liquid diet.

Progress of the Case.—After 24 hours the patient's condition had improved greatly. His fever had abated, his face was not flushed, the pupils were normal and reacted well, the voice was less hoarse. There was considerable pain on swallowing and on pressure over the alæ, externally. Examination showed that the position of the cartilage had been maintained. The nausea had disappeared and the patient was able to take as much nourishment as was allowed him. The swelling of the cervical tissues had decreased considerably. The treatment described was persisted in, frequent examinations being made to see if the reduction had been maintained. Within a week the swelling of the tissues had disappeared and the pain on swallowing had decreased markedly. The voice was still hoarse, but much stronger, and speech was not attended with much pain. At the end of three weeks the dressings were removed and the cartilage was found to be very nearly normally situated. There was but slight pain on pressure over the alæ. Vertically there was a slight dropping, but functionally it gave the patient no inconvenience. The patient's voice was still husky, but was gradually improving. At the end of five weeks the patient had practically recovered. It is more than six months since the accident and there has been no recurrence of the condition.

The Postoperative Uratic Sediment in Prognosis.—M. Claret, ex-interne at La Charité, following a suggestion of his chief, Dr. Campenon, has analyzed twenty-five cases of laparotomy, with special reference to the urinary sediments occurring within the first two days. He finds that, with one exception, the cases all followed a general rule, the fatal ones showing no sediment and a hypoleucocytosis, while the others, no matter how severe the infection, showed a sediment and a hyperleucocytosis, least in the milder cases and both greater in the severer ones. In the one exceptional case the patient died on the eighteenth day after complications, the uratic sediment, which was free in the beginning, disappearing very rapidly after the second day. The phosphatic deposits were normal in the fatal cases and only slightly increased in the others. He finds that these agree with experimental facts and deduces the following rule: "The appearance during the first twenty-four to forty-eight hours after laparotomy of an abundant uratic deposit will be a sure sign of favorable prognosis. Its absence should demand all reservations as regards prognosis of recovery."

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THE FREE DISPENSARY.

The proper conduct of the free dispensary has probably been a moot question since free dispensaries began, but the discussion usually turns on the extent to which the privileges of the dispensary are abused by persons able to pay for medical care and the extent to which, as one of our correspondents puts it, "young and struggling physicians are thereby robbed of cases which should properly fall into their hands." While we fully realize the importance of this aspect of the case, there are others of greater importance which are not generally recognized. We refer to the inferior character of medical service given in some dispensaries and the imperfect or defective training which the student receives even in some of the best.

Inquiries addressed to the secretaries of the boards of health of thirteen of our most populous states elicited the fact that in none of them is there state law or city ordinance regulating the dispensary. Hospitals are subjected to more or less regulation—in some cities the ordinances are almost oppressive—but the dispensary escapes all control, save such as is expressed in the general statutes regulating medical and pharmaceutical practice.

The fourteenth state to which our inquiry was sent, New York, has a law, passed in 1899, providing for the licensing by the State Board of Charities of dispensaries "which are supported, in whole or in part, by trust funds, public moneys or sources other than the individuals constituting the dispensaries." The recent report of the New York State Board of Charities on licensing dispensaries is at hand. It states that there were 123 licensed dispensaries in the state of New York Oct. 1, 1903, but makes no statement or estimate as to the number not covered by the provisions of the law. The report indicates an effort to improve the standard of proper administration as regards cleanliness and propriety, and shows that four dispensaries were closed within the year. In general, however, the New York law is directed mainly toward what the report calls "the social view," i. e., toward the prevention of fraud by well-to-do applicants, and scarcely touches what is to us the most important aspect of the case—the necessity for perfecting the medical service. The two objects of a genuine dispensary are the proper care of the sick poor and the practical training of medical students and physicians, and both are absolutely dependent on a high standard of medical supervision and service.

The legitimate clientèle of the free dispensary represents the most ignorant and helpless class of the community. They have no means of judging of the medical attainments of the staff of a dispensary, or even of knowing whether the young man who treats them is actually a physician or not. A large proportion of these people come from countries where public institutions are subjected to careful governmental regulation, and they are, therefore, accustomed to confide implicitly in such institutions. A German immigrant from Heidelberg would naturally visit one of our dispensaries for the first time, at least, with the same confidence with which he would apply to the dispensary of the medical school of the University of Heidelberg, where all is under the strictest governmental control, and the out-service is supervised as carefully by the medical staff of the university as the university hospital itself. Yet the only protection afforded here to the simple foreign peasant is a statute regulation—uninforced by any inspection—which requires that some licensed physician shall be attached in some capacity to the dispensary and that the drugs shall be dispensed by a registered pharmacist, although the requirement for a registered pharmacist is not universal. The laxity of the law encourages the growth of the "pseudo dispensary" whose insolent frauds are only too familiar; but that is a matter which belongs to the domain of criminal law. Our concern is with the functions of the true dispensary. It is needless to say that any dispensary which is worthless to the patient is equally worthless to the student.

Some of the medical school dispensaries are conducted on the most approved lines and offer, doubtless, as valuable training to the student and as reliable care to the patients as any dispensaries in the world. Of such we can only say, may they increase and possess the whole field. On the other hand, there is a large amount of dispensary indoor practice and out-practice to which the same criticism applies which we have previously had occasion to make in these columns on some free hospitals, i. e., it is undirected, superficial and irresponsible.

Undoubtedly patients will crowd to dispensaries, however many are opened, but no physician uses the excuse of a large practice as a reason for slovenly methods, and the dispensary can not defend superficiality by pleading that it has more patients than it can well handle. The interests of the public and of the profession would both be served better by restricting the number of patients to manageable proportions. There is a type of dispensary too common in every great American town which starts with a laudable humanitarian spirit and fair medical standards, but which quickly degenerates, usually from lack of funds and inattentive management. The physicians in charge of the clinics are busy men, with constantly increasing practices. They attend the clinics irregularly, and in their absence students assume charge. The out-practice, at first limited in amount and carefully controlled, increases to unmanageable proportions and falls completely into the hands of the students. In some supposedly respectable dispensaries, illegal young practitioners are not even required to keep records of their cases, but pursue their way without the slightest guidance or control.

Such dispensaries not only tend to bring discredit on the profession; they also fail to give the student the educational training which they profess to afford him, and, last but not least, they fail to give to their clientèle the medical care which they ostensibly offer. It is time that we considered with care some reasonable method of regulating dispensaries.

PERFORATION IN TYPHOID FEVER.

The subject of perforation in typhoid fever is one of perennial interest, and of late years has been much to the fore on account of the renewed interest in its surgical aspects. From time to time analyses of the factors bearing on the subject have been made, and the published results usually show variations, at least in detail. In a disease like typhoid, which varies so much from year to year, it is necessary to analyze large numbers of cases, collated from various sources, in order to obtain an idea of the mean natural history of the disease. It is always of interest, therefore, to study new reports and to compare them with previous ones.

Recently Scott[1] has published some interesting facts bearing on perforation, collected from the records of the Pennsylvania Hospital. A study of his figures shows that this complication is more common than is generally stated to be the case, as at least one death in four is due to it. It seems to be less common in European countries than it is in the United States, Canada, Australia, or England, though why is not apparent. According to the census statistics of 1900, Scott figures that 8,884 deaths from perforation occurred during that year, and that 2,211 of these might have been saved by operation, considering the mortality from this to be 75 per cent. The great majority of perforations occur between the second and the fifth week, and the cases reported as occurring very early are probably perforations during a relapse. In nearly all instances, the perforation occurs in the ileum, though appendiceal perforations are by no means uncommon. Most of them are small, circular, and pin-point in size, and are evidently due to gradual erosion through the base of an ulcer; a few, due to separation of large necrotic patches in the wall of the intestine, are much larger.

The diagnosis of perforations has always been difficult and a question of discussion. The remark made by Osler, several years ago, that the symptoms usually described as those of perforation are, in reality, those of peritonitis has doubtless led to more careful study of the early symptoms in this country. Pain, tenderness, and rigidity are the three important symptoms, though any or all may be present. Pain of some sort is present in about three-quarters of the cases, and sudden severe pain in half of them. Tenderness is present in about the same proportion of cases as pain, and rigidity in almost as many. Some of the signs emphasized in the older writings, as distension and loss of the liver dullness, are shown by Scott's figures to be unreliable, and hemorrhage is not so frequent an accompaniment as is often thought. The recent sign said to be of great importance by Goodall, shivering and chilly sensations, is of little value unless accompanied by corroborative signs. The most important thing to be looked for in the temperature chart is a sudden rise followed by a slow fall, and the temperature changes may not be detected at all with the ordinary three- or four-hour chart. The blood picture, much vaunted four or five years ago, is now stated to be of no great value. There may be an actual fall in the leucocytes, and the general consensus of opinion now is that perforation, like other inflammatory complications of typhoid fever, is apt not to be accompanied by leucocytosis on account of the bone marrow changes which accompany the disease.

On reading Scott's report, one is impressed with the fact that in typhoid perforation, as in all conditions difficult of diagnosis, we must depend on collections of symptoms and signs, and not on isolated ones. Most of us are fond of short cuts to knowledge, and it would, of course, be of great advantage to the patient if there was a pathognomonic symptom or sign for every disease and every complication. We constantly meet those who seem almost to think that this is so, men who will not diagnose a case of typhoid fever because the patient has not a typhoid tongue, and men who call every chill malaria. While the search for pathognomonic signs is a worthy one, we must not forget that there are very few of them yet, and the study of conditions like typhoid perforation should show us the great necessity of learning to put together the separate pieces which constitute the Chinese puzzle of diagnosis.

THE FREQUENCY OF TUBERCULOSIS.

In the last few years, the belief has prevailed that tuberculosis infection is all but universal and that, in civilized countries at least, practically no one escapes "without a smack of consumption." The German saying, *"dass Jeder ein bischen tuberculos sei,"* well expresses the general feeling. The recent strengthening of this more or less widely held popular opinion has been due principally to the work of Naegeli and Franz.

Naegeli[1] in a series of several hundred minute and exhaustive postmortem examinations at the Pathological Institute in Zurich found lesions regarded by him as tuberculosis in over 97 per cent. of the bodies of adults. Subsequently Burkhardt[2] announced very similar results obtained by him from material examined at the Dresden Pathological Institute. The much-quoted work of Franz[3] on the application of the tuberculin test to apparently healthy Austrian soldiers showed that a positive reaction was obtained in over 60 per cent. of the number examined.

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[1] Univ. of Pennsylvania Med. Bull., xviii, No. 3.

[1] Virchow's Arch., 1900, vol. clx, p. 426.
[2] Münch. med. Wochft., 1903, No. 29.

Kraemer[4] has now subjected the work of these authors to a searching and destructive criticism. He points out that the results obtained by Naegeli and Burkhardt are at variance with those reported by other investigators, notably by Orth, whose observations are recent and cover a period where owing to the general interest in the subject and to other causes special attention was presumably given to the occurrence of tuberculous lesions. Orth found evidence of tuberculosis in only from 27 to 28 per cent. of 1,087 autopsies and his results thus contrast markedly with those of Naegeli and Burkhardt. Kraemer cites other data also at variance with the Zurich and Dresden figures, and argues that they should prevent an uncritical acceptance of the universal infection doctrine.

The divergence in the results obtained by skilled and experienced observers is considered by Kraemer to depend partly on the difference in the locality in which the observation was made, partly on the mistake of invariably assigning certain pathologic appearances to a tuberculous origin. In a discussion of the influence of locality on the autopsy statistics, he calls attention to the peculiar character of the material handled by Naegeli, comprising as it did a large proportion of factory workers, especially of those in the textile industries. The relatively high percentage of tuberculosis in the dust-breathing occupations is well known. In the same connection, remark is made of the inevitably selected character of the material coming to inspection in an urban pathologic institute, there being many factors tending to swell unduly the proportion of tuberculous infected persons as compared with the number in the community at large. Kraemer also questions the propriety of identifying on anatomic grounds a certain class of lesions as tuberculous. Here he succeeds at least in making evident the need of fuller data, and in opening the way for a still more exhaustive investigation than that of Naegeli.

A similar analysis of Franz's tuberculin investigation follows. It is stated that in the frequent references to his work (61 per cent. of positive tuberculin reactions among 400 apparently healthy recruits from Bosnia and Herzegovina) the fact is overlooked that the regiment examined was chosen for the specific reason that it had had for several years the largest proportion of tuberculous cases. The assertion is also made that Franz himself had no thought of interpreting his results as a measure of the amount of tuberculosis in the whole community. The shortcomings and sources of error in the tuberculin test are then entered into by Kraemer in some detail, and finally the surprising fact is brought out that in this whole field of investigation there is practically nothing on which to institute a comparison with Franz's work. His inquiry stands alone as the only research of import into the frequency of a positive tuberculin reaction among presumably normal individuals. The superior value of the tuberculin test as a means of shedding light on the question at issue should stimulate further investigation in this direction.

Kraemer concludes that the assumption that every adult harbors in his body an active or a burned out tuberculous focus is not yet warranted by the evidence at our command. Conservatively stated, the question of the frequency with which human beings become infected with tuberculosis is not yet solved, owing partly to the meagerness of the observations hitherto made, partly to their being limited to certain localities.

SIR JOHN SIBBALD.

The recent death of Sir John Sibbald, late member of the Scotch Lunacy Commission, causes profound regret to all who knew him. He was a person of singular worth and singular modesty and we think it fitting to commemorate his services in developing the care of the insane, not alone because they are important and permanent but because his life presents a fine ideal of what a man and a physician ought to be. Sir John Sibbald became superintendent of the Argyle Asylum, and during the seven years he remained there he courageously adopted all the most progressive ideas of the day. He was the first man in Great Britain to tear down the walls of the old prison-like "airing-courts" and to substitute free exercise and employment. His patients became more orderly and less subject to tuberculosis. All the Scottish asylums followed his example in this and other respects and to-day the visitor will probably find the Scottish institutions for the insane the freest and most homelike that he can see the world around.

Sir John became deputy commissioner in 1878 and in that capacity had much personal experience with the Scottish system of boarding-out quiet chronic insane and he became an earnest advocate of such care. He studied it carefully in several continental countries, wrote valuable discussions of its various phases and became known as the greatest English-speaking authority on the subject. In this connection, it is interesting to note that the New York State Lunacy Commission and the New York State Charities Aid Society now urge the boarding-out of quiet insane, as a relief from the crowding and expense of the present system in that state.

Sir John was a member of the commission for twenty-one years until his retirement for age in 1899. His patient apprenticeship, his long tenure of office, free from politics, as well as his wisdom and manliness and tact suggest the reason for the world-wide prestige enjoyed by the Scotch Lunacy Commission, which has had the services of men of his calibre. By the same tokens is pointed the moral of the inevitable failure of too many apparently similar boards in this country.

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[3] Wiener med. Wochft., 1903.
[4] Zeits. f. Hyg., 1905, No. 50, p. 265.

When all the American states offer to their talented sons the same opportunities for public service which Scotland affords, then we may hope that the spirit and devotion of such men as Sir John Sibbald will not be lacking here. We need men who are willing to devote themseves to the humdrum routine of administration, and who can do it in the spirit of modern science. Sir John had the scientific mind, careful, methodical, and thoroughly trained, and his views were those of a scientist; yet it is noteworthy that the improvements he chiefly urged were on the humanitarian side; such as freedom and simplicity in the institution, simple home life in the villagers' families for suitable quiet patients, separate wards in general hospitals for acute and transitory cases, etc. It is this humanitarian view which we must recognize as being also the scientific view in the modern care of the insane. Dr. Sibbald was knighted for his public services, on his retirement from the commission.

THE PURE-FOOD CAMPAIGN.

If we are to have rational and necessary pure food legislation by the next Congress, the medical profession must join actively in the education of the public. With the commercial interests arrayed on both sides of the contest, the layman has small opportunity to glean the real truth from the mass of documentary ammunition (so-called "literature") that is weekly being hurled from one camp into the other. Many periodicals are giving space to contributions of greater or less value, but, as we have before noted, some of the statements are wildly exaggerated. Recent issues of *Public Opinion* and of a little Chicago publication, *What to Eat*, contain articles purporting to support the pure food movement, but really well calculated to furnish munitions of war to the already well-supplied opposition. The use of intemperate terms in such a cause as this is greatly to be regretted; for example, "thieves and robbers," "heinous custom," "poisonous, nerve-racking, baby-killing food." The public is gravely told that "visible signs of degeneracy" are increasing in the Gulf States and that the one cause is "deplorable foods." It is also told that the market contains foods made from "factory refuse and street sweepings," and that the "meat of diseased horses and mules" is sold for beef. The real animus of these articles appears to show in these expressions: "Our proposed law . . . is unique only because of its originality" (*sic*) and "there have been many grave charges to the effect that the food bill now pending was drafted for the benefit of the so-called whisky trust." Not much benefit to the pure food cause can come from the following gems: "The germs of the human system," "certain germs are absolutely essential to life and health," "the entire organism of the human system is composed of different kinds of germs," "there are two kinds of germs in the human system continuously at war with each other," and "when the disease germ overpowers the health germ the individual will die." The honest advocate of pure food may well cry: "Save us from our friends!" To all appearances a most subtle attempt is being made to discredit the cause by a systematic series of attacks from the rear. Physicians, however, having well in mind the true merits of the case, are in position entirely to frustrate this scheme, as they come in contact with those who may read these exaggerated articles.

NEWSPAPER MEDICINE.

Many newspaper excursions in the medical field are funny in the highest degree, while others are merely sensational. Of the latter class are articles recently appearing under the captions, "Death in the Money Hunt," and "Hearts Fail; Graves Fill." These "scare heads" were based on the publication of figures, apparently showing in New York City a great recent increase in mortality, especially from heart disease. Possibly, on careful study, the figures, if confirmed, may prove to have some significance, but it is much to be desired that at least the good newspapers might come to deal with medical and sanitary matters in a common sense manner, entirely excluding sensationalism from their treatment of these subjects. By adopting such a course, they might do much good. As it is at present, any possible benefit is swamped in the flood of sensational overstatement. Who will lead the way in an effort to win over the daily press to rational and helpful methods? It is a great task for a great man, but a good result must entirely depend on impersonal methods. In many county societies the work has been begun by "press committees," that furnish the papers with timely articles on medical topics, which are signed impersonally.

CHICAGO'S COMMISSIONER OF HEALTH.

In the exigencies of politics, it seems to have been necessary, in the mind of the new mayor of Chicago, to remove Dr. Reynolds from the position of commissioner of health. The position, in a community as large as Chicago, is of immense importance, the growth of a city —financial, business and numerical—depends on the health of its people, and this on the enforcement of hygienic laws as they apply to municipalities. To fill the position successfully requires that knowledge which can only be gained by experience, and no change should be made unless for the good of the service. Dr. Reynolds has been commissioner for ten years, the last eight years consecutively. To him must be given credit for building up a department of health that is a credit to Chicago and for systematic education of the public resulting in lessened mortality and morbidity rates. Chicago's statistics have been systematically developed so that from its reports have been learned much of value in regard to municipal sanitation and mortality and vital statistics. We sincerely hope that the good work may go on under the new commissioner, whom we wish success. A high standard has been set for him to follow. We hope that he may even surpass the achievements of his predecessor in this field of so great opportunity for civic usefulness.

INSURANCE AND MEDICAL DEFENSE.

Some comment has followed the recent action of a large insurance company in discontinuing its physicians' defense contract. No reason for this withdrawal has been given, though the natural presumption is that the business, at least for that company, proved unprofitable. There yet remain five general casualty companies that issue these contracts and one company devoted solely to this form of insurance. According to *The Chronicle*, an insurance weekly, the company that confines itself to this field issues a contract providing indemnity only for legal services incurred by a policy holder who is sued for malpractice. On the other hand, according to the same authority, the general casualty companies that solicit this business offer a contract that indemnifies for damages up to a certain figure as well as for legal expenses of defense. Unless other companies withdraw their contracts it will appear that some of them still find the risks profitable and that the medical profession does not lack opportunity for insurance against the loss and annoyance of these disagreeable suits. The company that has withdrawn its policy is the same that met with an unfavorable opinion from the attorney-general of Iowa, as noted in The Journal, April 1, 1905, page 1040. In this connection also should be read a letter published in The Journal, April 22, 1905, page 1296, showing that indemnity for damages appears to violate law and ethics, while indemnity for defense does not.

OPEN TREATMENT OF BURNS.

The classical method of treating burns has generally involved the idea of exclusion of the air, even before the bacteriologic discoveries of the past thirty years had made air infection a matter to be so seriously considered. Dr. Sneve's paper in this issue of The Journal, with its advocacy of a diametrically opposite method, will, therefore, attract some attention, as the old ideas are still largely extant. His results in the cases he reports are striking and there is much force in his arguments in favor of the open method. He calls attention in particular to the short duration of the pain in cases thus treated, though this seems contrary to the older ideas on the subject. Theoretically, there is nothing against the chances for good recovery in cases in which the open method of treatment is used, except the possibility of air infection, provided, of course, that the external temperature is properly regulated and that surgical cleanliness is maintained. Burns do not heal by first intention, sloughing and eschars must be expected in severe cases, and, while we can no longer speak of "laudable pus," we can not deny the beneficence of the scab. This very much abused term simply signifies Nature's method of healing many lesions, and nowhere so usefully as in burns. According to Sneve's experience, the usefulness of the crust or scab is evident, and the results in his cases seem to be better than by other methods. When suitable conditions, the proper regulation of external temperature and close surgical oversight, etc., can not be obtained, the older methods of treating these accidents are better, but in selected cases the open method is worthy of a thorough trial, and if the experience of others coincides with that of Dr. Sneve and his colleagues we may expect its general use in the near future. If the open treatment is good for wounds, as some have claimed, its use is still more rational for burns.

A NEW OCCUPATION DISEASE.

A Buffalo physician finds that contiguity to electric generators of large capacity, such as those at the Niagara power works, has a decidedly bad effect on the physique of those employed, especially in producing digestive disorders and their consequences. Exactly how this is to be accounted for he does not venture to say, but suggests that there may be something in the waste electric current, some special set of rays perhaps. He offers as a sort of collateral evidence that may bear on the subject the very quick souring of absolutely fresh milk under the same conditions as those in which the men work, as he has demonstrated by direct experiment. Electricity is a force of which as yet we have very imperfect knowledge in many respects, and it is quite within the range of possibility that, with the high concentration and quantity that must be constantly acting on the surrounding mediums in such extensive power works as those at Niagara Falls, some pathologic effects might be developed. That it has not been observed elsewhere to some extent is not unaccountable. There are few places, if any, where such phenomena are as likely to be impressed on the casual observer as at Niagara Falls, but the facts he gives should suggest investigations in power plants elsewhere. It may be that what is in such excess pathologic might be directed by proper appliances to some valuable therapeutic effect, and the wastage that is altogether harmful at present be rendered of some utility for human health. This, however, is only a conjecture and, perhaps, not a practical one. In any event, the observation, if verified, is of interest as revealing a new form of occupation disease.

SYMPTOMS DUE TO THE PRESENCE OF CATS.

It does not seem unreasonable to believe that the several varieties of sensibility—tactile, painful, thermal, gustatory, olfactory, auditory, visual—are but higher differentiations of a fundamental form, namely, common sensation. Impressions may be conveyed through any of these channels without the intervention of consciousness, but in that event there is a lack of perception. On the other hand, the impression may be of such a delicate and intangible character that the particular channel through which it reaches the sensorium may not be readily discernible. In some such way as this must be explained the knowledge of the presence of another person or the not uncommon recognition without the aid of vision that one is being looked at. Perhaps information under such circumstances is conveyed through nerves of common sensation. It may also be that an impression is made on the olfactory or auditory nerves. Some interesting observations along this line have recently been recorded by Dr. S. Weir Mitchell,[1] in a paper in which he refers to an hysterical woman in whom a fear of cats had become an obsession and who declared that she could always detect the presence of an unseen or unheard cat. To designate the state of cat-fear, Dr. Mitchell employs the term ailurophobia. A collective investigation of the subject was undertaken, as a result of which it appears that a not inconsiderable number of persons exhibit, in the presence of a cat, various phenomena, such as fear, terror, disgust, chilly sensations, horripilation, weakness, trismus, rigidity of the arms, pallor, nausea, vomiting, convulsions, temporary blindness. In a large proportion of the cases, the manifestations make their appearance even when the animal is not seen or heard. In a small number of these, the individuals were conscious of the odor of the animal, while in the remainder they were entirely unaware of the manner in which they recognized the presence of the offending cause. In the latter, likewise, it seems most probable that the recognition is due to odorous emanations appreciable to a sensitive nervous system, but not as an olfactory impression. Asthmatic symptoms develop in some persons in the presence of cats and of other animals, and the same phenomena have been observed in those exposed to the emanations from hides and furs.

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[1] Amer. Med., May 27, 1905, p. 851.

Medical News

CALIFORNIA.

Commencement.—The College of Medicine of the University of Southern California, Los Angeles, held its twentieth annual commencement June 13. A class of 23 received degrees from President Bovard of the university, and Dr. George Dock, University of Michigan, Ann Arbor, delivered the doctorate address.

New Hospital for Stockton.—The new emergency hospital erected by Mr. and Mrs. J. H. Hough in memory of Henry Harpur Hewlett at a cost of $30,000, was formally transferred to the city of Stockton June 5. Dr. Ira B. Ladd has been appointed surgeon to the hospital. The first patient was received June 15.

New Society.—It is announced that the Medical Society of the State of California was incorporated June 16. The directors are one regular practitioner and four eclectics. It is stated that the society is not formed for pecuniary profit, but for charitable and social purposes, to establish free clinics for the poor and to bring together practitioners of all schools in California.

Personal.—Dr. Joseph Marshall Flint, San Francisco, has sailed for Europe. He expects to spend two years in Breslau with Prof. Dr. Mikulicz.——Dr. Alfred E. Regensburger, San Francisco has returned after an extended trip through China and Japan.——Dr. Samuel S. Bogle, Santa Rosa, has been elected health officer of Sonoma County.——Dr. Harry S. Gossage has been elected secretary of the board of health and health officer of Petaluma.——Dr. Thomas F. Taylor, Geyserville, fell June 7 and dislocated his right arm at the shoulder.

ILLINOIS.

A Medical Novelty.—The International Association of Medical and Surgical Specialists has been incorporated by a homeopathic practitioner who announces himself a "mem. active or honorary of many state, national and foreign med. and scientific socs.," an oculist and a dentist. The object is stated to be to advance the interests of all men in the medical profession from general practitioners and specialists to osteopaths.

Newly Revised Circular on Consumption.—The State Board of Health has just published the fifth revised edition of its circular on consumption. Much new matter has been added, making this edition of increased value to consumptives. A special appeal is made to philanthropists to give financial aid to consumptive patients who are too poor to properly care for themselves, this appeal concluding:

> No better opportunity for practical charity ever existed; no greater privilege was ever offered than is held out to him who would provide the means for the poor consumptive to regain his health and to face the battle for life and for existence on an equal footing with his fellows. Those who are giving fortunes for the advancement of education, of science, or art and even of religion will do well to pause and consider if saving the life of our fellow man and restoring him to the helpless ones dependent on him, is not a nobler and a better thing than the elevation of culture to its highest plane or the carrying of learning to the natives of foreign shores.

Chicago.

Physicians on School Board.—Dr. Cornelia B. De Bey has been appointed, and Dr. Wladyslaw A. Kuflewski, reappointed a member of the Board of Education.

Emergency Hospital.—The formal opening of the Chicago Emergency Hospital, 309 Fifth Avenue, occurred June 27. Dr. Richard M. Fletcher is surgeon-in-chief.

Personal.—Dr. Alice Hamilton has gone to Europe.——Dr. George F. Suker has returned to Chicago and has resumed his work as professor of ophthalmology in the Chicago Postgraduate Medical School.

June Health Good.—June health continues to improve as the month draws to a close. The mortality rate for the week ended June 24 was 439, or 11.49 per 1,000 annually, and this is only slightly in excess of the lowest on record, that of June, 1904.

Communicable Diseases.—Except smallpox, all the contagious and infectious diseases show a decrease in the number of cases reported—diphtheria most marked, 28 cases during the week, as against 36 the week before. There were 18 cases of smallpox discovered, as against 15 during the week of June 17.

Visitors En Route to Portland.—During the past week many parties of physicians and their friends who were passing through Chicago on their way to the Portland session have called at the American Medical Association building. Monday, Drs. Frederick Holme Wiggin, New York, and Cyrus Lee Stephens, Athens, Pa., escorted a party of between 80 and 90 who were traveling on the New York and Philadelphia special train, which was mentioned in THE JOURNAL June 3, page 1775, the names of most of the members of the party being given there. On Tuesday a number from Boston called. This party occupies a special car and is to stop in Colorado and California, and will return to the East by the Canadian Pacific. Among those in this party were: Dr. J. Collins Warren, Dr. John Warren, Prof. Thomas Dwight, Dr. and Mrs. M. H. Richardson and daughter, Dr. and Mrs. John C. Munro and son, Dr. F. C. Shattuck and daughter and friend, and Dr. R. F. Oneil of Boston, and Dr. G. Ben Johnston, Dr. Christopher Tompkins, and Dr. L. C. Bosher of Richmond, Va., and Dr. Julia Tolman of Arlington, Mass.

Dr. Reynolds' Valedictory.—Dr. Arthur R. Reynolds, in his final bulletin as commissioner of health, in summing up the results of his ten years' service, remarks on the purpose of the labor of a health commissioner and on the honor that falls to one who can demonstrate that he left his city healthier than he found it. He gives the following demonstration that Chicago is to-day a much more healthful city than it was found a dozen years ago:

> Its death rate during 1893 was 212 in every ten thousand of its population of all ages. In 1904 the rate was 136 in every ten thousand. Improvement in general healthfulneess—36 per cent.
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> In 1893 there died 8,125 infants out of 32,954 living under 1 year of age—a rate of 246 per thousand. Last year, out of 40,578 living under 1 year, there died 5,125—a rate of 124 per thousand. Reduction of infant mortality—50 per cent.
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> In 1893, out of a child population of 121,564 living between 1 and 5 years of age, there were 4,328 deaths—a rate of 35 per thousand. Last year, out of 162,315 children living at this age-period, there were 2,027 deaths—a rate of 13 per thousand. Saving of child-life—64 per cent.
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> In 1893 the aggregate ages of the 27,083 individuals who died during that year amounted to 617,492 years, or an average of 22.8 years each. In 1904 the aggregate ages of the 26,311 decedents footed up 855,107 years—an average of 32.5 years each. Increased duration of life during the last twelve years—42.5 per cent., or an increased "expectation of life" of 9 years and 9 months for every man, woman and child living in Chicago.

IOWA.

New Hospital for Carroll.—St. Anthony's Hospital, Carroll, erected at a cost of $60,000, was formally opened June 15.

Tuberculosis Lectureship Established.—The State University College of Medicine, Iowa City, has established a lectureship on tuberculosis and has appointed Dr. John W. Kime, Fort Dodge, to the position of lecturer.

State Health Officers.—At the annual meeting of the Iowa Association of Health Officers at Iowa City, June 13, the following officers were elected President, Dr. Louis A. Thomas, Red Oak (re-elected); vice-president, Dr. George P. Neal, Fort

Madison, and secretary and treasurer, Dr. Cassius T. Lesan, Mount Ayr. A midwinter meeting will be held in Des Moines in January, 1906, and the annual meeting in June at Waterloo.

Personal.—Dr. Harvey G. Hieber, Cedar Falls, is studying in Vienna.——Dr. and Mrs. Henry Albert, Iowa City, sailed from New York June 15 on the *Friederich der Grosse.*——Dr. Oscar C. Wilhite, Cherokee, has been appointed superintendent of the new state hospital for inebriates at Knoxville, which will open in September.——Dr. James J. Ransom, Burlington, has returned from Europe and has gone to Vermont for the summer.

Warning.—Subscribers to The Journal and members of the American Medical Association in Iowa are warned against paying subscriptions or dues to any unauthorized individual. A Des Moines physician who was induced to give such a person a check for his annual dues, describes him as a "seedy-looking individual and evidently a victim of alcohol or morphin or both." He was very anxious to have the dues paid in cash, but our correspondent was prudent enough to give him a check which has not yet been presented for payment.

MARYLAND.

Personal.—Dr. John W. Lacy, Lisbon, sailed for Liverpool on the *Oceanic,* June 6.

New Doctors.—On June 21, 124 candidates presented themselves for examination by the State Medical Board, including one negro, a graduate of the Medical-Chirurgical-Theological College of Christ's Institution, heretofore mentioned in these pages.

Baltimore.

Hospital Incorporated.—Good Samaritan Hospital and Dispensary was incorporated June 20, without capital stock.

Children Transferred to Summer Home.—The fifty patients of the Hospital for Crippled and Deformed Children were transferred to the summer hospital in the Blue Ridge Mountains, June 22. There they are quartered in Army hospital tents, each holding twelve.

Personal.—Dr. Arthur M. Shipley has been re-elected medical superintendent of the University Hospital.——Drs. Hugh W. Brent and E. Hansen, late residents in the same hospital, are spending the summer in Scandinavia.——Dr. Edward Janney sailed for Genoa on June 17.——Dr. John C. Hemmeter received the degree of LL.D. at the commencement at St. John's College, Annapolis, last week.——Dr. L. Ernest Neale delivered the address to the graduates at Loyola College, Baltimore, June 22.——Dr. Ira Remsen, president of Johns Hopkins University, has left for Northeast Harbor, Maine, where he will spend the summer.——Dr. Harry Friedenwald will leave for Europe July 13, to be gone two months.——Dr. Friedenwald was elected president of the Federation of American Zionists at its meeting in Philadelphia, June 20.

MASSACHUSETTS.

Fewer Need Help.—The board of overseers of the poor in Boston spent $114,205 in 1904, aiding 2,248 families, as against 4,403 in 1884.

School Closed—As 20 cases of diphtheria occurred among the 700 pupils of the Adams school, Quincy, the building has been closed for the rest of the term.

Tuft's College Commencement.—Tuft's College granted twelve degrees in medicine June 20. Of the nine degrees "cum laude," five were awarded to young women out of a total of twelve in the class.

East Boston Hospital Hopes Raised.—Hopes of a hospital in East Boston are again revived by a conference between the mayor and the trustees of the City Hospital. It is likely that a relief hospital will be the outcome, to be conducted like that in the North End, as a branch of the main city institution. The expense of building and maintaining such a station would be much less than that of the larger permanent hospital authorized by the state legislature.

City Physicians of the State.—The City Physicians of Massachusetts have formed an organization and held a banquet June 20 in Boston. The officers of the temporary organization are as follows: Dr. Edwin P. Gleason, Brockton, president; Dr. George L. Black, Lawrence, vice-president; Dr. William D. McFee, Haverhill, secretary and treasurer, and Drs. Henry C. Hallowell, Quincy; F. N. Murphy, Taunton, and Thomas E. Caulfield Woburn, executive committee.

Gubernatorial Appointments.—The governor has made the following appointments: Dr. William N. Bullard, Boston, trustee to the Hospital for Epileptics; Dr. Samuel G. Webber, Boston, trustee to the Hospital for Dipsomaniacs and Inebriates; Dr. Andrew H. Hodgson, Dedham, medical examiner of Norfolk County; Dr. John C. Irish, Lowell, medical examiner of Middlesex County; Dr. Everett M. Bowker, Brookline, associate medical examiner of Norfolk County, and Dr. Harry M. Cutts, Brookline, medical examiner of Norfolk County.

MISSOURI.

St. Louis.

Mayor vs. Health Commissioner.—Charges were filed June 26 by Mayor Wells of St. Louis against Health Commissioner Dr. John H. Simon with seven counts, alleging failure to devote his entire time to the work of his office, neglect of duty, willful abuse of official power, annoying and harassing superintendents of city institutions, etc.

Skin and Cancer Hospital.—A skin and cancer hospital will shortly open. It is intended to make the research idea prominent in the conduct of the institution. Dr. Martin F. Engman is credited with having originated the idea of the establishment of this hospital. It will be located corner of Jefferson Avenue and Locust Street in the hospital building formerly used by Dr. H. Tuholske.

City Hospital Open.—The new City Hospital of St. Louis is now open. The patients from the old building are being moved to the new. The isolation ward will be used temporarily as the administration building until the building for that purpose, now in course of erection, is finished. The new hospital is modern in every particular. It is four stories high and will accommodate 400 patients without crowding.

NEW YORK.

Hospital Incorporated.—St. Joachim's Hospital, Watertown, "to nurse and care for the sick and injured," was incorporated June 16.

Endows Memorial Bed.—Mrs. James R. Willets has given $3,000 to the Nassau Hospital Association to endow a bed to be known as the James R. Willets bed, in memory of her husband.

Pure Food League Incorporated.—The National Pure Food and Drug League was incorporated at Albany on June 19, to work for pure food, drugs and beverages by moral and legal methods. The principal office will be in Albany.

Stony Wold Sanatorium.—The fourth annual report states that 68 patients have been restored to their places in the world as wage earners as the result of the treatment employed at Stony Wold last year.——An entertainment given by the Junior Auxiliary at Ardsley has netted $800 for the sanatorium.

Milkmen Alarmed.—About thirty milk dealers awaiting trial in the Court of Special Sessions were considerably alarmed when it became known that one of their number who had been tried for a second offense had been sentenced to fifteen days' imprisonment. The New York State Board of Agriculture has sent out an order forbidding the storage or sale of any milk or milk product in unclean receptacles or in buildings with insanitary surroundings. It is the expressed intention of the Commissioner of Agriculture to proceed against persons violating the order.

Personal.—Dr. Emerson B. Lambert, Port Jervis, has been appointed an official visitor to the Middletown State Homeopathic Hospital.——Dr. Charles D. Graney has been made secretary of the Le Roy Board of Health.——Dr. Arthur H. Terry, Patchogue, while going to Sayville to assist in an operation, was thrown from his automobile by a collision with a hidden hydrant and bruised about the head and shoulders.——Dr. Walter A. Scott, Niagara Falls, who was recently operated on for appendicitis, is reported as making favorable progress toward recovery.——Dr. Henry D. Sill, Cooperstown, has been appointed a member of the board of managers of the Binghamton State Hospital.

New York City.

Strauss Milk Depots Opened.—Sixteen stations were opened June 24 for dispensing milk to the children of the poor.

Conrad to Sing Sing.—Dr. Edward E. Conrad, whose conviction for attempted abortion was affirmed by the Court of Appeals, was sent to prison June 18 to serve a term of not less than one year nor more than two years.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended June 17, 746 cases of measles, with 31 deaths; 373 cases of tuberculosis, with 152 deaths; 281

cases of diphtheria, with 31 deaths; 142 cases of scarlet fever, with 5 deaths; 68 cases of cerebrospinal meningitis and 42 deaths; 45 cases of typhoid fever, with 13 deaths; 108 cases of varicella.

New Hospital for Consumptives.—Plans have been filed for the building of a new hospital on the southwest side of North Brother Island at a cost of $150,000. It will be exclusively for the treatment of consumptives and will be equipped with all the newest appliances for the treatment of this disease. Most elaborate arrangements will be made for heating and ventilating and it is proposed to make the hospital a model for institutions of this class.

Seaside Hospital Begins Work.—St. John's Guild has announced the opening of its seaside hospital at Newdorp, Staten Island. In its twenty-four seasons this institution has treated 31,163 children and their mothers, from among the poorest of the city, and absolutely without cost to them. Until the floating hospital begins its trips patients for the seaside hospital will be met at the Staten Island ferry and, after an examination by the doctor, will be sent to the hospital.

Personal.—Dr. William S. Bainbridge has been appointed consulting gynecologist at St. Mary's Hospital, Jamaica, L. I.——Dr. J. G. Johnson of Brooklyn was thrown from his buggy and escaped with slight injuries.——Dr. Daniel Stimson sailed on the *Rotterdam* for Boulogne, June 20.——Dr. and Mrs. Edward H. Griffin and Dr. Alexander T. O'Malley sailed on the *Patricia* for Hamburg, June 24.——Dr. and Mrs. William S. Bennett sailed on the *Furnessia* for Glasgow, June 24.——Dr. and Mrs. W. A. Crofoot arrived home on the *Potsdam*, June 20.——Dr. Frank J. Parker sailed for Europe June 15.

The Risk of Consumption.—Justice Marean of the Supreme Court in Brooklyn has handed down an opinion telling why he had granted a temporary injunction restraining the Board of Health from establishing a clinic for consumptives in Henry street, Brooklyn. The substance of this decision is that if the breathing of street dust containing the germs of tuberculosis is a menace to health, the more germs there, the greater work will be the risk, and that the establishment of a clinic for the treatment of this disease would bring many victims into the neighborhood and thus materially increase the danger to dwellers in the vicinity.

OHIO.

New Department to Treat Tuberculosis.—The Cincinnati Polyclinic has established a free department for the treatment of tuberculosis under the direction of Drs. B. F. Lyle, C. E. Iliff and J. H. Schroeder.

Personal.—Dr. Bernard R. Le Roy, Chagrin Falls, sailed June 18 for Porto Rico. He will visit Central America and Mexico before he returns.——Dr. Aloysius P. Renneker, Cincinnati, was thrown from his buggy by a collision with a street car June 22 and slightly injured.

Bars Dangerous Explosives.—The Cleveland city council has passed an ordinance governing the use of fireworks, which closes as follows: "And the permission hereby given to explode fireworks on the Fourth of July shall not extend to nor include blank cartridges, blank cartridge pistols, nitroglycerin, fireworks containing nitroglycerin, repeating marbles, toy cannons or dynamite torpedoes." This ordinance has been passed by the efforts of the legislative committee of the Cleveland Academy of Medicine.

To Protect Public Against Contagion.—The assistant city solicitor of Cincinnati recently rendered a decision to the health officer that hereafter where circumstances warrant, for the protection of the public against contagion, the health authorities can remove a person suffering from consumption from a private home to a quarantine hospital, inasmuch as the State Board of Health has declared tuberculosis to be a contagious disease. However, as there is not such immediate danger of contagion from this disease as from smallpox, no hasty action should be taken. The most thorough investigation and consideration must be given to a case before such action is taken and there must be no doubt about the immediate danger of contagion before it is done. The health officer must also exercise great care not to cause unnecessary hardship on a person or family in such a case.

Cincinnati Faculty Changes.—At a recent meeting of the Medical College of Ohio, Medical Department of the University of Cincinnati, Drs. Phineas S. Connor, dean of the faculty and professor of surgery, and Thaddeus A. Reamy, professor of gynecology, resigned. Dr. Frederick Forchheimer was elected dean; Dr. Joseph, professor of surgery; Dr. H. J. Whitacre, professor of the principles of surgery; Dr. S. P. Kramer, professor of surgical pathology; Dr. Samuel Iglauer, associate professor of laryngology; Dr. P. S. Connor, emeritus professor of surgery and professor of clinical surgery; Dr. Thad. A. Reamy, emeritus professor of gynecology; Dr. E. Gustave Zinke, professor of obstetrics and gynecology; Drs. C. L. Bonifield and C. A. L. Reed to the executive faculty.——At a recent meeting of the faculty of Miami Medical College Dr. Edward W. Walker was elected professor of the principles of pathology; Dr. Oliver P. Holt, professor of pathology; Dr. Frank Lamb, lecturer on physiology, and Dr. Edward H. Shields, professor of skin and venereal diseases.

PENNSYLVANIA.

Heat Prostrations.—Many cases of heat prostration were treated in the hospitals of Philadelphia during the hot days in the early part of the week. On June 19 the thermometer registered 94 degrees. This temperature has never been exceeded during the last thirty-five years. Several deaths were recorded in Philadelphia and also a large number of prostrations and deaths in the other cities of this state, particularly Pittsburg.

Assistants to State Health Commissioner Appointed.—Dr. Samuel G. Dixon, the newly appointed commissioner of health, announced the following appointments June 22: Assistant commissioner of health, Dr. Benjamin Lee, who was for many years treasurer of the state medical society and was appointed secretary of the State Board of Health in 1885, and Dr. Frederick C. Johnson, Bradford, was appointed chief of the division of inspecting, quarantining and disinfecting.

Philadelphia.

Physician Exonerated.—Dr. Horace Ladd, who was arrested, charged with performing a criminal operation resulting in the death of a patient, was exonerated by the coroner's jury June 22.

Malpractitioner Sentenced.—Philip M. Pierson, alias "Dr." White, 72 years old, pleaded guilty in Quarter Sessions to the charge of malpractice and was sentenced to eighteen months in the county prison.

Personal.—Dr. Charles K. Mills has been appointed consulting neurologist to the American Oncologic Hospital, and Dr. Samuel McClary III has been elected assistant pathologist to the same institution.——Dr. Thomas Hunter sailed for Europe June 22.——Dr. and Mrs. Oram Ring will sail for Europe the first week in July.

Medical Inspection in May.—During May 3,688 inspections were made by the medical inspectors, excluding schools. They ordered 540 fumigations and came in contact with 58 cases that required special diagnosis. They made 5,186 visits to the different schools throughout the city and excluded 863 children from the schools. They took 162 cultures for examination, made 105 injections of antitoxin and performed 580 vaccinations.

Bequests.—By the will of Mrs. Pauline E. Henry, one of the founders of the Germantown Hospital, that institution receives $10,000. The sum is to be used for the support of two free beds for incurable female patients. Besides this sum she bequeaths $5,000 as an endowment fund, and the remainder of her estate is to be utilized to establish another ward or hospital for convalescent female patients and children. The testator also bequeaths $2,000 to the Woman's Hospital to endow a scholarship for nurses.

Health Report.—The number of deaths reported for the week ended June 24 aggregated 451, an increase of 31 over those reported last week and an increase of 56 over those of the corresponding period of last year. The torrid wave early in the week was partially responsible for this increase. The principal causes of death were: Typhoid fever, 14; diphtheria, 3; consumption, 53; meningitis, 2; cancer, 18; diabetes, 6; apoplexy, 24; heart disease, 43; acute respiratory disease, 28; enteritis, 62; Bright's disease, 33, and sunstroke, 3. There were 227 cases of contagious disease reported, with 17 deaths, as compared with 269 cases and 29 deaths during the preceding week.

Medical Visits in Schools.—The report of the assistant medical inspectors of their visits to the schools throughout the city from September, 1904, until June 1, showed that 46,196 visits were made. During this period 111,100 school children were examined. Of this number 513 cases required special diagnosis. The inspectors performed vaccination on 13,120 individuals. They took 2,466 cultures from suspicious sore throats and made 1,034 injections of antitoxin. They also made 4,577 visits to typhoid fever patients; 3,144 visits to diphtheria cases; 2,199 to scarlet fever; 2,615 to chicken pox; 738 to tuberculosis, and 19 to smallpox cases. Prior to the increase in the number of inspectors it was the custom to pay other physicians 40 cents for each vaccination alone. The statistician of the health office has figured that according to the visits made by the medical inspectors and their salary—$1,200 a year each—the cost to the city was a trifle over 30 cents for each visit.

Observations on Cerebrospinal Fever.—The following is the report of the observations on cerebrospinal fever made by the medical inspectors:

> Since the published report on "Epidemic Cerebrospinal Meningitis" in the "Bulletin of the Bureau of Health" for week ending April 8, 1905, a careful study and critical analysis has been made of the clinical data submitted to this office by the medical inspectors, who were instructed to secure from family physicians a complete history of every case reported to bureau, from September, 1904, to date of this issue.
>
> The result of this research has disclosed information of a very satisfactory nature, so far as the health of the city is concerned; but discouraging, when we consider the little progress made in its treatment, so far as reducing its percentage of mortality; then too, no satisfactory light is thrown on the method of transmission.
>
> Despite the mild hysterical condition of the people, due doubtlessly to exaggerated newspaper accounts of the prevalence of cerebrospinal meningitis in this city, the facts revealed are most comforting. Since September, 1904, there have been only 50 cases of the epidemic form of this disease. In two or three of these cases, the inspectors had reason to believe the symptoms were not clearly interpreted: but were unable to secure more satisfactory data. This has compelled us to add a few cases which were decidedly doubtful.
>
> These cases were distributed throughout the length and breadth of the entire city. From Germantown on the extreme northwest border, to Southwark on the southeast; and from Frankford to Paschalville in the Fortieth ward. Cases were found in 30 of the 42 wards of Philadelphia. In four instances two were taken from same house; but with these exceptions, there was but little evidence to show the disease was transmitted directly, as the others were scattered broadcast over the city. All history of contact being positively excluded in the large majority.
>
> Age, seemingly, figures as a predisposing factor, as but three of the fifty cases were over thirty years of age, and 80 per cent. were twenty or under. People of all colors seem to be attacked alike. The number of blacks reported was in proportion to the percentage of the white population.
>
> That sanitary environment is not the dominant influence in the etiology of this malady, was demonstrated by the fact that in thirty-eight of the homes of those afflicted, or 80 per cent. of houses in which cases were found, the inspectors reported the surroundings to be in good sanitary condition.
>
> Lumbar punctures were made in but sixteen instances, with positive results in all but one. As many of the patients were treated in their own homes, this important aid in diagnosis was often omitted for lack of proper facilities. Of the entire fifty cases reported, thirty-two died, showing a mortality of 64 per cent.
>
> On tabulating the symptoms, we found that with but four exceptions, none of the classical phenomena was conspicuously constant. The four exceptions were abrupt onset, vomiting, cephalalgia, and stiffness of neck. These symptoms were present in 75 per cent. of the cases. Kernig's sign was elicited in 50 per cent., and herpes in only 20 per cent.
>
> When we compare total of fifty cases in this city, with a population of approximately 1,500,000, with the reports of the prevalence of this disease in some of the other large cities, the community of Philadelphia has ample reason to be congratulated.

SOUTH CAROLINA.

The New State Journal.—The first number of the *Journal of the South Carolina Medical Association* was issued June 21. Dr. T. P. Whaley, secretary of the South Carolina Medical Association; Dr. Robert Wilson and Dr. Charles P. Aimar of Charleston, are the editors. Attractive in form and composition, it will prove of great value to the organized profession in the state. The greater part of the first number is devoted to a report of the annual meeting of the South Carolina Medical Association at Greenville, and to reports of committees and county societies. It also contains the annual address of the retiring president, Dr. Robert Wilson, Jr., and a number of original articles.

GENERAL.

More Hospitals for Panama.—The Panama Canal Commission has decided to build several new hospitals, one at Empire, with 500 beds; one at Colon, with 96 beds, and one at Taboga, with 100 beds; also a sanitarium at Panama. The hospitals at Panama will be rebuilt and equipped with modern appliances and accommodations.

Yellow Fever in Panama.—According to dispatches, the sanitary conditions of Colon and of Panama show no improvement. From June 4 to 12 four new cases of yellow fever were admitted to the hospitals. Of these 2 patients were Americans. Two deaths from yellow fever occurred in Panama during the week ending June 12, and 4 in Colon.

FOREIGN.

Institutions for Phototherapy in Italy.—A group of physicians at Milan have opened a subscription to provide the public hospital with an equipment for free Finsen treatment of lupus. Florence already has an institution of the kind.

Sanitarium for Returning Insane Russian Soldiers.—The great influx of soldiers returning from the seat of war with nervous and mental affections has led to the organization of a number of physicians for the purpose of founding a private sanitarium. The capacity of the military hospitals has long been exhausted.

Schmidt of Marburg Receives the Hanburg Prize.—The Hanburg prize for promoting progress in chemistry and pharmacognosy has been awarded this year to Prof. E. Schmidt of Marburg. The presidents of the British Pharmaceutical Society, the Chemical Society and the Linné Society are members *ex officio* of the committee in charge of this biennial prize.

Ehrlich and Cajal Elected Members of the Paris Academy of Medicine.—At the session of May 23 this society voted to elect Ehrlich and Ramon y Cajal foreign associate members. The list of names proposed included, beside these, Sir William Broadbent of London, von Esmarch of Kiel, Hansen of Bergen, and Morisani of Naples, Broadbent receiving the next largest number of votes.

French Medical Mission in China.—In 1902 the French obtained permission to open a hospital in Tchentou, a city in western China. The viceroy has been pleased with the work done by the hospital, and government quarters have now been allotted for the organization of a medical college. Thirty-two students have already applied and a special building is now being constructed for the college.

Lime in Treatment of Tuberculosis.—Angiulli of Naples has accepted the theory of excessive loss of mineral elements as the main factor in preparing the soil for tuberculosis or in keeping it favorable. He therefore treats the disease by hypodermic injection of soluble lime salts. He has been exhibiting at Rome a number of patients cured by this remineralization, and is urging others to give it a trial.

The Italian Asylum for Orphans of Physicians.—A letter from Rome in the *Münch. med. Wochft.* for May 9 describes this institution. It is located at Perugia, about the center of Italy, and was founded by private benevolence, but is maintained by a small tax on all physicians in the paid employ of cities, states or communities throughout the kingdom. It is managed by a committee of 15, the majority of whom reside in Perugia; the others are rarely able to go there to aid in the administration of the asylum. The boys are housed in a gloomy, cold, damp building built for a monastery, and the girls are boarded out in a local young ladies' seminary. The expense is comparatively high, each of the wards costing the state about $200 a year.

Russian Physician Beaten.—Our European exchanges have had considerable to say lately in regard to the outrage inflicted on a prominent Russian physician by the commanding general in the Caucasus, General Kowaleff. The physician had no acquaintance or connection with the general, but came to his residence in response to a professional summons, the messenger stating that the general was very sick. When he arrived he found the officer drinking wine at a table with a friend, and a glass was courteously offered the physician. As he took it he was seized from behind by seven Cossacks, stripped and knouted savagely, and then carried home in a carriage. No cause for the outrage could be surmised, and the entire profession was indignant. The general was summoned before the military court and was mildly censured but not otherwise punished. The protests were so vigorous that further court proceedings were instituted against him, but the latest news is to the effect that he has committed suicide.

The Spirochaete Pallida and Syphilis.—An editorial in the *Münch. med. Wochft.* for June 13 comments cautiously but exultantly on the testimony that is accumulating in favor of the assumption that in the *Spirochaete pallida* the germ of syphilis has at last been discovered. The prominence of its discoverer, Schaudinn, one of the leading authorities on protozoa in the world, and the prominence of the scientists whose control investigations have confirmed his findings, compelled respectful attention at once to their statements. The control list includes Metchnikoff of Paris, C. Fraenkel of Halle, Lehmann of Würzburg and many others. These have all found the pallida in the lesions of acquired or inherited syphilis and nowhere else, but to date it has proved impossible to cultivate this delicate spirochaete in pure cultures. Schaudinn is in charge of the protozoa laboratory of the government public health department. Koch's discovery of the tubercle bacillus was also made under the auspices of the same German "Kaiserl. Gesundheitsamt."

Marmorek's Antituberculosis Serum.—Prof. E. Lewin of Stockholm was sent by the Swedish government to Paris last December to examine into the production and action of Marmorek's antituberculosis serum. He spent several months on the mission and has returned convinced that its results justify further trials on a large scale. He states that Marmorek has a record of 400 cases treated by himself or others in various lands, and fully 100 can be regarded as cured. The proportion in 100 cases of surgical tuberculosis was 80 per cent. cured or immeasurably improved, without any adjuvant measures. These proportions were about the same as in the numerous cases inspected at intervals by Lewin in Paris, Switzerland, and elsewhere. The serum has no toxic action as it contains the antitoxins alone. On the basis of this favorable report the serum is being tried now extensively in Sweden, Marmorek having presented him with 2,000 vials free of charge. Dr. A. Marmorek was connected with the Paris Institut Pasteur until recently and still resides in Paris.

Work of the Board of Public Health in Mexico.—The bulletin issued by the public health department of Mexico for May gives the report of N. del Rio, chief of the yellow fever service in Vera Cruz, for April. The energy and efficiency displayed are evident from the fact that all non-immune persons are closely watched, the chief reporting 37.913 visits made to non-immune persons during the month. He also states that 685 non-immune persons entered and 495 left the city during that time. As many as 1,501 deposits of water were petrolized and 57 house owners were notified to make certain repairs or improvements, while the department cleaned 29 premises and disinfected 85 houses in which cases of tuberculosis, measles or malaria had occurred. Not a single case of yellow fever developed during the month, although the weather was hotter than for years, and almost every disease was complicated with an icteric condition due to the excessive functional activity of the liver at this temperature. He adds that the defective condition of the water pipes causes so much leakage of water that the supply is not enough for the city, and reserve supplies are kept on hand in barrels, etc., thus providing unusual opportunities for the breeding of mosquitoes.

Cuban National Medical Congress.—The physicians of Cuba gathered at Havana May 20 on the "independence day" of the republic, for the first national medical congress. The subjects appointed for discussion were the prophylaxis of yellow fever and malaria, parasitology in Cuba, also the campaign against tuberculosis, and the sanitary statistics of the island. J. A. Presno of Havana, editor of the *Revista de Med. y Cirugia*, was the secretary general, and the issue of the *Revista* for that date is a bulky number containing several of the communications. Among them is one by Landa, giving instances of the noxious influence of the abuse of tobacco on the hearing. He also urges careful antisepsis of the nose and throat in prophylaxis of ear affections during and after infectious diseases. For this he advises inhaling the steam of boiling water, to which a spoonful of an alcoholic 4 per cent. solution of menthol has been added. Or the nose can be disinfected with a salve containing 5 parts boric acid and .5 part menthol in 30 parts vaselin. For a gargle he orders 5 gm. salol and 10 drops each of tincture of mentha and tincture of eucalyptus in 100 gm. alcohol. One teaspoonful of this mixture is added to a cup of hot water and used as a gargle or spray. Mon calls attention to his low mortality rate of less than 6 per cent. in 47 cases of typhoid fever. The general average in Havana is over 28 per cent. He gives an energetic saline purgative on the suspicion of typhoid, and a weaker one the next day. Then he urges the patient to drink freely, but allows no food for eight or nine days, thus giving the inflamed bowels a rest and chance to recuperate. Quinin and benzonaphthol are given every day and modified Brand baths as indicated. Two of the three fatal cases were not seen until the second week, and the third patient was a confirmed alcoholic. Recovery was exceptionally rapid and complete in his series. Menocal reports 3 cases of pneumococcus infection localized in the genitals, a few weeks after an attack of pneumonia. The patients were men 38 to 51 years old. Albarran of Paris describes what he calls a new procedure for subcapsular nephrectomy. Its special feature is the ease with which the pedicle can be taken care of. He rinses out the cavity with H_2O_2, never using a toxic antiseptic in kidney surgery. D. Francisco discussed surgical intervention on persons addicted to the ether or chloroform habit. The congress proved successful beyond all anticipations, more than a hundred papers being on the official program, the speakers representing all parts of the island.

LONDON LETTER.

Finger-Print Evidence.

A recent brutal murder for the purpose of robbery of an old man has led to a legal dispute as to the value of finger-print evidence in which the judge severely censured a physician called by the defense. The accused were two lads, thieves by occupation, and the evidence was entirely circumstantial. One of the strongest points was a finger print impression left on a cash box. Inspector Collins of the Scotland Yard finger-print department stated that the department had now between 80,000 and 90,000 sets of records, which meant the impressions of a corresponding number of digits. He had never found two impressions to correspond. The highest number of characteristics he had ever found to agree in the impressions of two different fingers was three, and only two or three such instances had occurred. The right thumb of one of the prisoners agreed with the mark on the cash box, there being twelve characteristics in common. For the defense a physician was called who said that he had a large experience in the finger-print system, and was employed by the government in 1894 to undertake the organization of the finger print and Bertillon system and that he had trained a staff of police officials. He described points of dissimilarity between the two prints. He thought it was possible that they were prints of the same person, but that they were undoubtedly of different fingers. In cross-examination he admitted that he had no experience of identification by finger prints since 1901. He thoroughly damned his evidence by having written both to the prosecution and to the defense, offering to give evidence on behalf of whichever retained him. When pressed on this point he said "I am an independent witness." The judge then interjected: "An absolutely untrustworthy one." When counsel for the defense put some further questions the judge exclaimed: "Isn't there a limit to whitewashing this gentleman? It has done your client a lot of harm." The prisoners were found guilty and executed. Any doubt which might have existed was removed by their confession.

The Aims of Tropical Medicine.

At a banquet in aid of the funds of the London School of Tropical Medicine, at which $50,000 was subscribed, Sir Patrick Manson gave a lucid account of the work of the school and sketched a plan for systematic and co-ordinated research in tropical disease centers. This consists in the establishment of colonial research laboratories in places where they are likely to achieve profitable results. Already three such laboratories have been established—in Ceylon, at Kuala Lumpur, in the federated Malay states, and in Hongkong. Sir Patrick Manson suggested that one such laboratory should be established for every group of crown colonies, the director to be in organic relation with the London school, but with a free hand to take up any special line of investigation in tropical diseases. The directors of these laboratories should be educated in their special work at the London School of Tropical Medicine; East Africa, Uganda and British Central Africa might form one group, the West Coast of Africa another, the West Indies and British Guiana a third, Fiji and the Pacific islands a fourth. Thus there would be seven laboratories affiliated with the London School of Tropical Medicine. Sir Patrick Manson also emphasized the importance of educating the natives in tropical hygiene. He suggested that tuition in the rudiments of the subject should be included in the curriculum of colonial government schools, so that when the child grows up he may be willing to submit to sanitary measures. Without the co-operation of the natives it is hopeless to try to get any scheme, however good, carried out. A necessary preliminary is the preparation of primers for the instruction of school teachers who in turn would teach children.

The Concentration of Scientific Teaching in London.

The problem of concentrating the teaching of the preliminary and intermediate subjects of the medical curriculum in a few centers has long occupied the attention of reformers in medical education. Its solution would necessarily produce greater efficiency in teaching and economy in expenditure. Huxley suggested it thirty-five years ago, but until recently it made no progress. The report of the committee of the King's Hospital Fund on the financial relations between the hospitals and medical schools (referred to previously in The Journal), has given it an impetus. The Westminster Hospital Medical School has completed negotiations for the transfer of the teaching of chemistry, anatomy, physiology and materia medica to King's College. Similar negotiations are in progress between other hospitals and King's and University College. Probably there will be three centers in London where medical students can take the scientific part of their curriculum—King's College, University College and the Institute of Medical Science of the University of London.

The Dangers from the Red Rubber Rings of Stoppers of Bottles.

A physician, writing to the *Lancet*, calls attention to a previously unrecognized source of poisoning—the red rubber rings used in the stoppers of bottles—to which he is inclined to attribute appendicitis and other intestinal disorders. He was put on the track in this manner: While visiting a patient he observed a young girl whom he knew looking very ill and depressed, behind the counter of a shop. She stated that she had felt ill for the last two days and was getting worse. Her pulse could scarcely be felt and her hands were cold and clammy. Three hours later he was summoned to her and found her suffering from acute appendicitis. There had been no pain previously. She was removed to a hospital and the appendix was removed. This case gave him the idea that the cause of appendicitis was something which produced first general depression. He learned that the girl was in the habit of drinking daily about six bottles of non-intoxicating drinks which she bought in bottles and that she was the only one of the family who did so. He then inquired of all his patients who had suffered from appendicitis, nine in all, and found they had been drinkers of non-intoxicating drinks from bottles fitted with red rubber rings. On submitting the rings to a chemist for analysis he received the report that antimony could be extracted from them with an alkali and that there was no doubt that alkaline waters and those containing organic acids would have a solvent action on the antimony of the rubber. Further inquiries showed that the red rubber from which the rings were made had the following composition: Rubber, 20; sulphid of antimony, 12; red oxid of zinc, 5; sulphur, $\frac{1}{8}$,and lime, $\frac{1}{4}$. In use the rings are worn down from one-eighth of an inch thick to the thinness of paper and present innumerable cracks and become brittle. Small particles fall into the bottles and are swallowed in the drink. The rings are used in all sorts of bottles—beer bottles, "mineral water" bottles, syphons "sparklets," pickle bottles, and jelly and preserved fruit bottles. The physician suggests that the antimony has a depressive influence on the muscles of the intestine and produces constipation, which in turn leads to appendicitis and other disorders. Whether this theory be true or not, there can be no doubt that he has discovered an unrecognized source of antimonial poisoning.

The Dangers of Jewish Circumcision.

The case of a Jewish child circumcised by a mohel (a rabbi performing circumcision), has been the subject of a coroner's inquest. An hour after the operation there was hemorrhage which the mohel attempted to arrest but failed. He then sent for a physician, and after some delay one arrived. Eventually three physicians were summoned, but they failed to arrest the hemorrhage and the child died. The coroner censured the mohel for not sending for a physician earlier and said that but for the fact that he had done so in the end he would have committed him for trial for manslaughter.

The British Medical Association.

The seventy-third annual meeting of the British Medical Association will be held in Leicester, July 24-28, 1905. The committee is endeavoring to make the annual pathologic museum, usually such an important feature, an exhibition of the progress made in medicine as well as a means for examining the various specimens which form the groundwork of the papers read at the sections. In connection with the food, drug and instrument exhibition a motor car show will be held, at which motors especially suited for physicians will be on view. The meeting will comprise twelve sections.

Pharmacology

ACETANILID MIXTURES.

Whatever is secret is suspicious, and this axiom applies especially to medicines that are secret in character. One reason for the success of secret nostrums lies in the fact that extravagant claims are made for them, which on their face would be ridiculous in the extreme if their true composition were known. Remove the mystery surrounding these preparations and their wonderful virtues would vanish. When the secrecy is revealed and the mystery removed the therapeutic claims appear so absurd that they are laughable. Having shown the true character of some of the secret mixtures (see Journal, June 3, 1905, p. 1791), we thought the publication of some of the "literature" supplied by the manufacturers would make interesting reading. Last week we reproduced "literature" regarding phenalgin and ammonol: below we have made some extracts from the advertising matter of antikamnia and salacetin. The latter, according to the analyses, being an acetanilid mixture which, combined with codein, goes under the euphonious and catchy name, "Sal-Codeia Bell."

Antikamnia.

Our readers will be interested to learn some of the remarkable properties which, according to the statements of the manufacturers, this antikamnia possesses. We quote from the advertising literature:

> The well-known nerve specialist (?), Dr. Harley, in an interview published in the *London Daily Express*, says: "I have treated more than one American for nervousness and 'brain fag' directly due to their incessant energy. I had a young man in here this morning who complained of headache 'in the back of the neck.' He was threatened with congestion of the brain, and seemed somewhat aggrieved when I told him he had been trying to do too much.
>
> "I also treated a young American woman, who since her arrival in London had apparently been living on antikamnia tablets by the advice of her physician. It was the only thing, she said, which kept her 'braced up' for the strain of sight-seeing."

(Why did the young woman consult this Dr. Harley—for the drug habit?)

Note the following:

> For the severe pains of rheumatism, dysmenorrhea, neuralgia, gout, sciatica and lumbago, as well as for the lightning pains of locomotor ataxia, there can be no quicker and more lasting relief obtained than by the administration of antikamnia and codeine tablets.

Imagine an intelligent physician trying to treat the diseases mentioned below with the various impotent means of the pharmacopeia and physiological therapy when he might depend on antikamnia! We quote again:

> As a Pain Reliever.—In headache, cephalalgia, hemicrania, migraine [some other words might have been thrown in so as still more to emphasize the headache business], myalgia, coryza, la grippe and its sequelæ, the lightning pains of locomotor ataxia and all pains due to irregular menstruation.
>
> As an Anodyne or Sedative.—In alcoholic delirium, indigestion, cardialgia, gastralgia, dyspepsia, hysteria, insomnia, inebriety, carsickness, sea-sickness, worry and sightseer's fatigue.
>
> As an Antipyretic.—In typhoid, intermittent, puerperal and malarial fevers, bronchitis, pneumonia, pleurisy, and tuberculosis.
>
> As an Anti-Neuralgic.—In acute or chronic neuralgia, facial neuralgia, earache, pain about the teeth, angina pectoris, neurasthenia, palpitation, pains of locomotor ataxia and sciatica.
>
> As an Anti-Rheumatic.—In acute or chronic rheumatism and gout, fever and pleurodynia.
>
> There is no remedy so useful and attended with such satisfactory results as antikamnia tablets in the treatment of melancholia with vasomotor disturbances, anemic headaches, emotional distress, and active delusions of apprehension and distrust. They increase arterial tension and promote digestion, as well as being particularly serviceable in relieving the persistent headache which accompanies nervousness.
>
> In neurasthenia, in mild hysteroid affections, and in the various neuralgias, particularly ovarian, and in the nervous tremor so often sen in confirmed drunkards, they are of peculiar service. In angina pectoris this drug has a beneficial action; it relives the pain and distress in many cases, even when amyl nitrite and nitroglycerin have failed entirely. In pseudo-angina, frequently observed in hysterical women, its action is all that can be desired.
>
> Patients who suffer from irritable, weak, or palpitating heart, needing at times a pain reliever, can take antikamnia tablets, without untoward after-effects, knowing that the heart is being fortified. In delirium tremens, they relieve when there are great restlessness, insomnia, the general lowering of the nerve power.
>
> Only the vivid picture of a crisis in locomotor ataxia, or the agony of a true migraine, can impress the observer with the full value of this pain reliever.

The following testimonials are from physicians:

Dr. Caleb Lyon, an old Bellevue practitioner, in referring to antikamnia and codeine tablets, says:

> In my practice they accompany the maid from her virgin couch to her lying-in chamber, assuaging the perplexities of maidenhood and easing the trials of maternity with most gratifying results. I earnestly hope that the proprietors of this valuable remedial agent will keep it up to its present standard of purity and excellence.

Dr. Walter M. Fleming, A.M., M.D., New York City, writes:

> . . . . With all the experience of more than a quarter of a century, in the treatment of winter cough, and all its complications of laryngeal, bronchial and pulmonary irritability, dyspnea, asthmatic spasms, and finally whooping cough—usually the most persistent and tenacious of all these membranous maladies—I find no one remedy more strongly indicated, or which yields more prompt and satisfactory results than antikamnia and heroin tablets,

> composed of antikamnia 5 grains and heroin hydrochloride 1/12 grain. . . . Result; a prompt and efficient expectorant, at once relaxing the harsh and rasping cough, releasing the tenacious, sticky and gelatinous mucous which is soon readily expectorated, while the soothing influence of the antikamnia is at once manifested, greatly to the comfort and contentment of the patient. . . . Independent of the fact of the direct applicability of this remedy to the various membranous maladies of the lungs, bronchi, fauces and nose, it proves also, an invariable remedy in all febrile cases where anodyne is required. This, together with its analgesic and antipyretic merits eminently qualify this combination for a responsive agent in the treatment of nearly all the numerous febrile attacks characterized by pain, nervousness, insomnia and their accompanying symptoms.

"Antikamnia and Quinin."

If there is any virtue in the particular combination known as "antikamnia," a physician prescribing the tablets supposed to contain combinations of "antikamnia" and some other drugs should have some guarantee that they contain those remedies. Take, for example, the tablets advertised and sold as "antikamnia and quinin." It might reasonably be supposed that the tablets contained the combination known as "antikamnia;" this, however, seems not to be the case. Previous analyses, as published by us, have shown that antikamnia contains approximately 20 per cent. of sodium bicarbonate, yet two chemists, working separately, have been unable to find this ingredient in the tablets advertised and sold as "antikamnia and quinin." Are we to understand, therefore, that the manufacturers do not consider the bicarbonate of sodium of importance in their preparation, antikamnia; or are they guilty of misrepresentation, and of misleading physicians in omitting this constituent from their product antikamnia when that is combined with the bisulphate of quinin? The above statement regarding the omission of bicarbonate of sodium from the quinin combination may be verified by any physician who desires to make a few simple chemical tests—carbonic acid is not given off when the tablets are treated with dilute acids, as would be the case if sodium bicarbonate were present. Further, while the ordinary "antikamnia" contains no constituent not soluble either in water or in chloroform, and while quinin bisulphate is readily soluble in water, the tablets said to contain antikamnia and quinin bisulphate, when treated successively with water and with chloroform, leave a residue of more than 18 per cent.

One of the chemists who analyzed the preparation for us, in commenting on this in a letter, says: "The matter which is insoluble in water, alcohol or in chloroform, i. e., the substance which is neither 'antikamnia' nor quinin bisulphate, amounts to more than 18 per cent. in 'antikamnia and quinin bisulphate tablets.' The tablets weigh close to five grains and are said to contain 2.5 grains each of antikamnia and quinin bisulphate. How is this possible when each tablet contains almost one grain of foreign substance (chiefly starch)?"

Further comment is superfluous. We have presented facts to our readers and leave them to draw their own conclusions.

Salacetin and Sal-Codeia (Bell).

Some time ago we wrote to Messrs. Bell & Co., calling their attention to the fact that we had made an examination of their product, salacetin, and that as a result of such examination it was found to be a mixture, which did not coincide exactly with their description of it. They replied that "our description of salacetin is correct and that we have nothing more to impart except that any one publishing any different formula from that given in our circulars will be held responsible by us."

The description they give is as follows: "Prepared by the interaction, with heat, of salicylic acid, glacial acetic acid, and purified phenylamine."

This sounds very scientific, but when we remember that acetanilid is a result of the action of glacial acetic acid on phenylamine—anilin—their description is cute, to say the least. Of course, there is "interaction with heat" when salicylic acid is combining with bicarbonate of sodium to form salicylate of sodium. Further, there is, no doubt, some "interaction with heat" when the substances are rubbed together in mixing them and when they are going through the mill to form tablets, not to mention the heated imagination of the promoters of this "synthetic."

The following, taken from the advertising literature furnished by the manufacturers and distributed by them, is quoted to show the claims made for this preparation:

> "Salacetin is free from Toluodine and produces no harmful cyanosis." In the treatment of Acute Bronchitis, Grippe, Influenza, Tonsillitis, Lithemic Headaches, Rheumatism and Neuralgias, it relieves pain, reduces inflammation and abnormal temperature, and eliminates uric acid [everything eliminates uric acid nowadays, it ought to be all "eliminated" soon] more quickly and thoroughly than the salicylates, and without causing depression or stomachic or renal irritation.
>
> "Have personally interviewed thousands of physicians, including every prominent one in the East, and can honestly state that we have never known of anything at once so efficient and so unobjectionable in the removal of rheumatic and neuralgic pain and other symptoms of the uric-acid accumulation." "La Grippe and Acute Bronchitis it relieves pain and coughing, reduces inflammation and temperature, makes the patient comfortable and checks the progress of the disease. In Tonsillitis its action is specific." "In Acid Cystitis, it neutralizes acidity, reduces inflammation and removes irritation." "In Dysmenorrhea it relieves pain and congestion with no hallucinations, constipation or danger of a drug habit."
>
> "In Dysmenorrhea and Ovarian Neuralgias try Sal-Codeia Bell. It will relieve the pain as well as morphia. It will not check any secretions, induce any habit, cause any depression or inconvenience of any kind."

This is all the space we can give to reading notices this week.

Of course, it is well understood that acetanilid is a valuable remedy in many instances, if used with caution and when indicated. It certainly has some therapeutic value. There is no doubt that it relieves pain of various kinds. It is to be presumed that combining salicylate of sodium with it will have certain beneficial effects in certain rheumatic conditions, on the supposition that salicylate of sodium and acetanilid are both used with more or less success in certain of these conditions. Also, the combining of bicarbonate of sodium, carbonate of ammonia, caffeine, citric acid, one or several of these, may result in a fairly good combination, but these combinations can be found in the list of preparations of all our large manufacturing pharmaceutical houses, which supply them at one-tenth the cost of these secret remedies. The physician in using these preparations put out by reputable, recognized manufacturing pharmaceutical houses, not only is prescribing preparations that are non-secret, but is using remedies that cost one-tenth as much as the secret preparations, which are exploited under fanciful names and pushed by ridiculous claims.

Patent Medicines in Venezuela.

United States Consul Hurst, La Guaira, Venezuela, reports to the Department of Commerce and Labor as follows:

"A measure recently promulgated places in force a regulation of the Association of Physicians of Venezuela whereby sales of secret or patent medicines, unless formally recognized in Venezuela, are to be prohibited, although they may have the approval of foreign medical faculties. Failure to meet the requirements will subject the offenders to the penalties of the law. A permanent commission has been appointed to examine and classify secret or patented remedies. Every manufacturer wishing to sell medicinal preparations in Venezuela must make a statement, in legal form, setting forth: (1) The name of the remedy (2) the full formula, and (3) the dose prescribed. Two samples, accompanied by the foregoing particulars, shall be submitted to the commission. The manufacturer may appoint by letter, if necessary, a local representative to treat with the commission. For each certificate permitting the sale of a medicine a tax of $3.86 must be paid.

"Four months will be allowed foreign and two months domestic manufacturers in which to comply with these requirements. When this time is past the custom-house will place, for two months, importations of this kind in class 5 of the tariff, paying a higher duty, during which period the preparations may still be brought before the commission. After this they will be put on the list of prohibited articles. The custom-house will continue their examination and appraisement as heretofore. New secret or patent medicines, compounded after the termination of the time given, may be submitted for examination on fulfilling the requisite formalities. All preparations allowed sale will bear an authoritative inscription to that effect on the wrappers."

Correspondence

Was the Schoolmaster Abroad?

Woodlawn, Kan., June 20, 1905.

To the Editor:—I note with "laughter akin to tears" the article in The Journal, June 17, by "An Examiner," under the above caption. This matter would be far more laughable were it not so serious. Would it not be eminently proper and just toward all concerned to divulge the name of any institution responsible for the addition to the profession of such graduates as this one? Why talk of medical ethics when, for for fear of injuring the business of some diploma mill or of incurring the displeasure of those connected therewith, we remain quiet and allow impositions like this to be perpetrated, unheralded to the profession? Publicity in such instances as this would do more toward "regulating" medical schools of questionable repute and methods than all the state and medical society laws and resolutions that have ever been enacted. We are under no obligations whatever to a school that has no more regard for medical ethics, the medical profession and humanity in general than to confer the degree of M.D. on a man who thinks the dose of hyoscin hydrobromate is "a half a teaspoonful." The sooner we are rid of such schools the better, and we will not rid ourselves of them by dealing with them gently.

W. L. Shelton, M.D.

Smallpox Hospitals and Air-borne Contagion.

Philadelphia, June 17, 1905.

To the Editor:—Referring to a recent editorial in The Journal concerning the observations of some Liverpool physicians concerning the great prevalence of smallpox cases during an epidemic in the territory immediately surrounding the smallpox hospital, as compared with territory some distance from the hospital; referring also to our subsequent correspondence on this matter, and your statement in the editorial that there were but few, if any, contagious disease hospitals located in the built-up portions of cities in the United States, it may interest you to know that the only hospital of this kind in this city is situated in the heart of the residential neighborhood and that during a recent epidemic of smallpox a very large proportion of the cases occurred within a very short distance of the hospital building, thus supporting in a very practical way the experience of the Liverpool physicians.

H. Brooker Wells, M.D.

Mutual Misunderstandings Among Medical Men.

Greenfield, Mass., June 19, 1905.

To the Editor:—Apropos of your editorial in The Journal, June 17, on the above subject, I would call your attention to the recent address delivered by Professor Barker to the Massachusetts Medical Society on "Methods in Medicine," wherein he brings out very clearly the fact that no true and lasting results can be wrought in medicine unless "theory and practice can be brought into conjugal relationship;" also to my own remarks in the introduction to my article on "Ocular Vertigo," read at the same meeting, urging the use of simpler language and a closer co-operation between the specialist and the general practitioner.

Benjamin P. Croft.

Association News

Missouri Valley and Minnesota Trains to Unite.

Arrangements have been completed to have the Pullmans of the Missouri Valley special and those of the Minnesota medical societies' special run from Yellowstone Park to Portland in one train with stopovers as follows: Spokane, two hours; Seattle, seven hours; Tacoma, eight hours.

Marriages

Joseph R. Luten, M.D., to Mrs. Lily Adams, both of Fulton, Ky., June 7.

J. I. Rathburn, M.D., to Miss Nettie Whitt, both of Russell, Ky., June 4.

F. N Gordon, M.D., to Miss Louisa Isenman, both of St. Louis, June 7.

Edgar H. Jones, M.D., to Miss Clara Baskin, both of Eldora, Iowa, June 15.

John Lyon, M.D., to Miss Emma Hill, both of Ninety-Six, S. C., June 14.

G. N. Thomas, M.D., to Miss Osa Drummond of Bellington, W. Va., June 7.

Harry G. Hardt, M.D., Hospital, Ill., to Miss Beilfus of Chicago, June 21.

Alanson Weeks, M.D., to Miss Belle Harmes, both of San Francisco, June 7.

Claude F. Fleming, M.D., to Miss Lois Eby, both of Elkhart, Ind., June 20.

Edwin R. Dean, M.D., to Miss Bessie Stover, both of South Bend, Ind., June 23.

Walter N. Sharp, M.D., to Miss Henrietta J. Hill, both of Indianapolis, June 7.

Fitzhugh H. Wolford, M.D., to Miss Bettie Bush, both of Allen, Texas, June 6.

Ralph L. Taylor, M.D., to Miss Katherine Mark, both of Denver, Colo., June 8.

Cyril Haas, M.D., to Ruth M. Dietz, M.D., both of Ann Arbor, Mich., June 12.

E. M. Stewart, M.D., Imperial, Neb., to Miss Hallie Shure of Clinton, Ill., June 8.

Ada McNeil, M.D, Des Moines, Iowa, and S. D. Gordon of Calcutta, India, June 21.

Ernest Thierman, M.D., Horton, Iowa, to Miss Sara Arns of Waverly, Iowa, June 7.

Frederick R. Hyslop, M.D., to Miss Lillian Morton, both of Whitewater, Wis., June 14.

Guthrie McConnell, M.D., to Miss Genevieve Knapp, both of St. Louis, Mo., June 10.

Otto Rangvald Olsen, M.D., to Miss Mary Murray, both of St. Charles, Minn., June 21.

Thomas F. Fitzgerald, M.D., to Miss Nellie McClain, both of Knoxville, Tenn., June 14.

E. Oscar Devlin, M.D., Verdery, S. C., to Miss Mae Donalds of Greenwood, S. C., June 21.

Samuel Ashby Grantham, M.D., to Miss Blanche Burnett, both of Joplin, Mo., June 21.

Henrietta M. Dougherty, M.D., to Mr. Jeremiah Trexler, both of Philadelphia, June 22.

John M. Shaunty, M.D., Springfield, Ky., to Miss Carrie Coleman of Danville, Ky., June 8.

William Ruston Davidson, M.D, to Miss Helen Chick, both of Evansville, Ind., June 22.

Frank Hull, M.D., Maple Ridge, Mich., to Miss Estella Kannell of Turner, Mich., June 1.

Reginald H. Cleary, M.D., to Miss Anna L. Murphy, both of Mount Ephraim, Ohio, June 8.

Calvin William Knowles, M.D., to Miss Cornelia Curtis, both of San Francisco, Cal., June 7.

Frank M. Mahin, M.D., Worden, Kan., to Miss Margaret Benjamin of Newton, Kan., June 13.

Elias G. Roos, M.D., Scranton, Pa., to Miss Edith Hirschman of Binghamton, N. Y., June 14.

J. T. Shelland, M.D., Minneapolis, to Miss Etta G. Carpenter of Sauk Center, Minn., June 14.

William Cloyd Guss, M.D., Hannibal, Mo., to Miss Maie Cecilia Carroll of Barry, Ill., June 7.

W. Edwards Schenck, M.D., Cincinnati, to Miss Julia Maud Homer of New York City, June 18.

Edgar A. Doan, M.D., Mishawaka, Ind., to Miss Anna Adel Baron of South Bend, Ind., June 20.

Harold N. Moyer, M.D., to Mrs. Eleanor E. Myler, both of Chicago, at St. Joseph, Mich., June 8.

John A. Collins, M.D., East St. Louis, Ill., to Miss Mollie B. Marshall of Lebanon, Ill., June 21.

Will L. Hoffman, M.D., Calloway, Neb., to Miss Meliss Morris of Charles City, Iowa, June 7.

J. Dawson Reeder, M.D., Baltimore, to Miss Albina Cook of Green Spring Valley, Md., June 28.

Earl Raymond Snyder, M.D., Troy, Ind., to Miss Floretta Marie Smith of Cannelton, Ind., June 7.

John H. Mayer, M.D., Halifax, Pa., to Miss Mary Irene Lininger of Chambersburg, Pa., June 14.

Ernest D. Mabry, M.D., Llano, Texas, to Mrs. Gussie Landers Black of Marquez, Texas, June 15.

James Thomas Mitchell, M.D., to Miss Myrtle Edith Bailey, both of Middletown, Conn., June 7.

Charles A. Goodrich, M.D., Hartford, Conn., to Miss Margaret Cutter of Brooklyn, N. Y., June 7.

Benjamin H. Southworth, M.D., to Miss Kathryn Nesbitt, both of Schoolcraft, Mich., June 14.

George Hubert Lynch, M.D., Traverse City, Mich., to Miss Una Palmer of Big Rapids, Mich., June 23.

Charles Edward Iliff, M.D., Cincinnati, to Frances Jessie Haag, M.D., of Edwardsville, Ill., June 22.

Loomis W. Fee, M.D., Fort Collins, Colo., to Miss Amy Francelle Avery of Boulder, Colo., June 10.

Arthur E. Gillette, M.D., Cincinnati, to Miss Mary Davenport of Walnut Hills, Cincinnati, June 14.

Joseph William James, M.D., to Miss Charlotte Cecile Shepstone, both of Sacramento, Cal., June 15.

Ralph Clark Apted, M.D., Grand Rapids, Mich., to Miss Susan Joanna Fisher, at Indianapolis, June 15.

George Wightman Kirby, M.D., Millersburg, Ind., to Miss Lottie May Porter of Galesburg, Ill., June 17.

Charles James Fox, M.D., Wethersfield, Conn., to Mrs. Ennice Lord Linsley, at Norwich, Conn., June 22.

Foster G. B. Raynale, M.D., Birmingham, Mich., to Miss Edna M. Brooks of Norwood, Cincinnati, June 7.

Edward Wood Allison, M.D., New York City, to Miss Lydia Winterhalter of Milwaukee, Wis., June 14.

Charles Lester Curtiss, M.D., Manchester, N. H., to Miss Lola Norton Clancy of New Haven, Conn., June 23.

James Manning Kent, M.D., Putnam, Conn., to Miss Florence Seney Cornell of Mamaroneck, N. Y., June 14.

Frank William Green, M.D., Cranbrook, B. C., to Miss Lillian Barbara Staples of Stillwater, Minn., June 8.

Bruce Taylor Best, M.D., Arlington Heights, Ill., to Miss Edith Genevieve Stevens of Jefferson, Wis., June 14.

Zenon A. Laooie, M.D., Manchester, N. H., to Miss Alma Marie Merville Rampon of Fall River, Mass., June 8.

Ralph Raymond Harris, M.D., Cardington, Ohio, to Miss Anna Salemma Thompson of Columbus, Ohio, June 8.

Harrie Van Ness Frink, M.D., Burlington Flats, N. Y., to Miss Flora May Henry of Richfield Springs, N. Y., June 7.

William Nelson MacChesney, M.D., Chicago Heights, Ill., to Miss Harriet A. Darnell of Storm Lake, Iowa, June 21.

Hugh Montgomery Lokey, M.D., Atlanta, Ga., to Miss Rebekah Crawford Hamilton of Birmingham, Ala., June 21.

William N. Gassaway, M.D., Wicomico County, Md., to Miss Martha Brown of Ellicott City, Md., at York, Pa., in April.

Franklin T. Poehler, M.D., Minneapolis, Minn., to Miss Harriet Anna Wildes of Riverside, Cal., at Mankato, Minn., June 21.

John G. O'Meara, M.D., Olneyville, Providence, R. I. to C. Elizabeth McGovern, M.D., of Providence, R. I., at Dorchester, Mass., June 14.

Deaths

Benjamin W. McGalliard, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia 1889, of Trenton, N. J., a member of the American Medical Association and of the Mercer County (N. J.) Medical Society; formerly health inspector and city physician of Trenton; a member of the medical staffs of Mercer and St. Francis hospitals, and physician to the Trenton Children's Home, died June 14 at the Friends' Sanitarium, Philadelphia, after an illness of several months, aged 43. Mercer County Medical Society sent a floral tribute, and at a special meeting June 16 adopted resolutions expressive of regard and regret.

Louis A. Prefontaine, M.D. Department of Medicine of the University of Pennsylvania, 1892, a member of the American Medical Association, Massachusetts Medical Society, Hampden District Medical Society, American Opththalmological Society; and New York Ophthalmological Society; ophthalmologist, otologist and laryngologist to Mercy Hospital, and ophthalmologist to Springfield Hospital, a prominent specialist on diseases of the eye and ear, of Springfield, Mass., died at Springfield Hospital June 19, after an illness of six weeks from Bright's disease complicated with abscess of the muscles of the chest, aged 39.

James Alexander Close, M.B. Toronto (Ont.) University, 1873; Royal College of Physicians and Surgeons, Kingston, Ont., 1873; Royal College of Physicians, Edinburgh, 1880; Royal College of Surgeons, Edinburgh, 1880; a fellow of the Royal Microscopical Society; professor of pathology and bacteriology in the Barnes Medical College, St. Louis; an expert with the revolver, died at his office in St. Louis, June 15, aged 63. The coroner's verdict read: "Death from gunshot wound in the abdomen, sustained in a manner unknown, but supposed accident."

Benjamin Franklin Showerman, M.D. New York University, New York City, 1886, a member of the American Medical Association, New York State Medical Association and Genesee County Medical Society, twice president of the Batavia (N. Y.) Physicians' Club, died at the Batavia Hospital, June 15, 18 days after an operation for cancer of the stomach, aged 41. Resolutions of respect and condolence were adopted at special meetings by the Genessee County Medical Society, Batavia Physicians' Club and the Board of Trade.

Richard M. Fletcher, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1854; surgeon in the Confederate service during the Civil War; president of the Madison County Medical Society for several terms; sometime vice-president of the Medical Association of the State of Alabama and a member of the council for many years; one of the most prominent medical men of northern Alabama, died at his home in Madison, June 17, from senile debility, after a long illness, aged 74.

Thomas B. Steele, M.D. University of Maryland School of Medicine, Baltimore, 1844, assistant surgeon in the Navy until 1861, when, on account of his sympathy with the Confederate cause, he resigned; a veteran of the Mexican war, and a medical officer in Commodore Perry's expedition to Japan in 1853 and 1854, died at his home in Cambridge, Md., June 22, from senile debility, aged 83.

William E. Parkhurst, M.D. Gross Medical College, Denver, 1899, a member of the American Medical Association, president of the Chaves County (N. M.) Medical Society and second vice-president of the New Mexico Territorial Medical Society, an authority on the treatment of tuberculosis, died from that disease at his home in Roswell N. M., after a long illness, aged 44.

Clarence E. Bizzelle, M.D. Medical Department of the University of Nashville and Vanderbilt University, Nashville, Tenn., 1893, of Monroeville, Ala., health officer of Monroe County, died at the Providence Infirmary, Mobile, from pneumonia, following appendicectomy, June 13, after an illness of three weeks aged 32.

Warren Schoonover, Jr., M.D. Bellevue Hospital Medical College, New York City, 1897, died June 12 in New York City. He was a member of the Medical Association of the Greater City of New York, the New York County Medical Society, Kings County Medical Society and the New York Medico-Surgical Society.

George Philip Fenwick, M.D. National Medical College, Washington, D. C, 1859, a member of the Medical Society of the District of Columbia, Washington Gynecological and Obstetrical Society, and Medical Association of the District of Columbia, died at his home in Washington, June 14.

John B. Enright, M.D. University of Louisville Medical Department, 1885; for seven years professor of anatomy, Kentucky School of Medicine, Louisville; ex-alderman of Louisville, died from nephritis at Sts. Mary and Elizabeth Hospital, Louisville, June 20, after a long illness, aged 48.

Thomas B. Gunn, M.D. Missouri Medical College, St. Louis, 1874, of North Yakima, Wash., for many years secretary of the state fair board, died at St. Elizabeth's Hospital, North

Yakima, June 14, a few hours after an operation for the relief of intestinal obstruction, aged 59.

William Henry Lewis, M.D. Harvard University Medical School, Boston; Bellevue Hospital Medical College, New York City, 1865; surgeon in the Army during the Civil War, formerly of Brooklyn N. Y., died suddenly at Santa Barbara, Cal., April 21, from myocarditis, aged 63.

Edwin P. Bigelow, M.D. University of Vermont Medical Department, Burlington, 1897, of Wolcott, Vt., died at the home of his parents in Stowe, Vt., from tuberculosis, June 12, after an illness of more than a year, aged 39.

Thomas Sanderson, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1863, died at his home in Kent, Ind., June 18, from heart disease, after an illness of two years, aged 67.

Martha J. French, M.D. Central College of Physicians and Surgeons of Indianapolis, 1882, of Indianapolis, died at the City Hospital in that city, June 15, from spinal disease, after an illness of three years.

John Morgan Ramsey, M.D. St. Louis College of Physicians and Surgeons, died at his home in Silver Lake, Kan., March 19, from laryngeal and pulmonary tuberculosis, after an illness of one year, aged 41.

James H. Campbell, M.D. Chicago, a practitioner of Rock and Walworth counties, Wis., for 24 years, died from cerebral hemorrhage at his home in Allen Grove, Wis., June 13, aged 73.

Thomas A. Bishop, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1883, of Bonner's Ferry, Idaho, died at St. Luke's Hospital, Spokane, Wash., June 14, aged 46.

William F. Reus, M.D., a pioneer physician of Holland, Mich., formerly of the Netherlands and the United States Navy, died at Gand Haven, Mich., June 14, aged 83.

Charles C. Norman, M.D. Long Island College Hospital, Brooklyn, 1864, died at his home in Hawesville, Ky., June 17, from dropsy, after an illness of several months.

Max Augsburger, M.D. New York City, 1880, died at his home in Brooklyn, June 15, twelve days after having been kicked in the head by a horse, aged 44.

Albert D. Leech, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1885, died at his home in Richmond, Va., June 11, after an illness of several months.

William C. Miller, M.D. Miami Medical College, Cincinnati, 1877, died at his home in Hamilton, Ohio, June 20, after an illness of several months, aged 58.

William C. Barnes, M.D. Medical College of Indiana, Indianapolis, 1874, died suddenly from heart disease, in his office at Marion, Ind., June 20, aged 55.

Charles Frank Fisler, M.D. Jefferson Medical College, Philadelphia, Pa., 1895, died at his home in Clayton, N. J., from typhoid fever, June 21.

William C. Johnson, M.D. Rush Medical College, Chicago, 1869, of Springfield, Ill., died at St. John's Hospital in that city, June 13, aged 66.

Samuel E. Johnson, M.D. (Years of Practice, Pennsylvania), a veteran of the Civil War, died at his home in New Salem, Pa., June 20, aged 61.

David White, M.D. Cincinnati, 1859, a practitioner of Ithaca, N. Y., for more than 40 years, died at his home in that city, June 17, aged 70.

Solomon J. Rhoads, M.D. St. Louis Medical College, 1864, died at his home in Beaver Dam, Ky., June 12, from senile debility.

Milton F. Schell, M.D. College of Physicians and Surgeons of Baltimore, 1887, died at his home in Baltimore, June 17.

Andrew B. Bishop, M.D. Illinois, 1883, of Los Angeles, Cal., died sudenly from heart disease in that city, June 14.

Daniel P. Neihart, M.D. Heidelberg, Germany, 1830, died at his home in Nebraska City, Neb., June 18, aged 83.

Abraham Westervelt Tompkins, M.D. New York City, 1883, died at his home in New York City, June 5.

Death of von Mikulicz.

Johann von Mikulicz-Radecki, M.D., professor of surgery at Breslau since 1890 and one of the leading surgeons of the world, died June 17, aged 55. He was born at Czernowitz, in Austria, and was Billroth's assistant at Vienna, and later professor of surgery at Cracow and Königsberg, before being called to Breslau. With Naunyn, he founded the able *Mitteilungen a. d. Grenzgebieten der Med. u. Chirurgie* in 1896, and also co-operated in the publication of von Bruns' *Beiträge zur klin. Chirurgie.* The list of his publications is a long one, many of them bearing on the perfecting of antisepsis, surgical treatment of diseases of the stomach, artificially increasing resistance of peritoneum, surgery of the pancreas, etc. His name is connected with operations for extirpating the tonsils, for prolapse of the rectum, for amputation at the ankle joint, pylorectomy, etc., and the communications from his clinic have always attracted the attention of surgeons the world around. Among the latest was the announcement in regard to Sauerbruch's pneumatic cabinet for operations inside the thorax. Mikulicz made many friends during his visit in America in 1903 and held clinics in some of the larger cities. He was an honorary member of the American Medical Association and held honorary degrees conferred by the universities of Edinburgh, Glasgow and Pennsylvania, and was an honorary member of many other scientific societies at home and abroad.

Book Notices

A Nurse's Guide for the Operating Room. Second Edition. Enlarged and Revised. By N. Senn, M.D., Ph.D., LL.O., C.M. Cloth. Pp. 204. Price, $1.75 net. Chicago: W. T. Keener & Co.

This book, which has so soon reached a second edition, is a real guide for the nurse for operations. It gives directions in detail regarding preparations for operation, and also contains enough general information to give the nurse a clear idea of what she should know of surgery, of asepsis and antisepsis. Lists are also given of the instruments required for the different major and minor surgical operations.

Addresses and Other Papers, by W. W. Keen, M.D., LL.D., F.R.C.S. Illustrated. Cloth. Pp. 441. Price, $3.75 net. Philadelphia: W. B. Saunders & Co. 1905.

This book contains occasional addresses and papers, delivered and read during the past thirty years. The first paper is "The Early History of Practical Anatomy," being the introductory address at the Philadelphia School of Anatomy, 1874. This is an especially valuable paper from the historical point of view and shows considerable research. The illustrations accompanying it are excellent. The address on the "History of the Philadelphia School of Anatomy and Its Relations to Medical Teaching," was delivered at the dissolution of that school, and is of special interest to old Philadelphia medical students. The other papers are: "Our Recent Debts to Vivisection," (1885); "Recent Progress in Surgery," (1889); "The New Era in Medicine and Its Demands on the Profession and the College," (1890); "The Real Rewards of Medicine," (1893); "Medicine as a Career for Educated Men," (1893); "Vivisection and Brain Surgery," (1893); "Medical Education," (1894); "The Advantages of an Academic Training for a Medical Career," (1896); "Literary Methods in Medicine," (1897); "Address on the Unveiling of the Statue to Gross," (1897); "The Address in Surgery of the American Medical Association," (1897); "The Debt of the Public to the Medical Profession," (1899); "Endowment of the Medical Colleges" (being the president's address of the American Medical Association, 1900); "The Ideal Physician," (1900); "Address at the Royal College of Surgeons," (1900); "The Progress of Surgery in the Nineteenth Century," (1901); "The Mission of the Medical College," (1901); "The Duties and Responsibilities of Public Medical Institutions," (1903); "Qualities Essential to Success in Medicine," (1903); "The Need for Increased Endowment for Medical Institutions," (1904); "Age and Youth in Medicine," (1904), and "Surgical Reminiscences of the Civil War," (1905). A glance at the above shows that a wide range of subjects is covered, and those who know the author need not be told that each paper contains important information or good, sound advice or both.

Miscellany

The Evils of Exhaustion of Childhood.—Intemperance and crime make heavy drafts on the exchequer of organized society or government. But what is in most cases the producing microbe of intemperance? Is it not disordered nerves? Crime, again, has come to be known as depending on physical conditions of body and mind. Exhaustion of childhood engenders disorder in young manhood and womanhood, which produces intemperance and all its consequent evils.—Rabbi Hirsch.

Wood Alcohol Has No Place in Pharmacy.—We again protest against the use of such a substance in pharmacy until after recognized authority gives pharmacists the right to use it. No pharmacopeia of any country, no dispensatory of any land, no materia medica extant, sanctions wood alcohol in any place whatever, be it as a solvent, a menstruum, or a final constituent. Until such privilege is given, or until physicians prescribe it, we contend that this poisonous liquid has no place in the pharmacy of medicine.—Lloyd, in *Eclectic Medical Journal.*

Camphor Bromid and Genito-Urinary Disturbances.—Bourneville calls attention to the efficacy of camphor bromid in reducing pain and in regulating function in the genito-urinary organs. He relates in his journal, *Progrès Médical*, for June 3, a number of instances showing that it reduces the tendency to priapism, dysuria, neuralgia of the bladder and similar troubles. He regards it as indicated in inveterate onanism, commencing with two capsules a day of .2 gm. each, not surpassing a daily dose of six capsules. He further recommends it in vaginismus, both in capsules and for local treatment in the form of an ointment.

Laymen and Physicians.—Dr. J. N. McCormack, in an address at Johnstown, Pa., before a general audience, said that on laymen, in the way of proper regard and adequate support, rests in large measure the standing of the medical profession. They can not afford to have a poor physician in the community, because as such he is endangering the health or life of some one. The clergyman, the editor, the lawyer, the banker, owe it to their own families to aid in making a better physician of every practitioner within their reach, or outside of it. They owe support to legislation which will reduce the amount of disease, for nearly all of the acute diseases, declared Dr. McCormack, are preventable by proper measures.

Purulent Ophthalmia in Mexico.—J. Ramos publishes a statistical study of blindness in Mexico in the *Anales de Oftalmologia* for May. The proportion of the blind to the total population is about 10 per cent., Mexico thus occupying the fifth place among nations. Finland, Norway, Hungary and Spain lead with a proportion of from over 22 to over 11 per cent. England follows with 9.85 per cent., France with 9.48, and Germany with 8.79 per cent. The American statistics are not included in his list. Ophthalmia neonatorum is responsible for 28 to 30 per cent. of the cases of blindness in Mexico, and he makes an urgent appeal for the establishment of a central committee to educate the public in regard to the necessity for treatment and the means of prophylaxis of purulent ophthalmia.

Research on Animals in Scientific Institutes.—At the opening of the new Institute of Physiology at Prague, Professor Gad spoke on the subject of research on living animals in scientific institutes. He dwelt on the constant endeavor in such institutions to reconcile the demands of science with those of humanity. "But," he continued, "the demands of science are imperative, and we are here to serve her. It is impossible for us to explain to outsiders the whys and wherefores of our acts. In experimental physiology the devotees of science must know how to avoid everything avoidable and, further, to keep absolutely everything connected with the science away from the gaze and ken of outsiders." The practice of this science does not brutalize; on the contrary, it has the opposite effect. One great difficulty that he has to contend with, he says, is that the attendants grow fond of laboratory animals and spoil those intrusted to their charge. Distorted and false accounts of what goes on in such institutes from what is allowed to leak out among the public are a great and unnecessary danger for independent scientific research. It is much more humane, on the whole, than it is credited with being.

Blue Light as an Anesthetic.—The Journal mentioned in 1903 that certain operators had found that blue light induced a sedative action amounting to actual anesthesia in some cases. Redard of Geneva has been systematically applying blue light as an anesthetic for some months, and the last *British Medical Journal* relates some of his experiences. All that is necessary is a sheet of blue sateen and a 1-candle power incandescent light enclosed in a blue globe. The sheet of blue sateen is thrown over the patient's head, enclosing also the light, and he is told to gaze fixedly at the light—the interval not more than 15 cm. The cloth is removed after two or three minutes, when the patient will be found in a condition of general anesthesia with dilated pupils. The anesthesia persists long enough for the performance of a short operation. Attempts to reproduce the phenomena with light of any other color than blue were always failures. Other physicians add confirmatory reports. Red light stimulates and excites to the point of irritation, while yellow light has a depressing action. Blue light is calming and produces a feeling of general well-being. Kaiser and Minin ascribe actual therapeutic value to it, and L. E. Schmidt in this country has been advocating it for cutaneous affections. He published a report on it in The Journal for 1904, xlii, page 590.

Leprosy.—The name of Dr. Juan Carrasquilla of Bogota has been connected with the serum treatment of leprosy for several years. His reputation has attracted such crowds of lepers to Colombia that the government has had difficulty in dealing with this influx of alien lepers. In a communication to be presented to the Third Latin-American Congress, to be held at Rio this year, he proclaims that his experience has convinced him more and more that leprosy is not contagious, like smallpox, etc., but that it is infectious, and that the infection is transmitted by vermin. The initial manifestation is a pustule, like the chancre of syphilis and the bubo of plague, and the discovery of this pustule enables an early diagnosis. Leprosy is not transmitted by secretions nor by air, water or direct contact, but requires the intermediation of vermin. Enforced isolation of lepers is, therefore, unnecessary, and is a cruel and inhumane relic of barbarism. Lepers should be received and treated in hospitals, and they should be induced to enter the hospitals by knowledge of the better care they receive there. Cleanliness of body and habitation and, above all, protection against vermin is the proper prophylaxis. Children should be trained in these ideas, and the public generally should be taught that this way lies health for self and friends. His pamphlet on the subject is published by Hernando Santos, Bogota.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

NORMAL SALT SOLUTION.

Washington, D. C., June 8, 1905.

To the Editor:—In The Journal, June 3, page 1794, you inform a correspondent that a normal salt solution is a 0.6 per cent. solution of sodium chlorid in water. I trust that I may be permitted to suggest that while this use of the term "normal" as applied to a salt solution of the strength named is very prevalent in the medical profession, yet such use is in decided disagreement with the significance of the term normal as applied to solutions in general and is contrary to the Pharmacopeia. The proper designation for this solution is "decinormal." The scheme of normal solutions is a system in use in analytical chemistry for certain purposes of utility and uniformity. A normal solution is defined by Billings as "one containing in one thousand cubic centimeters an amount of the active constituent just sufficient to combine with or to replace one gram of hydrogen." For monobasic aids and their salts (such as sodium chlorid) a normal solution is one in which the number of grams in the liter is equal to the molecular weight of the reagent. Thus a normal solution of potassium nitrate, the molecular weight of which is 100.93, is one containing 100.93 grams of KNO_3 in the liter; of sodium hydroxid (molecular weight 39.96), one containing 39.96 grams per liter; of hydrochloric acid (molecular weight 36.37), one containing 36.37 grams of HCl in the liter. Such is the system of normal solutions as universally used by chemists. As the molecular weight of sodium chlorid is 58.27, a normal solution of NaCl is one containing 58.37 grams in the liter. A solution of one-tenth this strength, containing 5.837 grams per liter, is a decinormal solution, and this designation is specifically applied to a solution of this strength in the U. S. Pharmacopeia (1890, page 498). A salt solution of 0.6 per cent. strength is practically a decinormal solution and should be so styled; to term it a "normal" solution, even though that usage is general among medical men, is solecistic and erroneous. The matter is perhaps not of practical importance, though it might be if a surgeon, calling on a professional chemist for a normal salt solution, should receive one of 6 per cent. strength and use it with evil results—in which case the chemist would not be in the least to blame. In the interest of exactness and uniformity of nomenclature, it would seem that the correct designation should be used. The application of the term "physiologic" to a 0.6 per cent. NaCl solution is also open to exception, as it is now becoming generally understood that a solution of this strength is not isotonic with human blood serum, and is hence not "physiologic" in this sense. A 0.9 per cent. solution is more nearly isotonic and "physiologic." and could be used in unlimited quantities without injuring the blood cells, which is not the case with a 0.6 per cent. solution. J. B. Nichols.

Answer.—Among physicians a .6 to .75 per cent. solution of sodium chlorid in sterile water is generally known and spoken of as a physiologic or normal salt solution. The term "physiologic" is probably preferable to "normal," as there is less likelihood of the pharmacist confusing it with the normal solution of chemistry mentioned by our correspondent. Physiologic salt solution is the term generally employed abroad in designating this 0.6 per cent. salt solution.

NEW TECHNIC FOR CIRCUMCISION.

Chicago, June 21, 1905.

To the Editor:—In The Journal, June 17, 1905, page 1949, Dr. Gardner asks whether the operation of circumcision as he describes it has ever been advised before. You state that the method is not described in any text-books. I have never seen the operation described in any work on surgery, but I evolved a technic similar to the one described, three or four years ago, and was just about to publish it when I saw an article in *Medicine,* illustrating exactly the same procedure. I have practiced this method of circumcision for several years, and have taught it to my students at the Chicago Policlinic. It is not applicable in children nor in adults where there is phimosis, but in cases in which the foreskin can easily be stripped beyond the glans without constriction this operation is superior to the older ones, for the following reasons:

1. Incision is at base of penis and the bandage can be more readily retained and is less easily soiled.
2. No superficial veins are cut and there is no edema to retard healing; also fewer painful erections.
3. The scar is practically invisible. William Hessert, M.D.

EXPULSION OF PLACENTA BEFORE BIRTH OF CHILD.

Albert, W. Va., June 6, 1905.

To the Editor:—Are cases of complete expulsion of the placenta before the birth of the child of common occurrence? If not of common occurrence, where can I find histories of such cases?

A. P. Butt, M.D.

Answer.—Expulsion of the placenta before the birth of the child in cases of placenta prævia is not extremely rare. Over fifty years ago Simpson collected 141 cases. In twin pregnancy, expulsion of the placenta of the first child sometimes occurs before the birth of the second. Prolapse of and the expulsion of a normally seated placenta before the birth of the child is very rare. A few cases of this kind have been reported since the time of Smellie. These have been collected and critically examined by Kayser in *Archiv für Gynecologie,* Volume 70.

BRITISH DEGREE IN CANADA.

Inhambane, East Africa, May 26, 1905.

To the Editor:—Is there a medical college in Canada that has authority to confer the L.R.C.P. and S. degree (Licentiate Royal College of Physicians and Surgeons) with recognition for it in England, on its graduates? If so, which college is it?

W. A. Backenstoe.

Answer.—No medical college in Canada can confer the licentiate degrees of the British colleges.

State Boards of Registration

COMING EXAMINATIONS.

Board of Medical Examiners, Central District, I. T., South McAlester, I. T., July 3. Secretary, B. W. Caldwell, Hugo.

Board of Medical Examiners of Arizona, Phoenix, Ariz., July 3-4. Secretary, A. Martin, Phoenix.

Utah State Medical Examiners, Salt Lake City, Utah, July 3-4. Secretary, R. W. Fisher, Salt Lake City.

North Dakota State Medical Examining Board, Grand Forks, July 5. Secretary, H. M. Wheeler, Grand Forks.

State Medical Examining Board of Washington, Seattle, Wash., July 5. Secretary, C. W. Sharples, Seattle.

State Medical Examining Boards of the Regents, State House, Concord, N. H., July 7-8. Regent, H. C. Morrison, Concord.

State Medical Board of the Arkansas Medical Society, Little Rock, July 11. Secretary, J. P. Runyan, Little Rock.

Rhode Island State Board of Health, State House at Providence, commencing at 5 a. m., July 11. Secretary, G. T. Swarts, State House, Providence.

Wisconsin Board of Medical Examiners, Park Hotel, Madison, Wis., July 11. Secretary, F. A. Forsbeck, Milwaukee.

State of Connecticut Medical Examining Board, City Hall, New Haven, Conn., July 11-12. Secretary, C. A. Tuttle, New Haven.

Maine Board of Registration of Medicine, State House, Augusta, Maine, July 11-12. Secretary, Wm. J. Maybury, Saco.

Board of Registration in Medicine, State House, Boston, Mass., July 11-12. Secretary, E. B. Harvey, Boston.

Vermont State Board of Medical Registration, Y. M. C. A. Hall, Burlington, Vt., July 11-12-13. Secretary, W. Scott May, Underhill.

Kansas State Board of Medical Registration and Examiners, State House, Topeka, Kan., July 12-13. Secretary, G. F. Johnston, Lakin.

South Dakota Board of Medical Examiners, Sioux Falls, S. Dak., July 12-13. Secretary, H. E. McNutt, Aberdeen.

Board of Medical Supervisors, Washington, D. C., July 13. Secretary, Wm. C. Woodward, Health Department, Washington.

California State Board of Medical Examiners, San Francisco and Los Angeles, Cal., July 19. Secretary, C. L. Tisdale, San Francisco.

State Board of Health of West Virginia, Charleston, W. Va., July 18-20. Secretary, H. A. Barbee, Point Pleasant.

State Board of Health of Illinois, the Great Northern Hotel, Chicago, July 19-21. Secretary, J. A. Eagan, Springfield.

Illinois May Report.—Dr. J. A. Egan, secretary of the State Board of Health of Illinois, reports the written examination held at East St. Louis, May 10-12, 1905. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of persons examined was 124, of whom 119 passed and 5 failed. The following colleges were represented:

College.	Year Grad.	Per Cent
PASSED.		
American Med. Coll., St. Louis	(1905)	82
Baltimore Med. Coll	(1901)	85
Creighton Med. Coll., Omaha	(1902)	81
Eclectic Med. Inst., Cincinnati	(1905)	81
Homeopathic Med. Coll., St. Louis	(1905)	81, 81
Johns Hopkins University	(1902)	88
Barnes Med. Coll., St. Louis (1904) 84; (1905). The grade of 78 was reached by one; 79, by four; 80, by one; 81, by two; 82, by one; 83, by two; 84, by one; 85, by four; 88 by one.		
College of P. & S., St. Louis (1905). The grades of 75, 78, 79 and 80 were reached by one each; 81, by two; 82, by four; 83, by four; 84, by four; 85, by two; 86, 87 and 88, by one each.		
Marion Sims Beaumont Med. Coll. (1904) 78, 79; (1905). The grades of 75 and 76 were reached by one each; 78, by three; 79, by two; 80, by four; 81, by seven; 82, by two; 83, by six; 84, by four; 85 by three; 86, by two; 87, by one; 88, by one; 89, by two; 90, by two; 91, by two.		
Washington University, St. Louis (1903) 83; (1905). The grades of 77, 80 and 82 were reached by one each; 83, by four; 84, by four; 85, by eight; 86, by four; 90, by one; 91, by one.		
FAILED.		
Barnes Med. Coll., St. Louis	(1905)	74
College of P. & S., St. Louis	(1904) 55; (*1905)	73
Marion-Sims Beaumont	(1905)	74, 74

* Second examination.

The general average attained by all representatives of Barnes Medical College was passed was 83; of College of Physicians and Surgeons, St. Louis, 82.6; of Marion-Sims Beaumont 82.6; of Washington University, 84.4.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers U. S. Army, week ending June 24, 1905:

Ebert, Rudolph G., surgeon, Woodruff, Chas. E., surgeon, and Carroll, James, asst.-surgeon, detailed to represent the Medical Department of the Army, at the annual meeting of the American Medical Association at Portland, Ore., July 11 to 14, 1905.

Patterson, Robert U., asst.-surgeon, assigned to duty with Co. B, Hospital Corps, Presidio of San Francisco, Cal.

Bradley, A. E., surgeon, assigned to duty at Fort Sheridan, Ill.

Snyder, Henry D., surgeon, granted three months' leave of absence.

Richard, Charles, surgeon, assigned to duty at Fort Jay, N. Y.

Ruffner, E. L., asst.-surgeon, assigned to duty at Columbus Barracks, Ohio.

Whitmore, E. R., asst.-surgeon, assigned to duty at Fort Jay, N. Y.

Boyer, Perry L., asst.-surgeon, assigned to duty at Fort Sam Houston, Texas.

Phalen, James M., assigned to duty at Fort Logan H. Roots, Arkansas.

O'Connor, R. P., asst.-surgeon, assigned to duty at Army General Hospital, Presidio of San Francisco, Cal.

Vose, Wm. E., asst.-surgeon, relieved from duty at Fort Logan H. Roots, Ark., and ordered to Fort Sheridan, Ill., for duty.

Richard, Charles, surgeon, granted thirty days' leave of absence.

Carter, Edward C., surgeon, granted ten days' leave of absence.

Bradley, A. E., surgeon, granted leave of absence for one month and fifteen days.

Wilson, Wm. H., asst.-surgeon, assigned to duty as attending surgeon and examiner of recruits, and as medical superintendent of the Army Transport Service, New York City, N. Y.

Godfrey, G. C. M., asst.-surgeon, relieved from duty as attending surgeon and examiner of recruits, and as medical superintendent, Army Transport Service, New York City, N. Y., and will retain station in that city until further orders.

Pierson, Robert H., asst.-surgeon, relieved from duty at Army General Hospital, Fort Bayard, N. M., and ordered to Fort St. Michael, Alaska.

Smart, Wm. M., asst.-surgeon, relieved from duty at Fort St. Michael, Alaska, and ordered to proceed to Seattle, Washington, and report to the Military Secretary of the Army for further orders.

Howard, D. C., asst.-surgeon, granted thirty days' leave of absence about July 1, 1905..

Kiersted, H. S., asst-surgeon, ordered to report to Lieut.Col. Geo. H. Torney, deputy surgeon general, president examining board, Army General Hospital, Presidio of San Francisco, Cal., Aug. 1, 1905, for examination to determine his fitness for advancement to rank of captain.

Phillips, John L., surgeon, ordered to proceed from Fort Jay, N. Y., to this city and report in person to the chairman of the Isthmian Canal Commission for duty with the commission on the Isthmus of Panama.

Le Wald, Leon T., asst.-surgeon, left San Francisco, Cal., on thirty days' leave of absence.

Peed, George P., asst-surgeon, granted thirty days' leave of absence.

Harvey, Philip F., asst-surgeon-general, left C. S. O., Department of the Lakes, Chicago, Ill., on thirty days' leave of absence.

Hartsock, F. M., asst.-surgeon, granted thirty days' leave of absence.

Roberts, Ernest E., contract surgeon, arrived at San Francisco, Cal., on S. S. *China*, for three months' leave of absence, from the Philippines Division.

Gardner, Fletcher, contract surgeon, arrived at San Francisco, Cal., on the transport *Thomas* for three months' leave of absence from the Philippines Division.

Bowman, Madison H., contract surgeon, arrived at Seattle, Wash., on transport *Dix* for three months' leave of absence from the Philippines division.

Hicks, John R., contract surgeon, arrived at Seattle, Wash., on transport *Dix* for annulment of contract.

Suggs, Frank, contract surgeon, arrived at San Francisco, Cal., from the Philippines Division, on the transport *Thomas* for treatment.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending June 24, 1905.

Chapman, R. B., asst-surgeon, orders of April 19, 1905, modified; ordered to Naval Station, Guam, L. I.

Hart, G. C., acting asst.-surgeon, detached from duty with the marine detachment at Dry Tortugas, Fla., and ordered home to wait orders.

DeLancy, C. H., P. A. surgeon, detached from the *Marblehead* and ordered home to wait orders.

Hoen, W. S., asst.-surgeon, detached from the *Zafiro* and ordered to the *Marblehead*.

Murphy, J. F., asst.-surgeon, detached from the *Hancock*, June 23, and ordered to the Naval Recruiting Station, Buffalo, N. Y., June 23.

Nelson, H. T., asst.-Surgeon, detached from the Naval Hospital, Washington, D. C., June 27, and ordered to the Naval Proving Grounds, Indian Head, Md., June 28.

Mears, J. B., acting asst.-surgeon, detached from the Naval Recruiting Station, Buffalo, N. Y., June 24, and ordered to Washington, D. C., for examination for appointment as asst.-surgeon, and then wait orders.

Shipp, E. M., surgeon, detached from the Naval Medical School, Washington, D. C., July 27, and ordered to duty at the Naval Hospital, New York, N. Y.

Bell, W. L., P. A. surgeon, having been examined by a retiring board, and found incapacitated for active service on account of disability incident thereto, is retired from active service under the provisions of Section 1,453 Revised Statutes.

Iden, J. H., P. A. surgeon, detached from the Naval Medical School Washington, D. C., June 26, and ordered home to wait orders.

Campbell, R. A., acting asst.-surgeon detached from duty with the second torpedo flotilla on board the *Worden* and ordered to Utica, N. Y., July 1, for duty with naval recruiting party No. 5.

Judd, H. W., acting asst.-surgeon, detached from the Naval Proving Ground, Indian Head, Md., June 28, and ordered to Huntington, W. V., July 1, for duty with naval recruiting party No. 4.

Spratling, L. W., surgeon, detached from duty with the Isthmian Canal Commission and ordered home to wait orders.

Holloway, J. H., asst.-surgeon, detached from the *Baltimore* and ordered home.

Traynor, J. P., asst.-surgeon, detached from the *Rainbow*, and ordered home.

Bachmann, B. A., asst.-surgeon, detached from the *Villalobos*, June 23, and ordered home.

Dykes, J. B., asst.-surgeon, detached from the Naval Station, Cavite, P. I., June 23, and ordered to the *Baltimore*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine Hospital Service for the seven days ending June 21, 1905.

Geddings, H. D., assistant surgeon general, to proceed to Baltimore for special temporary duty.

Eager, J. M., assistant surgeon general, granted leave of absence for nine days from June 30.

Peckham, C. T., surgeon, granted leave of absence for twenty days, from July 10.

Korn, W. A., passed assistant surgeon, granted leave of absence for one day, June 27.

Cleaves, F. H., acting assistant surgeon, granted leave of absence for 23 days, from July 10.

Drew, A. D., acting assistant surgeon, granted leave of absence for four days, under paragraph 210 of the regulations.

Hammond, A. P., acting assistant surgeon, granted leave of absence for 14 days, from June 17.

Keatley, H. W., acting assistant surgeon, granted leave of absence for one day, June 22.

McCormac, J. T., acting assistant surgeon, granted leave of absence for 15 days, from July 9.

Richardson, N. D., acting assistant surgeon, granted leave of absence for five days, from June 12, 1905, under paragraph 210 of the regulations.

Walkley, W. S., acting assistant surgeon, granted leave of absence for nine days, from June 27.

Acheubach, J., pharmacist, granted leave of absence for thirty days, from May 15, on account of sickness.

Gibson, F. L., pharmacist, granted leave of absence for twelve days, from June 18.

Holt, E. M., pharmacist, granted leave of absence for twenty-nine days, from July 3.

BOARD CONVENED.

Board to meet at the Marine-Hospital, Boston, for the physical examination of an officer of the Revenue Cutter Service, June 21, 1905. Detail for the board: Surgeon R. M. Woodward, chairman; Assistant Surgeon W. C. Rucker, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the period from June 16 to June 24, 1905:

SMALLPOX—UNITED STATES.

California: Los Angeles, June 3-10, 1 case.

Florida: Jacksonville, June 10-17, 1 case.

Illinois: Chicago, June 10-17, 15 cases; Danville, June 8-15, 3 cases.

Indiana: South Bend, June 10-17, 7 cases, 1 death.

Louisiana, New Orleans, June 10-17, 2 cases.

Massachusetts: Lowell, June 10-17, 1 case.

Michigan: Grand Rapids, June 18-25, 29 cases, 5 deaths.

Missouri: St. Louis, June 10-17, 4 cases, 1 death.

Nebraska: South Omaha, June 3-10, 6 cases.

Ohio: Toledo, June 3-10, 9 cases.

Pennsylvania: York, June 10-17, 3 cases.

Tennessee: Memphis, June 10-17, 1 case.

Wisconsin: LaCrosse, June 10-17, 4 cases; Milwaukee, June 3-10, 3 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, May 6-13, 3 cases.

Brazil: Bahia, April 27-May 13, 16 cases, 1 death. Rio de Janeiro, May 14-28, 15 cases, 6 deaths.

Ceylon: Colombo, May 6-13, 1 case, 1 death.

Denmark: Copenhagen, May 20-June 3, 2 cases.

Great Britain: Bristol, May 27-June 3, 1 case; London, 1 case; New Castle-on-Tyne, 2 cases; South Shields, 2 cases.

India: Bombay, May 8-16, 34 deaths; Calcutta, May 6-13, 5 deaths; Karachi, May 7-14, 1 case, 1 death.

Italy: Catania, May 27-June 8, 52 cases, 10 deaths; Lecce Province, May 18-25, 9 cases; Palermo, May 20-27, 2 cases, 2 deaths.

Mexico: City of Mexico, April 8-June 3, 65 cases, 35 deaths.

Russia: Moscow, May 13-27, 45 cases, 12 deaths; Odessa, May 6-27, 45 cases, 8 deaths; St. Petersburg, May 13-27, 19 cases, 1 death.

West Indies: Grenada, May 23-28, 2 cases.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, May 14-28, 74 cases, 24 deaths.

Ecuador: Guayaquil, May 16-23, 2 deaths.

Honduras: Puerto Cortez, May 25-June 6, 8 cases, 4 deaths.

Mexico: Coatzacoalcos, May 4-10, 3 cases. Tierra Blanca, June 4-10, 2 cases, 1 death.

Panama: Colon, Jan. 23-June 11, 27 cases, 7 deaths; Panama, Jan. 1-June 10, 78 cases, 25 deaths.

CHOLERA—FOREIGN.

India: Calcutta, May 6-13, 31 deaths.

PLAGUE—INSULAR.

Hawaii: Waipahu, June 20, 1 death.

Philippine Islands: Cebu, April 29-May 2, 2 cases, 2 deaths; Manila, April 29-May 6, 2 cases, 1 death.

PLAGUE—FOREIGN.

Africa: East London, May 6-13, 8 cases, 4 deaths; Mousa, 1 case, 1 death.

Brazil: Sao Paulo, April 30-May 7, 1 death.

India: Bombay, May 9-16, 659 deaths; Calcutta, May 6-13, 324 deaths; Karachi, May 7-14, 158 cases, 142 deaths.

Society Proceedings

COMING MEETINGS.

American Medical Association, Portland, Ore., July 11-14, 1905.

American Surgical Association, San Francisco, Cal., July 5-7.
South Dakota State Medical Association, Deadwood, July 5-7.
Amer. Assn. of Life Ins. Exam. Surgeons, Portland, Ore., July 10.
American Medical Editors' Assn., Portland, Ore., July 10.
American Urological Association, Portland, Ore., July 12-13.

NEW YORK NEUROLOGICAL SOCIETY.

Regular Meeting, held May 9, 1905.

The President, Dr. Joseph Fraenkel, in the Chair.

Acute Psychoses During Tabes.

Dr. George H. Kirby presented a woman, 50 years old, whose family history was negative. Her early development had been normal. She was married at 18 and had nine children. The last child was born fifteen years ago and died at eighteen months. It was delicate from birth; its hair fell out, and it had some eye trouble which the doctor told her had been inherited. She questioned her husband at the time about a venereal disease, but he denied infection. She believed, however, that he had been treated shortly before this for some such disease. She had never seen any signs of disease on his body. She herself has had no sore, so far as she knew. She never became pregnant again.

About eight years later, i. e., in 1899, she began to have headaches and shooting pains in her legs. In January, 1903, she suddenly became exhilarated and lively. She spent money foolishly and began to drink. During her periods of excitement she had several fainting spells, but no convulsions. The knee jerks were absent; Argyll Robertson pupil; some Romberg swaying, and greatly diminished pain sensibility below the knees. There was fine, regular tremor of the tongue and hands; no speech defect. She was quiet, pleasant in manner, perfectly oriented in time and place; she answered questions freely, was connected in speech, but tremendously expansive. There was no memory defect for either recent or remote events, but in her statements of certain remote dates there were discrepancies which she only partially realized and was not able to fully correct. Her attention was good; she retained names and numbers well. After she had been in the hospital two and a half months, she rather suddenly became clear mentally, gained full insight into her previously expressed grandiose ideas, and her memory was without defect. The physical signs of tabes remained unchanged. She left the hospital on June 27, 1903.

A few months after her return home she began to suffer from pains in the back and a sensation of constriction about the waist. She had difficulty in walking, and her legs would suddenly give way; or, if she bent over, she was apt to fall on her face. Her tabetic symptoms had been progressive, with no return of the mental trouble. She was now helpless so far as locomotion went. The joints were relaxed. Deep sensibility was lost in both legs. Three months ago she had an enormously swollen hip, which appeared rather suddenly and without pain; this had recently disappeared. The patient showed a wonderful amount of energy and perseverance. By crawling about on the floor and having things put where she could get them, she did her own housework, cooking, washing, etc. Her memory remained good, and she retained a full insight of her previous mental attack.

Progressive Lesion of the Root of the Fifth Nerve, Producing Motor, Sensory and Trophic Symptoms.

Dr. J. Ramsay Hunt exhibited a man, 59 years old, who had been a submarine diver for forty years. At the age of 25 he had a chancre of doubtful nature. His present disease began about sixteen months ago, and consisted of disagreeable drawing sensations and paresthesia on the left side of the face, in the distribution of the left fifth nerve. With this there was an associated weakness of mastication on the same side, and a tendency to a constantly chewing motion, which still persisted. Since the onset up to the present time, the affection had been gradually progressive. After a descent 45 feet below the surface, he noticed that he could not see with the left eye, and an oculist who examined the interior of the eye said that there had been a hemorrhage. On attempting to use the telephone, he noticed that he could not hear in the left ear. There was not, nor had there been any tinnitus aurium. Within two weeks the sight returned to the left eye and the hearing was restored to the left ear.

The symptoms in the region of the left fifth nerve continued to increase, and consisted of paresthesia and weakness in the distribution of the left trifacial nerve, associated with an incomplete anesthesia to touch, pain and temperature in the same area, and including the mucous membrane of the eye, nose, tongue and mouth on the affected side. There was an absence of the conjunctival and corneal reflex on the left side. He had a drawing sensation in the left face and gums, a feeling of irritation in the left eye, and the left nostril did not feel free. He had at no time had pains in the left face. The sense of taste was diminished on the left side, and the sense of smell, although not very acute on either side, was also diminished on the left. The left face was smaller than the right, and this did not seem to be entirely explained by the wasting of the temporal and masseters, which were atrophied on the left side. A large section of the frontalis muscle was wasted, and did not respond either to voluntary innervation or to electricity. The following oculopupillary symptom was present on the left side, i. e., slight ptosis, enophthalmus, and moderate dilatation of the pupil. Attempts to test the sweat secretion of the face by the administration of pilocarpin, and the tear secretion by irritation of the conjunctiva were negative.

The other cranial nerves, the gross motor power, the gait and station, the tendon, skin and pupillary reflexes were all negative. He had occasional vertiginous seizures and suffered somewhat from insomnia, but no headaches. The motor, sensory and trophic symptoms, without root pains, suggested a lesion of the nuclei of origin of the left fifth nerve. The nystagmus also indicate pressure in the pons. The retinal hemorrhages must be regarded as an accidental complication. The temporary deafness, without tinnitus and with complete restoration of hearing, was more difficult of interpretation. Symptoms of hysteria were wanting. The nature of the process might only be conjectured; it was however, progressive and unassociated with general symptoms of tumor.

Dr. Charles L. Dana said he had an opportunity to examine this case. There seemed to be a progressive facial hemiatrophy, with progressive loss of function of the fifth nerve. There was no pain nor symptom of tumor. The condition could best be explained by some morbid or degenerative condition involving the nuclei of the fifth nerve, possibly a gliosis or a parasyphilitic lesion. The case might eventually turn out to be an aberrant form of tabes. Dr. Dana said he had seen some cases of tabes with these peculiar symptoms, but never with a progressive facial hemiatrophy developing in this artificial way.

Case of Lead Poisoning, Probably Complicated by General Paralysis.

Dr. C. B. Dunlap showed a man, 47 years old, a painter, who was admitted to one of the state hospitals and died there seven months later. He had had painter's colic two years before admission, and had not been considered well since that time, though he had worked at odd jobs up to a week before entrance, at which time he left his boarding-house, was found wandering in the street in an aimless, bewildered way. At the hospital he appeared to be much exhausted, dejected and apathetic. He did not know where he was, or the nature of the place or the date, and gave the date of his own birth incorrectly. He claimed to hear a voice that he could not place.

Examination showed sluggish reaction of the pupils to light and accommodation. The tongue was tremulous. There was partial paralysis of the left arm and hand, and a much-weakened grip on that side. There was apparent wasting of the muscles of the thenar and hypothenar group. This wasting was also present on the right side, but less marked. The elbow, wrist and thumb reflexes were present on both sides. There was slightly diminished pain sensation on the ulnar side of the left arm. There was apparent wasting of the shoulder muscles, more marked on the left side; also of the back and gluteal muscles. The anterior tibial muscles showed some weakening, more marked on the left side. The knee jerks were exaggerated; the plantar reflexes diminished. No clonus; no Babinski; no sensory disturbances.

In November he complained of vague pains in his legs. The following month he became irritable and quarrelsome, and subsequently his gait became unsteady. The latter part of January he began to show marked inco-ordination, with great exaggeration of the patellar reflexes. The muscles of the legs, hands and tongue showed a marked tremor, and there was a peculiar trembling speech intonation, with failure to properly pronounce many words. By the middle of February the speech was worse, and the hands so ataxic and tremulous that he could not feed himself. Mentally, he was depressed and worried about himself. Four days before death the inco-ordination was jerky, almost spastic at times. He was almost hypersensitive to pain stimuli. Wasting of the interossei of the hands and feet and of the muscles generally was noted. All the muscles responded to the galvanic current, but the response was slight in the gastrocnemii and interossei. The day preceding his death the twitching of the muscle-groups was still more marked.

Autopsy: There was hypostatic congestion of the lungs; the spleen was soft and somewhat enlarged. The pia arachnoid was thickened and water-logged. The brain showed considerable thickness and toughness of the pia of the convexity and base. The basal vessels were fairly thin; there was no atheroma. There were no gross lesions, and on section, the appearance was normal, with nothing to explain the partial paralysis of the left arm and hand. There were no granulations in the fourth ventricle. Microscopically, sections taken from the paracentral and frontal cortex of the formalin-hardened brain showed the typical changes found in general paralysis, namely, infiltration of the pia with lymphoid and plasma cells, infiltration of the walls of the cortical vessels with the same elements and with pigment and pigment-carrying cells. There was also marked apparent increase in vascularity of the cortex; also pain neuroglia reaction, seen in the first layer of the cortex in the form of numerous spider cells; disorganization of the cortex layers, and numerous rod cells, such as Nissl and Altheimer, found to be quite constant in general paralysis, and unusual elsewhere. The walls of many of the larger cortex vessels were so packed with cellular elements and so broken up that the different coats were indistinguishable, and the lumen was often hard to find. Marchi stains of the paracentral lobules showed a few myelin-sheaths which were broken up into rows of fat droplets, indicating a myelin decay of moderate degree. In sections of the spinal cord from the cervical thoracic and lumbar regions, a diffuse myelin degeneration was evident in the anterior or posterior roots.

Dr. T. P. Prout referred to three toxic cases resembling that reported by Dr. Dunlap, but none of them came to autopsy. The toxic symptoms that were particularly prominent were decided somnolence and a passive depression. All three of those patients came from a factory where rubber was manufactured, and Prout was inclined to attribute the toxemia to noxious gases inhaled by the men.

Case of Brain Neoplasm.

Dr. William B. Noyes presented an Italian boy, 11 years old, whose family and previous personal history was negative. He was one of eight children, three of whom had died at birth. There was no history of syphilis or tuberculosis. Two months ago he developed some affection of the eyelids resembling ptosis; this was noticed first on the right side, and disappeared after a month on the application of a leech behind the ear. The left eye became similarly affected a month after the appearance of the condition on the right side. He has complained of frequent headache, located in the region of the right ear and right frontal region.

Examination showed the following condition: A left facial paralysis of a peculiar type, with continuous spasm and twitching of the orbicularis palpebrarum and blepharospasm. Reaction to faradism absent. The tongue showed choreiform movements or a fine fibrillary twitching. There was double choked disc; no paralysis. The temperature usually ranged between 99 in the morning and 100 or 101 F. in the evening. An internal strabismus subsequently developed, due apparently to overactivity of the internal rectus rather than to paralysis of the external rectus. The conjunctiva of the left eye was anesthetic, but there did not seem to be any other fifth nerve symptom. The left knee jerk became exaggerated; there was some ataxia on standing with the eyes closed. The headaches recurred frequently, though yielding to ergot. The boy's general health remained good enough to permit him to play in the yard. The case was regarded as one of cerebral neoplasm, located in the pons, or, according to the view of one observer, in the facial center in the cortex. The nature of the neoplasm was doubtful, excepting that the temperature strongly suggested an abscess. The symptoms, however, seemed to be too distinctly limited to make an abscess probable.

Dr. William M. Leszynsky said that one of the interesting peculiarities of the case shown by Dr. Noyes was the left facial spasm, a certain degree of which was sometimes noted after a facial paralysis in older patients. From the history of Dr. Noyes' case the speaker said he would be rather led to infer that the lesion, instead of being an actual neoplasm, was probably a disseminated one, or that the symptoms were due to a certain amount of basilar meningitis. It was hardly necessary to assume the presence of a neoplasm on account of the extensive choked disc, and he doubted whether any ophthalmologist who looked into the eye and found hemorrhages and choked disc could make the diagnosis of a neoplasm in contraindication to a basilar meningitis.

Incomplete Transverse Myelitis from Exposure After Working in Caisson.

Dr. I. Abrahamson's patient, M. G., male; a Russian laborer, came under observation on March 23, 1905. His family history was unimportant. Seven years ago the patient had typhoid fever. He had long been addicted to the excessive use of beer and cigarettes. Denied venereal infection. Up to fourteen months ago he worked for three hours daily in a caisson. For three days previous to the onset of his present illness he had been dissipating and drinking heavily. He entered the exhaust-chamber feeling ill at ease, and remained there twenty minutes; while there he drank some hot coffee, and then went out into the rain without adequate protection,and reached his home soaked and cold. About ten minutes after leaving the exhaust-chamber he began to vomit, and was seized with violent pains in the epigastrium. He felt cold, with chilly sensations and numbness in the legs, especially the left. At the same time there was increasing weakness in the legs, so that within fifteen minutes after going to bed he was completely paralyzed from the umbilicus down. There was also retention of urine and feces, and marked dyspnea and palpitation. After a month or so he slowly began to improve, but he still suffered from constipation and delayed urination. The gait was very spastic, with slight unsteadiness. The lesion in this case was an incomplete transverse myelitis. Etiologically, the case illustrated the importance of alcoholism and exposure as predisposing to caisson myelitis, facts which numerous writers have accentuated.

Syringomyelia.

Dr. Abrahamson exhibited a man, 42 years old, a tailor by occupation. His father died of tuberculosis; his mother of gangrene of the leg. He had five living sisters, who were all well. He suffered from frequent attacks of bronchitis; denied a venereal history; used alcohol and tobacco in moderation. Eight years ago he fell on the ice, striking his back. He did not lose consciousness, but suffered severely from pain in the region of the thorax on both sides. He remained in bed one week, and then returned to work. For two years previous to his injury he had suffered from tingling and cold paresthesia in the left upper extremity, which he attributed to his habit of sleeping on the left side, resting his head on his hand, and thus compressing the left arm. The fall apparently aggravated his symptoms, and subsequently he noticed that his fingers were numb, and that he could not feel objects distinctly with his left hand. With this hand he also failed to distinguish between hot and cold with certainty. The numbness and loss of sensation gradually extended to the left supraspinatus region, the occiput, and more recently to the submaxillary region, the left anterior chest, the left posterior thorax and finally the right shoulder and arm were involved in the area of cold paresthesia. The patient complained of pain in the left interscapular region during the past eight months and of a sense of constriction about the left chest, neck and occiput, as if the entire region was encased in plaster. In the neck he had a choking sensation, interfering with swallowing and speaking, and the left ear seemed to be blocked at times. Eight months ago he noticed that the left upper extremity was weak, with wasting in the thenar region. Recently fibrillary twitchings developed in this arm, with excessive perspiration in the left axilla. There was no rash; no joint changes; no trophic skin changes. There was some delay in urination, and the bowels were costive. There was a diminution of sexual potency. No diplopia; the other special senses were normal. The spinal column was scoliotic, with a convexity to the left in the cervical, and to the right in the dorsal region. In walking, the patient dragged the left leg somewhat; no Romberg. The upper border of sensory disturbances corresponded exactly to the sensory distribution of the first cervical segment on one side only.

Some Forms of Toxic Deliria.

Dr. George H. Kirby reported three cases of toxic deliria. The first of these was due to the excessive and continuous use of phenacetin; the second to the use of chloral taken after alcoholic excesses, and the third to the use of bromids for the relief of insomnia. These cases all had certain symptoms in common. The patients were not clear as to their surroundings; they apprehended readily what was said to them and were able to grasp, more or less, the simple relations which came under their own eyes, but they invariably mistook the situation in which they were placed. They were especially confused over the identity of persons, while time orientation suffered comparatively little. Consciousness regarding their own personality remained intact, and with one exception, the patient's grasp on the remote past was clear. Perhaps the most striking symptom was the tendency to produce spontaneously detailed accounts of extraordinary occurrences, dream-like in character, and mostly of a terrifying and fearful content. Especially noteworthy was the fact that motor agitation and fear reactions might be entirely absent. Improvement in all the cases was gradual, and the belief in the delirious experiences remained some time after the patients were otherwise clear. The condition had to be differentiated from (1) delirium tremens; (2) general paralysis; (3) Korsakoff's psychosis; (4) the great variety of symptom types in the infective-exhaustive group of psychoses.

NEW MEXICO MEDICAL SOCIETY.

Twenty-Fourth Annual Meeting, held at Las Vegas, May 10 and 11, 1905.

The President, Dr. Edward B. Shaw, Las Vegas, in the chair.

Welcome.

Mayor F. E. Olney welcomed the association to Las Vegas, and Dr. John F. Pearce, Albuquerque, responded in behalf of the association.

Memorial Resolutions.

The society passed resolutions regarding the deaths of the following members, who had died during the past year: Drs. Ernest J. Mellish, El Paso, Texas; Charles G. Cruikshank, San Marcial, and Jacob E. Mohr, Las Vegas.

Election of Officers.

Officers for the ensuing year were elected as follows: Dr. Percy G. Cornish, Albuquerque, president; Drs. Thomas B. Hart, Raton; William E. Parkhurst, Roswell, and Bruce E. Lane, Las Cruces, vice-presidents; Dr. Guy H. Fitzgerald, Albuquerque, secretary; Dr. Henry M. Smith, Las Vegas, treasurer; Drs. Enoch W. Tipton, Silver City; George W. Harrison, Albuquerque, and Samuel B. Swope, Deming, councilors.

Society Journal.

It was decided to publish a medical journal as an official organ of the society, and Dr. Guy H. Fitzgerald was elected editor, and Dr. Percy G. Cornish assistant editor, both of Albuquerque.

Entertainment.

At the annual banquet held at the Castenada, Justice W. J. Mills delivered the address of the occasion. The visiting ladies were entertained by the wives of the Las Vegas medical profession at the home of Dr. W. Curtiss Bailey, and luncheon was also served at the Romero Ranch.

RHODE ISLAND MEDICAL SOCIETY.

Ninety-Fourth Annual Meeting, held in Providence, June 1.

The President, Dr. William R. White, Providence, in the chair.

New Officers.

At the meeting of the House of Delegates the following officers were elected: President, Dr. Christopher F. Barker, Newport; vice-presidents, Drs. Charles V. Chapin, Providence, and Frank B. Fuller, Pawtucket; secretary, Dr. Stephen A. Welch, Providence; treasurer, Dr. George S. Mathews, Providence; curator, Dr. William J. McCaw, Providence; auditor, Dr. Edwin B. Harvey, Providence, and delegate to the American Medical Association for 1906-7, Dr. John Champlin, Westerly.

Committees.

The following standing committees were elected: Arrangements, Drs. William B. Cutts, Pearl Williams and Herbert G. Partridge, all of Providence; publication, Drs. George D. Hersey, Clarence M. Godding and Gardner T. Swartz, all of Providence; library, Drs. Horace G. Miller, George D. Hersey, George W. Porter, George L. Collins and Frank L. Day, all of Providence; necrology, Drs. Helen C. Putnam and Edwin B. Harvey, Providence, and Lucius F. C. Garvin, Lonsdale; legislation, Drs. Gardner T. Swartz, William F. Gleason and Walter L. Munro of Providence, the president and the secretary; building, Drs. Horace G. Miller, John W. Mitchell, Robert F. Noyes, Fenner H. Peckhem and Frederick T. Rogers, all of Providence.

Fiske Fund Prize.

Dr. Halsey De Wolf announced that the $250 Fisk Fund prize had been awarded to Dr. W. Louis Chapman, Providence, for his essay entitled "The Complications of Gonorrhea in Both Sexes," this being the second time that this prize has been awarded him.

Presentations.

A portrait of Dr. Lewis Leprellett Miller was given the society by Edward Carrington, through the courtesy of Dr. George L. Collins. A diploma from the Medical School of Brown University, awarded in 1826 to Dr. Joshua Rose of South Kingston, was presented to the society, and Dr. Horace G. Miller, Providence, presented the society with his collection of books on ophthalmology and otology.

Banquet.

At the annual banquet, Dr. Edward E. Pierce acted as anniversary chairman, and addresses were made by President William H. P. Faunce of Brown University, Secretary of State Charles P. Bennett, and Dr. John C. Pegram, Providence.

The next meeting will be held at Newport, September 7.

MASSACHUSETTS MEDICAL SOCIETY.

One Hundred and Twenty-fourth Annual Meeting, held in Boston, June 13-14, 1905.

The President, Dr. Arthur J. Cabot, Boston, in the Chair.

The morning of June 13 was devoted to visits at the various hospitals of Boston and to the antitoxin and vaccine laboratories of the State Board of Health. In the afternoon the society met in two sections at the Boston Medical Library.

Councilors' Meeting.

The Secretary reported the names of 37 fellows who have died during the year and of 171 new members, making a total of about 3,000. The treasurer reported total receipts during the year of $24,729.38, and a balance on hand of $11,199.05, besides some $30,000 permanent invested funds.

Officers Elected.

President, Dr. Arthur T. Cabot, Boston; vice-president, Dr. Frederick H. Thompson, Fitchburg; treasurer, Dr. Edward M. Buckingham, Boston; corresponding secretary Dr. Charles

W. Swan, Brookline; recording secretary, Dr. Francis W. Goss, Roxbury; librarian, Dr. Edwin H. Brigham, Boston.

The next annual meeting will be held in Boston, June, 1906.

Resolutions.

A resolution asking the legislature to require the annual inspection of the eyes and ears of school children was referred to the committee on state and national legislation with full powers.

A resolution was passed approving the recent efforts of the Postmaster-General to check the activities of certain charlatans and quacks by refusing them the use of the facilities of the mails.

SECTION IN MEDICINE.

Dr. George W. Gay, of Newton, Chairman.

Some Interesting Features Connected with the Outbreak of Smallpox in North Adams in 1904.

Dr. Lyman A. Jones, North Adams, said that his city has a large population of Canadian cotton operatives who are careless about vaccination. The first case occurred July 8 and was promptly quarantined. The second case, August 2, was soon followed by a large number of others. Subsequently, however, these were proven to have originated in three other unreported cases; two imported from Canada, one so mild as to be unrecognized. Spread of the disease was also probably aided by a physician treating undetected cases. The coincidence of epidemics of measles and chicken pox made diagnosis more difficult, as did the thorough vaccination of a family who had mild varioloid and did not seek any medical aid, but transmitted variola to others. The local Board of Health succeeded in checking the epidemic, the last case occurring October 14. They attribute their success to the choice of a house in a new unoccupied block as an isolation hospital, and the use of a second and later a third house in the same block for purposes of detention of all suspects. This made possible the thorough cleaning and fumigation of all infected spots, and rigid enforcement of vaccination.

DISCUSSION.

Dr. John H. McCollom, superintendent of the South Department of the Boston City Hospital, emphasized the importance of every municipality having a smallpox hospital ready for use. A house of detention is a necessity for cases impossible of diagnosis. Chickenpox, measles, syphilis and K. I. rash must all be carefully excluded. There is no reason to believe that smallpox is an air-borne disease, but often, as was here demonstrated, there are several foci of infection.

Ocular Vertigo of Interest to the General Practitioner.

Dr. Benjamin P. Croft, Greenfield, said vertigo may result from (1) paralysis of the ocular muscles; (2) ocular muscle imbalance; (3) eyestrain. He cited cases to show how they are often promptly relieved and cured by the removal of the ocular defect, after having been treated unsuccessfully for weeks or months.

Value of Hydrochloric Acid in Diseases of the Stomach.

Dr. Richard F. Chase, Brookline, stated that this acid is used either as a (a) stomachic; (b) to supply a deficiency or to prevent fermentation; (c) with pepsin to attain digestion, or (d) to stimulate the gastric glands or the pancreatic activities. In order to make up for its absence, as much as 1 oz. of a 10 per cent. solution daily would be needed, which is impracticable. For the same reason it is useless to give it with pepsin. Instead of stimulating the secretion of acid, it diminishes secretion. Its use is therefore limited to the alleviation of symptoms of indigestion of a functional or nervous origin.

Medical Treatment of Hyperacidity and Gastric Ulcer.

Dr. Frederick C. Shattuck, Boston, said the disease is readily recognized. Not enough emphasis is placed on "Pyloric Spasm." In mild cases an alkali soda or magnesia is curative. Diet should consist largely of milk and eggs, without salt or condiments, and with only limited amounts of meat or fish. The severer cases call for the same diet and large doses of bismuth. Ulcer is treated by resting the stomach, morphia, and rectal feeding. Gradually begin to give small quantities of milk and lime water until meat can be given safely. The only indications for operation are perforation or a cicatrix producing obstruction.

DISCUSSION.

Dr. Elbridge G. Cutler, Boston, believes that rest in ulcer of the stomach should be absolute for three or four weeks. In the fourth week the patient may be allowed to walk a little. For a long time he must not bend forward or bring any pressure on the epigastrium. For one week give milk and lime water. Second week, curd or strained cereal. Third week, eggs. Fourth week, chicken and simple diet. No raw fruit, pastry or beef for several months. For the first two days use rectal feeding, omitting it when you can give 6 oz. of milk and lime water at a time. Adrenalin helps in checking hemorrhage. Profuse or frequent hemorrhage or persistent pain calls for operation. Of his 65 cases all but 19 were of foreign parentage; 5 died; 1 recurred; 27 are well; 4 improved; 2 much improved, and 2 not improved.

Dr. Marsena P. Smithwick, Boston, agreed with Dr. Chase that HCh is practically useless. Hyperchlorhydria is a neurosis, and successful treatment classes it with neurasthenia. He treats it as such.

JOINT MEETING OF SURGICAL AND MEDICAL SECTIONS.

Methods of Medicine.

Dr. Lewellys F. Barker, of Johns Hopkins University, delivered an address on this subject. He said medicine is most complex. It was an art before it became a science, and is now only gradually becoming rational. Men have been busy collecting and classifying facts and as yet few laws have been formulated. In the gathering of facts reason has brought vast aids to the mere senses. Vision, hearing, touch are each far more accurate than formerly because of these aids. Exactness is everywhere demanded. Hypotheses must be tested by experiments. Experience is more valuable than comparison in determining causes. Scientific medicine contains within itself its own criterion. Only thus is the truth of any man's statement to be established. Truths we can now see were formerly invisible. The scientific medical man desires to act. Therapy then becomes aggressive. Better knowing results in better doing. Scientific therapy must be based on rational physiology. Do not separate the clinics from the laboratories. Medical schools are now training scientific practitioners.

SECTION IN SURGERY.

Dr. George H. Monks, Boston, Chairman.

Applied Anatomy of the Frontal Sinuses.

Dr. Harris P. Mosher, Boston, presented a paper on the descriptive and surgical anatomy of the frontal sinuses, illustrating his points by a large number of charts and drawings.

What the Suburban Surgeon is Doing in the Abdomen and How He Does It.

Dr. Charles E. Durant, Haverhill, cited his own experience of 250 surgical operations. His cases included appendicitis, pelvic disease, extrauterine pregnancy, hernia, etc. A mortality of only 11 in a list of 281 operations shows that good work is not done only in large city hospitals. After describing the deails of his technic and management, he argued the necessity and the possibility of keeping in touch with the large city clinics.

The Cause of Disability After Fracture of the Lower Leg.

Dr. Frederick J. Cotton, Boston, presented a preliminary report. He said the cause is not chiefly the deformity which may exist, but the relation which is established between the axes of the bones. Shortening is rarely over one-half inch. But there may be poor circulation, swelling and, hence, unfavorable results. The commonest defects are valgus, static flat-foot, inverted potts and shortened tendo-Achilles. There is a tendency to too great immobilization. Judicious massage is better. The foot must be kept at right angles with the ankle.

Other papers read were: "Early Diagnosis of Surgical Diseases of the Urinary Tract," by Dr. Benjamin Tenney, Boston; "Symptoms and Treatment of Disease of the Frontal Sinus," by Dr. F. C. Cobb, Boston.

Some Problems of Intermediary Metabolism.

Professor Russell H. Chittenden, of Yale University, gave the Shattuck lecture. He said: Metabolic processes do not yet constitute a complete chain. There are many gaps. As these are slowly filled in new gaps appear. Many diseases are clearly the results of perversions in metabolism. Chemical processes are all the time going on in the cells and glands. The same cells may produce a variety of products. How are these changes brought about? Formerly much emphasis was placed on the theories of "Vitalism." Now we know that cells manufacture and contain intracellular ferments. New ones are being constantly discovered. They are present within the cells of nearly all tissues and act best on the proteids of that tissue. Oxidation is due to these intracellular ferments known as "oxidazes." An illustration is found in the series of intermediary metabolic changes which occur in the change from nucleoproteids to uric acid. Moreover, these ferments may exhibit oxidation—probably a more important result even than the oxidation itself. Uric acid does not come chiefly from the food ingested, but from the muscle tissue, and owes its origin entirely to enzymatic oxidation. The same series of changes due to intracellular ferment, was demonstrated in the oxidation of carbohydrates. Here again "oxidazes" which inhibit allow or compel incomplete oxidation products. The final result depends on the successive action of the proper intracellular ferments.

Wednesday morning a number of Boston specialists demonstrated the latest methods of diagnosis. The demonstration was organized by Prof. W. T. Councilman of Harvard. The following topics were discussed: Frozen sections, boards of health, bacteriology, medicolegal tests, feces, blood, sputum, coagulation time, urine, cytodiagnosis, pathology, dermatology, otology, cystoscopy, blood pressure, neurology, digestion, *x*-ray, laryngology, physical diagnosis, and surgery.

The annual discourse was given by Dr. Charles A. Drew, State Farm, and was followed by the annual dinner.

Lieutenant-Governor Guild said Massachusetts is not merely abreast of other states in matters of medicine and sanitation, but in many points is the pioneer. No other state takes as good care of its insane, or feeble-minded, or furnishes free antitoxin for diphtheria. In matters of water supply and sewerage, Massachusetts is an international authority.

Louis D. Brandis, Esq., appealed to the physicians of Boston to take some concerted action and secure the expenditure for a Hospital for Consumptives of the $150,000 which was appropriated in 1901, but no part of which has yet been called for by the mayor.

WISCONSIN STATE MEDICAL SOCIETY.

General Session, Fifty-ninth Annual Meeting, June 8, 1905.

The President, Dr. C. W. Oviatt, in the Chair.

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Squint.

Dr. H. V. Würdemann and Dr. N. M. Black, Milwaukee, said that it is a well-established fact that the large majority of crosseyed children can be cured of their squint without resorting to operative procedures, provided treatment is begun early enough.

DISCUSSION.

Dr. J. A. L. Bradfield, La Crosse, said that it is criminal to tell a parent that a child will outgrow squint. This disease is caused in most cases by errors of refraction, which, if corrected, will in time correct the squint.

Dr. G. E. Seaman, Milwaukee, said that the real objection to the Worth method of developing the fusion faculty is the time and patience necessary to bring about good results. Amblyopia is the effect rather than the cause of squint, but in amblyopic cases operation is frequently necessary. Squint is almost never outgrown without treatment.

Dr. F. T. Nye, Beloit, advised the earliest possible treatment. Kindergarten work does not cause, but discovers defective vision early and in time for correction. If the cases are not treated early, operation may become necessary.

Dr. Würdemann said the results of orthoptic treatment are encouraging. Half a dozen treatments are given at the office of the physician and the rest of the treatment is given at the home of the patient. It may require from three months to one or two years to effect a cure.

Placenta Prævia.

Dr. G. A. Hipke, Milwaukee, said that Cesarean section should always be performed where the child is alive in a case of placenta prævia centralis, but that it should never be performed in cases of placenta prævia lateralis or marginalis.

DISCUSSION.

Dr. T. L. Harrington, Milwaukee, stated that placenta prævia is not on the increase. The diagnosis is usually easy. Modern practice has reduced the death rate of mothers from 30 per cent. to 10 per cent., and the death rate of the children considerably. Cesarean section should seldom be resorted to even in placenta prævia centralis.

Dr. L. T. Bennett, Beloit, protested against the rule of performing Cesarean section in placenta prævia centralis. Great pains should be taken in these cases to avoid infection.

Dr. Warren B. Hill, Milwaukee, said the location of the patient is an important factor in the treatment. The expectant plan might be pursued in a good hospital, while under adverse surrounding and where the conditions are not favorable to immediate relief, premature labor should be brought about as quickly as possible.

Dr. J. R. Minahan, Green Bay, urged that the surgeon be called early, if at all, and not as a last resort.

Aseptic Obstetrics.

Dr. J. P. Cox, Spooner, urged absolute surgical cleanliness. Nature tries to protect the patient, and it is only when in our own bungling insanitary ministrations we overwhelm the guardian of the citadel with hostile germs that danger results.

Dr. E. L. Boothby, Hammond, said it is often too late to practice aseptic obstetrics in the country, but women under the conditions described seem to be immune from infection.

Dr. J. M. Dodd, Ashland, said that absolute asepsis in obstetrics is impossible.

Address in Surgery.

Dr. Hugh H. Young, Baltimore, Md., discussed the present status of surgery of the prostate. He gave an outline of the functions and pathology of the gland, and described his own modified perineal operation, whereby he leaves the floor of the urethra, the verumontanum and the ejaculatory ducts, thus preserving full sexual power in almost every instance. The prostate is one of the most important of the sexual organs. No progress has been made in the treatment of tuberculosis of the prostate during the last ten years, and operation is indicated. The etiology of prostatic hypertrophy is not definitely settled. Paralysis of the bladder is not a usual complication. Cystoscopic examination should be employed. Carcinoma of the prostate occurs in from 10 to 15 per cent. of supposed benign hypertrophies. It is one of the most important of curable surgical conditions. Enlarged, hard and irregular prostate with tendency to grow toward the seminal vesicles indicates cancer. An early diagnosis and permanent cure are feasible.

The Causes and Symptoms of Cardiac Insufficiency.

Dr. J. D. Madison, Milwaukee, said early symptoms should be studied and treated, but the diagnosis of myocardial disease is often difficult.

Dr. W. H. Washburn said the earliest evidences of myocardial insufficiency should be recognized and treated. The new Oertel stethoscope was exhibited.

Dr. A. J. Patek, Milwaukee, said that myocardial conditions, if recognized early, are quite amenable to treatment. Arrhythmia is not a perfectly reliable test of myocardial degeneration, but may be due to gastrointestinal or other disturbance.

Infantile Scurvy, with Special Reference to Diagnosis.

Dr. A. W. Gray, Milwaukee, gave the history and pathology of the condition and urged the importance of the disease, its proper early diagnosis and treatment. The disease is caused by improper feeding. Many children die on account of non-recognition of the disease.

Arteriosclerosis.

Dr. A. L. Potter, West Superior, said various instruments for measuring blood pressure are useful for the early detection of arteriosclerosis. Truneček's inorganic serum is valuable in the treatment. The old saying that a man is as old as his arteries is a true one.

The Pathology and Non-Surgical Treatment of Injuries of the Stomach.

Dr. Wilhelm Becker, Milwaukee, described methods to be used in rectal feeding, oil inunctions. He advised packing about stomach to prevent infection of abdominal cavity with pancreatic juice and to keep the various organs clean.

Dr. Warren B. Hill spoke of the advantages of rectal feeding in such cases, but the feeding should be done by the physician in charge. Give the bowel ample time to rest between feedings.

Diagnostic Value of Cystoscopic Examinations.

Dr. W. A. Gordon, Jr., Oshkosh, said cystoscopy is a conservative diagnostic procedure that renders unnecessary many exploratory operations. It is useful chiefly in the diagnosis of urinary tumors. It affords the best means of collecting urine from each kidney separately. It is valuable in prostatic disease, calculus, appendicitis and bladder troubles generally. The instrument should be employed more freely than at present in the settlement of difficult diagnoses in urinary diseases.

Blood Examination as an Aid to Diagnosis.

Dr. M. Dvorak, La Crosse, showed methods used, emphasized the importance of the subject, and showed the great progress made.

Dr. Otho Fiedler, Milwaukee, said that work on the blood has heretofore been largely cellular, but now the plasma is receiving greater consideration. The test-tube pathology of the present is to be differentiated from the microscopic pathology of the past.

The secretary spoke very hopefully of the success of the society under the new plan, and said he believed that a membership of 2,000 would soon be attained and the dues could be decreased. One of the things hoped for was that membership in the county society would include membership in the state and national bodies.

KANSAS MEDICAL SOCIETY.

Annual Meeting, held in Wichita, May 3-5, 1905.

The President, **Dr. Lawrence Reynolds**, Horton, in the Chair.

House of Delegates.

The house of delegates considered the matter of redistricting the state into councils or districts and received reports on organization. During the year 49 county societies have been organized as component parts of the state society, and the membership has been increased more than 100 per cent.

The president, Dr. Lawrence Reynolds, Horton, chose as the theme for the presidential address, "The Doctor as a Business Man."

The program of the meeting was divided into symposia on nervous and mental diseases, eye diseases, general surgery, orthopedic surgery, state medicine and therapeutics.

Election of Officers.

The following officers were elected: President, Dr. C. E. Bowers, Wichita; vice-presidents, Drs. Harry R. Ross, Sterling; John D. Riddell Enterprise, and Samuel S. Glasscock, Kansas City; secretary, Dr. Charles S. Huffman, Columbus (for three years); treasurer, Dr. Lewis H. Munn, Topeka; librarian, Dr. Samuel G. Stewart, Topeka; councilors, Drs. Clarence C. Goddard, Leavenworth; Millard F. Jarrett, Fort Scott; Frank M. Daily, Beloit; Oliver J. Furst, Peabody; Herbert L. Alkire, Topeka, and Arthur L. Cludas, Minneapolis; delegate to the American Medical Association, Dr. Lawrence Reynolds, Horton.

The society will hold its next meeting at Topeka.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Pertussis.

At the onset of the disease, according to the *Amer. Text-Book of Applied Ther.*, a hot mustard footbath should be given, followed by a saline aperient and the following for internal use:

℞.	Tinct. aconiti	m. ii		12
	Vini ipecac	m. xlviii	3	20
	Syr. aurantii flor	℥ss	15	
	Liq. potass. cit. q. s. ad	℥ii	60	

M. Sig.: One teaspoonful every two hours for a child 2 years of age.

During the paroxysmal stage the indications for treatment are to relieve or to cut short the paroxysm and to subdue the irritability of the respiratory mucous membrane and of the general nervous system, and to get rid of the increased secretion in the bronchi. During the paroxysm the child should be made to sit down or to kneel, and the head should be held in the mother's hands. In very young children the mucus should be removed by the finger after the paroxysm has passed. A few swallows of water may serve the purpose.

Of all the antispasmodic preparations Starr ranks belladonna first. Under its use the frequency and severity of the paroxysm are allayed. The following formula is also recommended:

℞.	Pulv. ipecac.			
	Ext. opii aq., āā	gr. iv		25
	Ext. valerianæ	ʒss	2	

M. Ft. chart No. xvi. Sig.: From one to four during the day.

Jacobi, in the case of a child 6 years of age, begins with ten drops (.65) of the tincture of belladonna three times a day, and gradually increases the size of the dose till flushing begins. Other authorities begin with grain one-fourth (.015) of the extract of belladonna for a child 2 years of age, combined as follows:

℞.	Ext. belladonnæ	gr. iv		25
	Syr. tolutani q. s. ad	℥ii	60	

M. Sig.: One teaspoonful every two hours until the physiologic limit is reached.

The following is also recommended at the beginning of the whooping stage:

℞.	Zinci sulph	gr. i		06
	Ext. belladonnæ	gr. 1/6		01
	Syr. aurantii	ʒii	8	
	Aquæ	ʒiv	15	

M. Sig.: At one dose and repeat every four hours.

The dose of zinc sulphate and belladonna may be gradually increased.

To children under 1 year of age from one-half to one grain (.03-.06) of alum is given three or four times a day, and to older childen grains two (12) from every four to six hours. For a child 1 year old the following formula is recommended:

℞.	Ext. belladonnæ	gr. i		06
	Aluminis	ʒss	2	
	Syr. zingiberis			
	Syr. acaciæ			
	Aquæ, āā	℥i	30	

M. Sig.: One teaspoonful four times in twenty-four hours.

Antipyrin is of value when given in proper sized doses. Sonnenberger recommends grain 1/6 (.01) for each month of the child's age or grains one and a half (.09) for each year, and advises repeating the dose every four hours. This dose may be gradually increased. The dose for larger children may reach from grains eight (.50) to grains fifteen (1.00) three times daily. It should be commenced early in the course of the disease.

Emetics are sometimes recommended. For this purpose the syrup of ipecac is of value given in doses of from ten to twenty drops each (.65-.1.30) three times a day to a child 3 years of age.

Inhalations are recommended by some authors, such as an inhalation of steam containing from 1 to 2 per cent. solution of carbolic acid. Oil of eucalyptus is said to be a more powerful germicide than carbolic acid applied in the same manner. The following combination is recommended for this purpose:

℞.	Olei eucalypti			
	Olei terebinthinæ, āā	ʒii	8	
	Spts. rectific	℥ii	60	

M. Sig.: As an inhalation one-half hour before each meal and at bedtime.

Bronchitis.

The following combinations containing senega are of value in the treatment of bronchitis which is chronic in character:

℞.	Tinct. senegæ	ʒii	8	
	Liq. ammon. acetat	ʒiv	15	
	Spts. ammon. arom	ʒss	2	
	Syr. simplicis	℥i	30	
	Aq. feniculi q. s. ad	℥iv	120	

M. Sig.: Three teaspoonsful three or four times a day. Or:

℞.	Vini ipecac.	ʒiss	6	
	Syr. pruni virg	ʒiv	15	
	Ammon. carb	gr. xx	1	30
	Infus. senegæ q. s. ad	℥iv	120	

M. Sig.: Three teaspoonfuls four times a day in water. Or:

℞.	Tinct. scillæ	ʒi	4	
	Tinct. belladonnæ	ʒss	2	
	Tinct. senegæ	ʒiii	12	
	Elix. simplicis q. s. ad	℥vi	180	

M. Sig.: One tablespoonful four times a day.

In the acute bronchitis of children the following combination is recommended:

℞.	Vini ipecac	m. x		65
	Liq. ammon. acetat	ʒss	2	
	Tinct. belladonnæ	m. i		06
	Spts. chloroformi	m. v		30
	Aq. feniculi q. s. ad	℥ii	60	

M. Sig.: Two teaspoonfuls every hour for four or five doses; then once every three or four hours.

False and Membranous Croup.

In the ordinary cases of false croup, unless the symptoms are severe, S. A. Visauski, in *Merck's Archives*, recommends the following outline of treatment:

℞.	Hydrarg. chloridi mitis			
	Sodii bicarb., āā	gr. ss		03
	Salol	gr. 1/4		015

M. Ft. chart. No. i. Sig.: One such powder every hour until four doses are taken.

For the croupy cough and for its relaxing effect the following is advised:

℞.	Apomorph. hydrochlor	gr. i		06
	Acidi hydrochlor. dil	m. xxx	2	
	Syr. senegæ	ʒiv	15	
	Syr. pruni virg	℥iss	45	
	Aq. anisi q. s. ad	℥iv	120	

M. Sig.: One teaspoonful every two hours for a child 3 years of age. Or:

℞.	Potass. carb	gr. xxiv	1	65
	Vini ipecacuanhæ	ʒiii	12	
	Spts. chloroformi	ʒii	8	
	Syr. pruni virg	℥i	30	
	Aq. anisi q. s. ad	℥iii	90	

M. Sig.: One teaspoonful every two hours.

A cloth wrung out in cold water, with a dry cloth on top, should be applied to the throat and changed every hour. The use of medicated steam is also recommended. The child is placed under a tent and the steam, charged with turpentine and eucalyptus oil or menthol and camphor, passed from a Holt's kettle. If it is a case of false croup one steaming is usually all that is necessary, but in membranous croup it must be repeated from time to time, according to circumstances. If, by the foregoing treatment, the symptoms do not clear up in twenty-four hours, antitoxin should be administered, giving to a child 2 years of age from 3,000 to 4,000 units, and repeating the dose in eight hours if necessary. If the croupy condition has existed three or four days before the physician sees the child and the type of the disease is malignant in character, 5,000 units should be used as the first dose. The severity of the disease should govern the treatment by antitoxin and not the age of the patient. The general nutrition of the child should be maintained together with proper elimination, and attention should be given the heart. If the disease still progresses, intubation or tracheotomy must be considered.

Some authorities recommend the following as of value in the treatment of false croup in adults:

℞.	Vini ipecac.	ʒiss	6	
	Antimon. tartratis	gr. 2/3		04
	Oxymel. scillæ	ʒi	4	
	Infus. senegæ q. s. ad	℥ii	60	

M. Sig.: From ten to fifteen minims every fifteen or twenty minutes until the cough is relieved.

Medicolegal

Length of Time Entitled to Hospital Benefits.—The Court of Civil Appeals of Texas says, in the case of Scanlon vs. Galveston, Harrisburg & San Antonio Railway Co., that the testimony of the plaintiff was sufficient to show that a monthly deduction of wages was made by the company with the understanding that the employe, when sick or injured, should be entitled to hospital benefits at the company's expense, and this would imply and mean, in the absence of an understanding to the contrary, the continuance of the benefits while the sickness or injury required same. Moreover, the company could not, by secret rules, or rules not communicated to its employes, change its relation to them.

X-Ray Burns Evidence of Malpractice.—The Supreme Court of Iowa says that the malpractice case of Shockley vs. Tucker was submitted to the jury solely on the question whether the defendant had been negligent in his method of using the *x*-rays in the treatment of the plaintiff, and that it thinks this was a question of science and skill, wholly independent of the methods of treatment of any particular school. That the plaintiff was severely burned in his abdomen by the use of the *x*-rays, and suffered great pain and extended, if not permanent, disability therefrom, was clearly shown; and the court hardly thinks it would be contended that such burning was proper treatment for any disease, or in accordance with the theories of any school. The witnesses were shown to be competent to testify as to the nature of the burns which are caused by an improper use of the *x*-rays; and, whatever error might have been committed in allowing them to testify as to whether the *x*-ray treatment was proper for appendicitis, it was without prejudice. The court thinks that the fact that the plaintiff was severely burned was some evidence in itself that the treatment was improper. But it was not proper, in making out a case for the plaintiff, to show incompetence and negligence in other cases by proving the results of the defendant's treatment in such cases.

Communications to Physician to Further Criminal Purpose.—The Minnesota statute provides that: "A regular physician or surgeon can not without the consent of his patient be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." In the case of McKenzie vs. Banks the defendant called as a witness a physician, who testified that the plaintiff called on him; that he did not prescribe for her or treat her, and that he received no information from her which was necessary to enable him to prescribe or to act for her. The defendant then offered to prove by the witness that the plaintiff told him that she was with child and asked him to produce a miscarriage on her, not, however, on account of her health, but because she had too many children and did not want any more; and, further, that the request was refused by the witness. The evidence was objected to by the plaintiff, among other reasons, on the ground that it was an attempt to prove a privileged communication. But the Supreme Court of Minnesota holds that the evidence was not privileged. It says that it is clear that the communication to the physician sought to be proved by him was not acquired by him in attending the plaintiff, nor was it necessary to enable him to prescribe or act for her within the meaning of this statute. If the plaintiff made the statement assumed in the offer it was nothing more than an open request to the physician to join in a conspiracy to commit a vile crime, and it fell within the rule that professional communications are not privileged if made in furtherance of a criminal purpose.

Physical Examination for Impotency.—The Third Appellate Division of the Supreme Court of New York does not think that, in Gore vs. Gore, an action brought by a wife to annul her marriage to the defendant on account of his alleged physical incapacity and impotency, the objection was well taken that the court had no authority to grant an order requiring a physical examination of the defendant. It says that the old court of chancery never refused, that it can discover, to exercise such authority. On the contrary, it would never grant a decree annulling a marriage on that ground until such an examination had been had by competent and disinterested surgeons named or approved by the court, and such an examination would be directed, and the defendant ordered to submit thereto, on the court's own motion, in the event that neither party applied, on the ground that public policy required such proof of such a charge in order to warrant a dissolution of the marriage contract on that ground. Any less efficient proof was clearly so liable to collusion that it was deemed insufficient and unsatisfactory. But the court does not think that the order should direct the deposition of the physicians to be taken out of court and before trial. It says that it is of the opinion that no part of such an examination should in any instance, unless some peculiar and unusual features require it, be had at any other time than during the progress of the trial, or the taking of the evidence on default, in order that whenever practicable the whole proceeding may be under the immediate direction of the court. The proceeding at its best is a harsh and offensive one, and it will naturally be less trying to the defendant if it is conducted before the court itself. Also the testimony of the physicians as to the result of their personal examination will be more satisfactory to the court itself if taken before the court than if taken on a reference and produced second-hand.

Rank and Right of Physicians' Claims Against Estates.—Section 3347 of the Iowa Code provides that, subject to the expenses of administration, the charges resulting from the last sickness and funeral of the deceased, and allowance made for the maintenance of the widow and minor children, shall be first paid. All "other demands against the estate" are then separated, by section 3348, into five classes: 1, Preferred claims of the United States; 2, public rates and taxes; 3, claims filed within the first six months of administration; 4, all other debts, and 5, legacies and distributive shares—which classes are entitled to priority in the order named. Section 3349 provides that, "All claims of the fourth of the above classes not filed and allowed or if filed and notice thereof as hereinbefore provided is not served within twelve months from the giving of the notice aforesaid, will be barred." An administrator took the ground that, conceding that the claim of certain physicians came within the preferred class, by failure to file such claim within the first six months, it was relegated to the fourth class mentioned in section 3348; and, failing to file it within the year provided for claims of that class, it was barred, under the terms of section 3349. But the Supreme Court of Iowa holds otherwise. It says, in the case of Wolfe vs. Knapp, that, under the provisions above cited, creditors of the preferred class, to which the physicians belonged, are entitled to be first paid in full, even though it exhausts the entire estate. For the purposes of argument it may be conceded, as the administrator contended, that the preferred claims should be filed for allowance in the manner required for the allowance of other claims against the estate. It may also be conceded that failure to file and prove such claim within six months or twelve months may sometimes operate to defeat the preference to which it would otherwise be entitled, but not because such preferred claim is barred under section 3349. For instance, if the estate be insufficient to pay all creditors in full, and the physician or other preferred creditor neglects to file his claim until more than a year of administration has passed, and distribution is made or ordered on the basis of the claims appearing on file, he may well be held estopped by his own laches for coming in at such a late day and insisting on his priority. But where the estate is entirely solvent, and the rights of no other creditor are in any manner prejudiced by the delay, it will not lie in the mouth of the administrator to object to payment because the demand was not presented more promptly. The above classification is primarily for the benefit and protection of creditors, and not merely of the administrator; and, if the former be not prejudiced by the belated payment of the preferred claim, the latter should not be permitted to escape an honest debt, for the satisfaction of which it is admitted he has ample funds of the estate in his hand.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

June 17.

1. Relations of Public Health Science to Other Sciences. W. T. Sedgwick, Boston.
2 *Knee Injuries and How to Manage Them. De Forest Willard, Philadelphia.
3 Tropical Anemia. M. J. Rosenau, Washington, D. C.
4 *Present Status of Roentgen-Ray Therapy in Dermatology. J. H. Comroe, Philadelphia.
5 *Encephalitis and Other Nervous Affections Complicating Scarlatina. J. H. W. Rhein, Philadelphia.

2. **Knee Injuries.**—Willard discusses sprains, with or without laceration of ligaments; contusions, displacement of semilunar cartilages; loose bodies; sensitive joints, often called hysteric; blood clots in the joint, and synovitic effusions. He summarizes his papers as follows:

1. Apparently slight injuries of the knee often prove more lasting and annoying than those of a more positive nature, as fracture or dislocation.
2. Every injury of the knee should receive careful examination, since laceration of ligaments or of periarticular tissues, or displacement of semilunar cartilages, or of loose bodies, may have occurred. Obscure fractures, also, are not uncommon.
3. Every injured knee required rest during its acute inflammatory stage; rest in bed, fixed dressings, and crutches are needful. Heat and cold are two powerful agents in aborting a threatened inflammaton.
4. Adhesive plaster strapping is of great value in securing partial restraint of a knee and in producing absorption of effusion. Restricting apparatus should be used with discrimination.
5. Blood clots in the joints should be removed by incision and flushing.
6. Effusions, if large, should be removed by aspiration, or incision followed by weak iodin injection.
7. Displaced semilunar cartilages should be stitched in position, or removed. Loose cartilaginous bodies should be removed.
8. Motion is the normal condition of joints, consequently massage and voluntary motions should be instituted as soon as the inflammatory stage has passed. Neglect of this precaution may result in a neuromimetic patient and a chronic cripple.
9. Sensitive neurotic knees should not be mistaken for diseased ones.
10. Complete primary rest during the inflammatory stage, followed by massage, voluntary and involuntary movements, gymnastic exercises, hot-air treatment, hot and cold douchings, etc., are the best means at our command for preventing ankylosis.
11. Should ankylosis follow, forcible straightenings, tenotomies, osteotomies, etc., may be required.

4. **Roentgen Ray In Dermatology.**—Comroe's conclusions as to the value of the Roentgen ray in the treatment of diseases of the skin are as follows:

1. Radiotherapy must not be considered a panacea. Although it has a large field of usefulness, it also has its limitations and dangers.
2. Most consistently good results are obtained in epithelioma, rodent ulcer and acne.

3. Great benefit may be looked for in eczema, chiefly the vesicular variety affecting the hands, sycosis, tinea tonsurans, verruca, lichen planus, nevuses and port wine marks, localized pruritus, favus, etc.

4. Deepseated epitheliomas, with exposure of bone, cartilage, etc., appear to do well for a while, but usually get worse eventually. The judicious combination of radiotherapy and operation is highly recommended in these cases.

5. The Roentgen rays are beneficial when pain is particularly to be avoided, as in old, feeble people.

6. Radiotherapy produces the best cosmetic results.

7. Recurrences after radiotherapy are less frequent than after other methods, and are more amenable to re-application of the rays.

8. The high vacuum tube is preferable in epithelioma, rodent ulcer, and lupus, the medium or soft tube being employed in other cases.

9. Radiotherapeutic treatment should be instituted as soon as possible, the result being usually in direct proportion to this factor.

10. Epithelioma of the skin usually reacts better than that involving the mucous membranes.

11. Tampering with caustics and other irrational forms of treatment are to be condemned as measures preceding radiotherapy, since they undoubtedly unfavorably alter the prognosis in such cases.

12. No rule can be laid down for the prevention of burns, etc.; hence the dosage must be carefully regulated in each individual case.

13. No protective ointments, powders, etc., must remain on the part treated, since they may prohibit or lessen the effect of the rays by interfering with their passage.

5. **Nervous Affections Complicating Scarlatina.**—In the case reported by Rhein, while, clinically, symptoms of meningitis or irritation of the brain were practically absent, pathologically, there was evidence of beginning pachymeningitis and encephalitis. The most common complications of scarlatina on the part of the nervous system, says Rhein, are hemoplegia and peripheral neuritis. More rarely this disease may be followed by paraplegia, optic neuritis, amaurosis, tetany, pseudoataxia, neuralgia, epilepsy, disseminated sclerosis, Friedreich's ataxia, hysteria, chorea, hydrocephalus, meningitis and disordered mental states. With the exception of hemiplegia and imbecility, the prognosis is good, if we exclude those rare organic cases such as Friedreich's ataxia, disseminated schlerosis, and epilepsy, which are recorded as following scarlatina. Some of those conditions, like Friedreich's ataxia, are probably merely hastened in their manifestations by the scarlatinal process. The pathologic findings consist of thrombosis, embolism, small cerebral hemorrhage, rarely abscess of the brain, congestion of the brain, meningitis, and finally meningitis and encephalitis.

Medical Record, New York.

June 17.

6 *Carbon Factor in Gout: "Hyperemia." F. Hare, London.
7 Removal of the Lens in Myopia. J. L. Barnes, New York.
8 *Rectal Injections of Large Doses of Sodium Salicylate in Cerebrospinal Meningitis. A. Seibert, New York.
9 Medical Phases of Immigration Legislation. V. G. Heiser, Manila.
10 *Masturbation in Childhood. A. A. Strasser, Arlington, N. J.
11 Saw Palmetto in Tonsillitis. I. L. Van Zandt, Ft. Worth, Texas.

6. **Carbon Factor in Gout.**—Hare's theory of the nature of gout, is the retention in the body of carbonaceous material. Normally there must be a systematic equilibrium between the carbonization of the blood from the body's carbon intake and its decarbonization, but Hare believes that at times this balance may be disturbed and carbonaceous material accumulate in the blood to an ultra-physiologic or pathologic degree. To this hypothetical state he applies the term hyperpyremia, and to the normal state, the term pyremia. The means by which hyperpyremia may be dispersed are numerous, and include bilious attacks, migraine, gastralgia with anorexia, asthma, major epilepsy, and acute articular gout. Some of these operate through increased expenditure, others through restricting the intake, and their action is called by the author, carbonization. The mechanism of acute articular gout involves an interdependence between hyperpyremia and uricemia, through which the kidneys at times become more active in excreting uric acid, that is, the renal disability depending on hyperpyremia is terminated by a carbonization of the blood. Hare summarizes as follows his view of the steps in acute gout: (1) Hyperpyremia from excess of carbonaceous income or deficiency of carbonaceous expenditure. (2) Progressive accumulation of uric acid in the blood; uricemia. (3) Deposition of a portion of the uric acid in a joint. (4) Acute arthritis. (5) Pyrexia involving increased combustion. (6) Acarbonization of the blood. (7) Free renal elimination of uric acid retained in the blood. (8) Recovery by the blood of its solvent powder for uric acid. (9) Reabsorption of the extravascular articular deposits of uric acid. Thus the acute gouty paroxysm may be regarded as a "pathologic function"—as a conservative reinforcement of inadequate physiologic function; and uric acid may be regarded as an essential instrument therein.

8. **Sodium Salicylate in Cerebrospinal Meningitis.**—Seibert believes that the administration of large doses of sodium salicylate, given by rectum to avoid gastric disturbances, forms the most satisfactory plan of treatment of this disease. Five cases are described in which the use of large doses of the drug appeared to exert a powerful curative effect. According to the age of the patients, sodium salicylate was given by rectum in fifteen grain doses dissolved in a tablespoonful of water, at intervals of from one to eight hours, the salicylization being gradually reduced as improvement followed. In one case, that of a boy aged four and a half years, who had had the disease for seven weeks some months previously, and presented numerous sequelæ such as contractures, hemiplegia, strabismus, etc., very remarkable improvement followed the treatment, though it was begun at so late a date. In a tuberculous case, the salicylate did not appear to be effective. Effective sodium salicylate solutions must retain the color of distilled water. Yellow discoloration proves chemical changes, rendering the drug inefficient. When the rectal mucosa becomes irritated, a further dilution of the drug is indicated. Lateral compression of the sphincter ani assists in retaining the solution in the bowel. Small doses, given at shorter intervals, are ineffective.

10. **Masturbation in Childhood.**—Strasser analyzes the physical and other causes which may lead to the development of this vice, and also discusses the treatment. This consists mainly in prophylaxis and moral suasion, proper mental exercise, and hydrotherapy, rather than the sedative and tonic drugs usually advocated.

Boston Medical and Surgical Journal.

June 15.

12 *Experimental Study of the Accuracy of Modern Clinical Methods for the Diagnosis of Disorders of the Stomach. H. F. Hewes, Boston.
13 Individual Factors in Hygiene. R. C. Cabot, Boston, and P. K. Brown, San Francisco.
14 Effects of Tobacco on the Throat. S. W. Langmaid, Boston.
15 *Treatment of Status Epilepticus. A. Morton, Palmer, Mass.
16 Reflexes in Epilepsy. A. Morton.
17 Exhaustion Paralysis in Epilepsy. M. B. Hodskins.
18 *Hypochlorization Method of Treatment of Epilepsy. A. Morton.
19 Lumbar Puncture in Status Epilepticus. M. Hodskins and A. Morton.

12. **Diagnosis of Gastrectasis.**—Hewes for some time has been making an experimental study of the question of the diagnosis of the conditions of stasis in stomach cases to determine as far as possible just what means are at our disposal for the investigation of this point in clinical work, and how great accuracy in diagnosis of the conditions can be attained by the employment of this means to its full extent in routine in the clinic.

His experimental work consisted of the study of 180 cases of various stomach conditions, including the normal condition, and the numerous varieties of stomach disorder as they appear in the clinic, with special regard to the selection of such clinical findings as will aid in the differentiation of conditions of stasis from other conditions of the stomach. The method of investigation adopted was that commonly recognized as the most useful single method for determining the existence of gastrectasis in clinical work, the examination of the contents of the fasting stomach. A comparative study of the records of these 120 cases in regard to the characteristics of the fasting contents indicated that the pathognomonic characteristics of stasis contents were never present in the normal or in other stomach disorders, so that their presence in a case might be significant in differential diagnosis. These were: (1) The presence of an abnormal food residue; (2) the presence of sarcinæ; (3) the presence of lactic acid; (4) the presence of abnormal yeast fermentation. An investigation of the records of the two sets of cases included in the research, the 26 stasis cases and the 154 no-stasis cases, including the 20 normal and 134 abnormal, in regard to these essential or special stasis characteristics, shows the following facts: The first factor, the abnormal food residue in the fasting contents, was present in 24 of the 26 stasis cases. In 2 cases, no food residue, other than the scattered particles which are found in normal contents could be determined. In the 134 no-stasis cases a distinct food residue, recognizable as such by the eye or microscope, was not present in any case. The three remaining characteristics are occasional factors. Thus sarcinæ were present in 7 out of 26 cases, lactic acid in 8, yeast fermentation in 18. No one finding is present in all cases of stasis, and one of the findings may be present where another fails. The condition of stasis can not, therefore, be ruled out in any given case except by a routine application of all tests. Hewes says that the method of research for the determination of the existence or nonexistence of stasis in a given case should be as follows: The stomach contents should first be examined for the presence of the most constant characteristic, the food residue. If this finding is positive, the diagnosis of general motor insufficiency or pyloric obstruction is made, and no further investigation of this special point is necessary. If this test is lacking or doubtful, each of the three additional tests, the sarcinæ test, the lactic acid test and the yeast fermentation test, should be tried in turn. If any one of these is positive the diagnosis of stasis is still positive, though in this case the stagnation may be local as well as general. If all four tests are negative the existence of stasis may be regarded as not proved.

The summary of the special record which forms this experimental test is as follows:

Among 180 cases included in Hewes' investigation, 39 patients came to the surgical operation or to postmortem examination. In these 39 cases, 21 had a clinical diagnosis of stasis and 18 a diagnosis of no-stasis. In the 21 cases of clinical stasis an anatomic finding of obstruction of the pylorus that is of an actual anatomic cause for insufficient drainage, was found in every case. The actual pathologic findings in these 21 stasis or obstruction cases were: Cancer at the pylorus, 11 cases; ulcer at the pylorus, 9 cases; adhesions about the pylorus, 1 case. In the 18 clinical nostasis cases, the pylorus was found to be intact or patent in every case. The actual pathologic findings present in these cases were: Cancer of the stomach, 10 cases; ulcer of the stomach, 3 cases; chronic gastritis, 2 cases; no demonstrable lesion of the stomach, 3 cases.

That is, in the 39 cases in which it was possible to obtain an actual test of the accuracy or the significance of the clinical finding, the finding of stasis (twelve-hour stasis) was discovered to be an associate and sign of a pathologic lesion of the stomach of a serious character. No lesions of the pylorus were found in any of the test cases which did not show stasis. Three indications of importance in connection with the study of stomach conditions are: (1) The existence of obstruction of the pylorus in a given case can always be diagnosticated by a proper method of investigation; (2) the clinical sign of stasis (twelve-hour stasis) as a constant feature of a case is always a sign of a serious condition; (3) stasis is not, as a rule, an associate of even the serious stomach conditions as cancer or ulcer; unless the lesion is situated in the region of the pylorus.

15. **Treatment of Status Epilepticus.**—During the past twelve months Morton has used a sterile solution of sodium bromid hypodermically in many cases, and generally with good results. The best results were obtained with a solution of the sodium salt of the strength of 30 grains to the ounce. Stronger solutions than this are too irritant and are apt to produce abscesses. The solution, even in this strength, should never be injected in large quantities into the thighs and breasts. The site selected for the injection is the back just below the angle of the scapula. Here several ounces of the solution may be injected without fear of abscess formation. The amount of bromid injected varied in different cases; frequently from 60 to 100 grains will control the convulsions; but sometimes 180 grains or 6 ounces of the solution have to be injected before the desired result is obtained. The earlier the injections are commenced the better. If certain patients, who are apt to have series of convulsions or to develop status, have two convulsions in succession, they at once receive ten hypodermic injections, twenty minims each, of the sterile sodium bromid solution. If the patient continues to have convulsions, ten of the small hypodermic injections are given after each convulsion until the patient has received forty injections with the small syringe. If the patient continues to have convulsions after having received forty of the small injections from 1 to 4 ounces of the solution are injected into the tissues of the back. For these last injections, a large antitoxin syringe is used. Morton made use of lumbar puncture in cases of status epilepticus in seven cases with varying results. Three patients died. In none of the cases was it used during the first of the attack; but only after repeated injections of sodium bromid and other agents had failed to control the seizures. Four of the patients showed a marked improvement after the withdrawal of from 10 to 15 c.c. of cerebrospinal fluid, while in the others, there was little if any permanent effect obtained. In five of the cases the fluid was under increased pressure. In one of the cases 20 c.c. of the fluid were withdrawn after which 10 c.c. of sterile sodium bromid solution, 30 grains to the ounce, were injected into the subdural space. The patient, who had had twenty-five hard convulsions up to the time of the puncture, ceased having them and had only one more in the next fifteen hours. While the results have been varied, Morton feels that lumbar puncture may serve a useful purpose in the treatment of status epilepticus, especially in those cases in which there is increased intracranial pressure. The earlier the puncture is performed the better will be the results.

18. **Hypochlorization Method of Treatment of Epilepsy.**—The hypochlorization treatment has been in use at the Massachusetts Hospital for Epileptics for several years. Morton has had 24 patients who are either feeble-minded, idiotic or demented on this treatment for two and one-half years. The diet of these patients has consisted mostly of milk, eggs, bread and butter, gruel and soups, to which has been added enough sodium bromid so that each patient received about 15 grains a day. Sodium chlorid has not been entirely excluded from their diet. The results in this class of cases were very encouraging. The number of attacks decreased markedly, and the patients were much quieter than they were before the treatment was commenced. The hypochlorization method controls the convulsions, requiring only about one-half the amount of bromid usually given. It has little or no effect on the general nutrition of the patient, but is apt to cause constipation. It does not furnish enough salt to satisfy the patient's craving, but may be used with success with intelligent patients. A modified salt-poor diet, in which about equal parts of sodium chlorid and sodium bromid are used in the food may be used to advantage with iodiotic and demented patients if their diet can be controlled absolutely. Bromism is comparatively rare.

Medical News, New York.

June 17.

20 Value of Lumbar Puncture, with Particular Reference to the Diagnosis of Tuberculous Meningitis. E. P. Bernstein, New York.
21 Bacterial and Cellular Examination of the Spinal Fluid in Fifty Cases of Cerebrospinal Meningitis. T. W. Hastings, New York.
22 *Gall-Bladder Surgery, with Especial Reference to Early Diagnosis and Early Operative Interference in Cholecystectomies, with Brief Summary of Twenty-eight Cases, Including Six Cholecystectomies. F. Martin, Baltimore.
23 Adulteration and Substitution. G. C. Diekman, New York.
24 Colds and the Prevention of Colds. N. James, New York.
25 Carbohydrate Reactions of the Paratyphoid or Paracolon Group (Preliminary Communication). W. W. Ford, Baltimore.

22. **Gall-Bladder Surgery.**—Martin says that any case of gallstones is of such importance as to demand surgical aid, whether the patient has symptoms or not, for in these early recognized cases simple uncomplicated operations can be done and brilliant results achieved. The method of operation which provides free and thorough drainage of the gall ducts and gall bladder should be the method of choice. It is Martin's opinion that when one has to do with a badly infected or possibly gangrenous gall bladder, with necrosis of the adjacent liver structure and local peritonitis, the offending organ would better be extirpated. Martin gives a summary of 28 cases; 19 cases

of cholelithiasis, with cholecystitis in one form or another, the location of the stones being both in the common duct and in the gall bladder. In 5 cases the stones were found in both common duct and gall bladder, and in the rest of the cases they were confined to the gall bladder. There were 4 cases of malignant diseases of the biliary tract, in 2 of which the patient died following operation; the others were left unimproved. Of these 28 cases there have been 6 cholecystectomies, in all of which the patients made excellent recoveries; 3 were done for acute perforative cholecystitis, or empyema of the gall bladder, in which the gall bladder was gangrenous; 1 for chronic cholecystitis, with a large stone in the gall bladder; 1 for hydrops of the gall bladder which was large and distended, due to a large stone being impacted in the cystic duct, and 1 case for biliary fistula, with stones in the gall bladder and common duct. Four of the cholecystectomy cases turned out to be liver abscesses; the patients were sent to the hospital, however, as gall-bladder cases, and were put on this list. In all of these cases the abdomen was opened and freely drained and the patients made good recoveries. In 1 case there is gumma of the liver and perihepatitis. An exploratory laparotomy was done and no opening of the biliary tract was found necessary. The wound healed under one dressing and the patient is getting well under the use of iodid of potash.

New York Medical Journal.

June 17.

26 Modern Doctor. A. Jacobi, New York. (To be Concluded.)
27 Etiology and Diagnosis of Cholelithiasis. W. Ruoff, Philadelphia.
28 *Clinical Experience with Antitoxin and Advantage of Large Doses. L. Fischer, New York.
29 *Observations on the Diagnosis of Herpes Zoster. D. M. O. Robinson., New York.
30 *Local Versus General Anesthesia in Rectal Surgery. J. P. Tuttle, New York.
31 *Fibroid Tumors of the Uterus; Their Surgical Treatment. F. H. Martin, Chicago.
32 Shot at Christian Science from a Toy Pistol. A. C. McClanahan, Chicago.
33 Problem of the Tropics; the Interrelation of Certain Social and Business Questions. G. A. England, Plantation, Maine.

28. **Clinical Experience with Antitoxin.**—Fischer discusses the relative merits of large and small doses of antitoxin, and in this connection cites statistics taken from the clinical records of the Willard Parker Hospital. The antitoxin used at this hospital is known as the New York Board of Health serum. The strength is about such that 1 c.c. equals 400 to 500 units; 10 to 20 c.c. being the usual dose. For three months in 1903, out of a total of 361 cases, pharyngeal and intubated, there were 76 deaths, or about 21 per cent., under small doses of antitoxin. For four months in 1904 there were 469 cases, with 66 deaths, or about 14 per cent., under large doses of antitoxin. Fischer points out that the Willard Parker Hospital is a city hospital, and hence when septic cases, unsuccessful tube cases with diphtheria, or cases complicated by pneumonia are sent in, the mortality is increased considerably. If these patients, who are sent into the hospital frequently in a moribund condition, and those that die within twenty-four hours after admission, could be deducted, the statistics would prove the specific value of antitoxin more forcibly. In the Municipal Hospital of Philadelphia the mortality during the pre-antitoxin period was 29.58, while during the antitoxin period it was only 22.2. Statistics from other hospitals make the same showing. When large doses of antitoxin are used the mortality always is lower than when small doses are used.

29. **Treatment of Herpes Zoster.**—The plan recommended by Robinson is as follows:

Rest, attention to the general nutrition of the body, the ground for the microbes, the application of cold over the affected ganglia, a coal-tar preparation for the toxemia, and codein and bromid of potassium for pain not controlled by the antipyrin. Local treatment consists in aseptic and antiseptic measures. If the case is seen at a very early stage, the affected area can be disinfected in the usual manner by soap and alcohol and then painted with flexible collodion—and when convenient an antiseptic gauze applied. If seen later, when vesicles are changing in color, an ointment of boric acid and bismuth subnitrite, and avoidance of soap and water meet the indications. Later, ichthyol may be added to the ointment, or an antiparasitic preparation, as the ammoniated chlorid of mercury ointment with rose ointment to which bismuth may be added and also ichthyol. For the persistent neuralgias following zoster, anodynes and the faradic current or x-ray may be of some curative value, but on account of probable structural changes in the nerves and connective tissue of the ganglia, the condition is very rebellious to usual methods of treatment for neuralgia. Tonics, such as phosphid of zinc, and alteratives, such as arsenic, are also recommended.

30. **Anesthesia in Rectal Surgery.**—Tuttle says that simple fissures, small straight uncomplicated fistulas, ordinary skin tabs, isolated, prolapsing internal hemorrhoids in patients with stable nervous organisms may all be satisfactorily operated on with local anesthetics, of which cocain and eucain are the best. In all other conditions, including extensive hemorrhoids, complicated fissures and fistulas, and always in neurotic hyperesthetic individuals we should resort to general anesthesia.

31. **Surgical Treatment of Uterine Fibroids.**—The conclusions presented by Martin are based on an analysis of the last 200 consecutive cases of fibroids of the uterus in which he operated by hysterectomy or myomectomy up to Dec. 1, 1904, on the analysis of 1,188 cases reported by Dr. C. P. Noble, and on knowledge gained by the different forms of less radical operative procedures and on the non-operative methods employed by himself during a period of over eighteen years in caring for more than 400 cases not submitted to radical operation. Among the inherent conditions giving rise to dangerous symptoms in the 200 cases were the following: (1) Enormous development of growth rendering operative interference imperative, which occurred in 11 cases, or 5.5 per cent.; (2) dangerous uncontrollable hemorrhage in 41 of the cases, or 20.5 per cent.; (3) pregnancy complicating the tumor, making operation necessary in 6 cases, or 3 per cent.; (4) carcinoma of the cervix in 2 cases, or 1 per cent.

The following inherent conditions of importance were discovered when the tumors were removed:

(1) Serious broad ligament extension in 19 cases, or 9.5 per cent.; (2) serious adhesions to soft parts in 8 cases, or 4 per cent.; (3) cystic degeneration of tumor in 8 cases, or 4 per cent.; (4) myxomatous degeneration in 30 cases, or 14 per cent.; (5) calcareous infiltration of the tumor in 6 cases, or 3 per cent.; (6) deep suppuration of the tumor in 2 cases, or 1 per cent.; (7) carcinoma of the body of the uterus complicating the tumor in 3 cases, or 1.5 per cent.; (8) sarcoma complicating the tumor in 2 cases, or 1 per cent.; (9) senile endometritis giving rise to severe symptoms after the menopause occurred in 3 cases, or 1.5 per cent.; (10) suppurative endometritis was a complication in 5 cases, or 2.5 per cent.; (11) submucous projection of fibroid centers which produced serious symptoms occurred in 11 cases, or 5.5 per cent.; (12) necrosis of the center of the tumor occurred in 3 cases, or in 1.5 per cent.

Accessory conditions depending on or complicating the fibroids were the following:

(1) Pyosalpinx (double) in 20 cases, or 10 per cent.; (2) pyosalpinx (single) in 5 cases, or 2.5 per cent.; (3) hydrosalpinx in 6 cases, or 3 per cent.; (4) cystic ovaries (double) in 7 cases, or 3.5 per cent.; (5) malignant adenocystoma of the ovaries in 1 case, or 0.5 per cent.; (6) parovarian cysts in 5 cases, or 2.5 per cent.; (7) dermoid cysts of the ovary in 5 cases, or 2.5 per cent.; (8) large adenocystomas in 7 cases, or 3.5 per cent.; (9) hematoma in the left broad ligament in 4 cases, and in the right broad ligament in 3 cases, making a total of 7 cases, or 3.5 per cent.; (10) varicose veins in the broad ligaments in 5 cases, or 2.5 per cent.; serious extensive intestinal adhesions in 8 cases, or 4 per cent.; serious and chronic intestinal obstruction from tumor pressure in 7 cases, or 3.5 per cent.; (12) acute intestinal obstruction from pressure in 2 cases, or 1 per cent.; (13) serious pressure symptoms in 13 cases, or 7.5 per cent.; (14) appendicitis in 6 cases, or 3 per cent.; (15) extrauterine pregnancy in 2 cases, or 1 per cent.; (16) pregnancy complicating large subperitoneal fibroids, in which tumors were removed and pregnancies allowed to go to term, 3 cases, or 1.5 per cent.; (17) tuberculous peritonitis complicating the tumor in 3 cases, or 1.5 per cent.; (17) dilated ureters from obstruction caused by tumor pressure in 2 cases, or 1 per cent.; (19) hydronephrosis (large size) from tumor pressure, in 2 cases, or 1 per cent.

From all this material Martin draws the following conclusions:

1. The routine treatment for fibroids of the uterus, presenting symptoms, in women under 45 years of age, should be supravaginal hysterectomy, except as hereinafter stated. The exception to this rule should be (a) in subperitoneal tumors either pedunculated or not, in which only one or more distinct developments exist which do not materially increase the size of the uterus proper and the area of its endometrium, when myomectomies may be resorted to; (b) in fibroids which present excessive hemorrhagic tendencies, in which the hemoglobin is reduced below 25 per cent., or in which serious vascular cardiac or kidney complications exist which greatly increase the risk of the operation, when a preliminiary operation of vaginal ligation of the uterine arteries should be resorted to; (c) in cases where a radical operation will not be accepted, a curettement and vaginal ligation of the uterine arteries may be resorted to, or, if no operation at all will be accepted, general tonics, ergotin in tonic doses, and galvanism scientifically applied may be depended on to relieve the patient materially, and occasionally tide them over the menopause to a complete symptomatic cure.

2. The treatment for large, complicated tumors, without regard to age, or large apparently uncomplicated tumors in which symptoms of hemorrhage or pressure exist, should be submitted to supravaginal hysterectomy.

3. Tumors of medium size apparently uncomplicated in women over 45 years of age may be managed by one of the less radical forms of treatment as: (a) when the tumors are of the symmetrical development type, enlarging uniformly the uterus, and the principal symptom is an exaggerated menstrual flow, the cases may

almost invariably be relieved by galvanism and tided over the menopause; or (b) if the growth is of the irregular type which has distorted more or less the uterine cavity, the case should be submitted to dilatation, finger exploration, curettement and, if considerable flowing is a symptom, vaginal ligation of the uterine arteries, with the idea of obtaining a symptomatic cure over the menopause.

(4) The extremely small class of tumors coming under the head of inoperable cases must be managed on general principles. Rest in bed, general tonics, treatment of the cardiovascular and kidney complications when they exist, curetting and irrigating for septic endometritis, electricity for pain and hemorrhage, ligation of the uterine blood supply if practicable for intractable hemorrhage and vaginal incision of impacted cysts or pus accumulation.

Lancet-Clinic, Cincinnati.

June 17.

34 Thyroidectomy in the Treatment of Exophthalmic Goiter. J. Ransohoff, Cincinnati.
35 Vital Values. C. H. Vaught, Richmond, Ky.
36 *Treatment of Diphtheria. M. A. Albl, Cleveland, Ohio.
37 Two Cases of Cesarean Section. J. F. Baldwin, Columbus, Ohio.

36. **Treatment of Diphtheria.**—Albl's paper is based on a personal experience in 106 cases, 37 of which occurred prior to the period of antitoxin, and 69 since. Of the first 37 cases, 25 were uncomplicated, the membrane extending over the tonsils and uvula only. In 4 the membrane extended into the nose and pharynx; and in 4 there was extension into the larynx as well; 4 were purely laryngeal. The mortality rate in this series of 37 was 30 per cent. Of the 11 fatal cases 7 were pharyngeal, 4 were laryngeal. Since the period of antitoxin he has treated 69 cases, 48 of which were pharyngeal and nasopharyngeal, 10 were purely laryngeal, and 8 were pharyngeal and laryngeal. In this group the mortality rate was reduced to 5.8 per cent. Of the 4 fatal cases 2 were of the buccal variety, 1 pharyngeal and 1 nasopharyngeal. Of the 36 patients treated by the antitoxin method 7 were between six months and one year old, 16 between one and three years, 28 between three and five, 15 between five and twelve. Of these 41 were females and 15 were males.

St. Louis Medical Review.

June 10.

38 Determination of Responsibility in and the Care of the Criminal Insane. H. J. Scherck, St. Louis.
39 Rupture of the Gall Bladder (Spontaneous and Traumatic, with and Without Operation); an Historical Review of 273 Cases. B. M. Ricketts, Cincinnati, Ohio.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

May.

40 Naval and Military Medical Officer. T. Roosevelt.
41 Medical Corps of the United States Navy. Some Details Respecting Its Past and Present. J. N. Hyde, Chicago.
42 Treatment of Upward Dislocation of the Acromial End of the Clavicle in the Tropics. P. R. Egan.
43 *Dangers of Unrestricted Traveling of Consumptives. J. W. Trask.
44 Medical Service of an Army in Modern War. W. D. McCaw.

43. **Dangers of Unrestricted Traveling of Consumptives.**—After having lived for two years at a sanitarium having approximately 200 consumptive patients, with whom he was continually in intimate contact, Thrask arrives at the conclusion that there is less danger of the infection in a well-regulated institution than there is in ordinary city life, and many times less than in traveling, where one is apt to use berths on trains, rooms in hotels, and dishes at meals that have been used previously by those suffering from pulmonary tuberculosis. He urges notification of the proper officials of the existence of cases of tuberculosis, as is at present the custom in the acute contagious diseases. Health officers should thoroughly instruct such patients as to the proper care of sputum, sterilization of all articles used in eating, sterilization of soiled handkerchiefs, the dangers from rugs, carpets, plush upholstered furniture, etc.; the disinfection of houses, if desired; proper building of railway coaches having in view simplicity of arrangement and furnishing, thus permitting of easy sterilization; disinfections of cars at the end of each trip, or two or three times a week; the use of sputum cups while on the train; special compartments for consumptives; disinfection of rooms in hotels occupied by consumptive guests; sterilization of all dishes and eating utensils, and, to make the campaign thorough, periodical disinfection of public bulidings.

Pennsylvania Medical Journal, Athens.

May.

45 *Prevention of Tuberculosis. H. S. Anders, Philadelphia.
46 Boils. G. W. Guthrie, Wilkesbarre.
47 Extract of Suprarenal Gland in Surgical Shock; a Report of Two Cases in which the Drug was Used. A. R. Craig, Columbia.
48 Case of Cesarean Section Done After Failure to Effect Version in an Impacted Transverse Presentation. G. W. Wagoner, Johnstown.
49 Is the Optometrist Legally and Scientifically Qualified to Practice Medicine? P. J. Kress, Allentown.
50 *Treatment of Infected Wounds with a Phenol Product. C. B. Longenecker, Philadelphia.
51 Craniectomy in Microcephaly. W. D. Teagarden, Washington.
52 Carbolic Acid and Ammonia Burns of the Eye. E. Stieren, Pittsburg.
53 Perirectal Abscess. J. A. Hawkins, Pittsburg.

45. **Prevention of Tuberculosis.**—Anders points out briefly a few indications along the lines of prevention. Alcoholism, whether the result of moderate or excessive but habitual use of the ordinary so-called beverages or drinks, or in the still more subtle and dangerous form of patent or proprietary medicines, the majority of which are obnoxiously alcoholic, should be warned against as one of the most insidious filchers of good health and that vital resistance which laughs at tubercle bacilli. There should be effectual legislation against the granting of marriage licenses to consumptives. More consideration should be given to the prevention of tuberculosis among children. Better provision for the care of the poor, weak, delicate, anemic lads and girls in ill-ventilated, foul, dark and dirty mills and stores, is an imperative and widespread need. Here is a magnificent opportunity for philanthropy; a serious duty of the municipality. The common use of public drinking cups is extremely risky. Travelers should use their personal cups. Individual cups should be used in the public and parochial schools as well as in the few private academies where they are now used. It is encouraging to note that in the twelve years since the agitation began in Rochester, N. Y., and in Philadelphia, the adoption of individual communion cups has occurred in approximately 2,500 churches of the principal denominations of the United States. School children should be taught the fundamental facts about tuberculosis in the course of hygiene, such as proper modes of living especially antagonistic to the development of the disease, cleanliness in the home, and so forth. In fact, "the essentials of our knowledge regarding tuberculosis should be known to everybody. In the public school, in the family, and in the secular, religious and professional press, the elementary truths should be brought out so plainly and forcibly that the peril of the 'white plague' may be realized and proper precautions be taken."

50. **Treatment of Infected Wounds.**—Longenecker reports 3 cases of infected wounds which were treated successfully by the use of camphorated phenol. He urges its more extensive use, both in the form of an ointment and of a 50 per cent. solution.

University of Pennsylvania Medical Bulletin, Philadelphia.

April.

54 *Effect of Tuberculosis Vaccination on Cattle Infected with Tuberculosis. L. Pearson and S. H. Gilliland.
55 Study of the Pathologic Changes in Some Mound-Builders Bones from the Ohio Valley, with Especial Reference to Syphilis. S. T. Orton.
56 Studies on Cell Granula and Ameboid Movements of the Blood Cells of Limulus. L. Loeb.
57 *Nature of Paratyphoid Fever and Its Closely Allied Infectious. H. Fox.

54. **Effect of Tuberculosis Vaccination on Infected Cattle.**—In connection with some tuberculosis vaccination experiments made by Pearson and Gilliland, the opportunity occurred to test the effect of vaccination on some young cattle already infected with tuberculosis. Twelve calves responded to the tuberculin test. They were divided into two lots of 6 each, and one of these lots was subdivided into two groups of 3 each. The 3 calves of one group were given seven intravenous injections of a standard suspension in water of human tubercle bacilli. The dosage began at 1 c.c. and was increased to 6 c.c. The intervals between the injections were from six to twenty days; the time of treatment was about three months. The 3 calves of the second group were given subcutaneous injections of tuberculin at intervals of from two to ten days until the hypersensitiveness of the animal to tuberculin had disappeared, after which the calves received an intravenous injection of a suspension of tubercle bacilli in water, when the foregoing procedure was repeated. The remaining 6 calves were given no treatment whatever, but were at all times kept

with the 6 calves under treatment, so that all the 12 calves were subjected to the same condition of life and subsisted on the same kind and quantity of food. When the cattle died or were killed they were submitted to careful postmortem examination. The observations recorded show a decided difference between the lot of 6 young cattle that were treated and the 6 that were not treated. Since the two lots of animals were in all respects as nearly equal as possible at the beginning of the experiment, and since they were cared for all together and in precisely the same way, except in respect to specific treatment, it is but fair to conclude that the six treated animals were favorably influenced by the treatment. The authors have sufficient evidence to justify the statement that the treatment to which six of the animals were subjected had the effect not only of keeping in check the progress of the tuberculous process, but in causing a distinct and in some cases a great retrogression of the lesions. In other words, the treatment had a distinct curative effect. In all the treated animals the lesions were quiescent and encapsulated. But they contained living tubercle bacilli. These experiments, which were made on a few young cattle in the earlier stage of tuberculosis, do not justify conclusions or inferences as to the probable effect of similar treatment on older and more extensively diseased animals, but the authors hold that the experiments made show clearly that under such treatment as was given tuberculous lesions do not extend; on the contrary, that they recede and that new implantations do not occur even on prolonged contact with tuberculous herd mates.

57. **Nature of Paratyphoid Fever.**—Fox traces the relations of, and classifies in order, typhoid, paratyphoid, paracolon infection and meat poisoning. He concludes that paratyphoid fever differs from typhoid fever in: (a) a shorter invasion stage and rise of temperature; (b) shorter or absent periods of continued fever, and (c) marked diurnal remissions of temperature, much deeper than enteric and without periodicity. An absence of the Widal reaction is suggestive, if it persist in reasonably high dilutions. The duration is, on the whole, shorter than typhoid, and the cases where type "B" was adjudged the etiologic rôle this fact is more striking than in the type "A" cases. The general findings of the type "A" cases are nearer to typhoid than type "B", the latter presenting a picture more like septicemia. The complications of type "B" infections are more numerous, and the course is more fulminating in these cases. The causal germs belong to the intermediates of the typho-colon series, the type "A" being nearer to the bacillus of Eberth and Gaffky, while type "B" approaches the meat-poisoning group. The clinical evidences of the respective organisms just named agree with their general properies and relations to infections in this order, ranging from the subacute typhoid to the hyperacute meat-poisoning. Antityphoid serum will clump the paratyphoid "B" at the same time as the *B. typhosus*, sometimes even in higher dilutions; so that a positive reaction of a patient's serum to both *B. typhosus* and paratyphosus "B," even if the latter be in higher dilutions, will not permit a diagnosis. On the other hand, only twelve times in 94 cases of typhoid fever did the serum react with the type "A" paratyphoid; so that a positive reaction with type "A" and not with the bacillus of Eberth may be taken as nearly a proof of the existence of an "A" paratyphoid infection. That there must be some other factor responsible for coagglutinations than an increased value of the agglutinins normally present in the blood seems probable. The best proof of existence of a para infection is the isolation of the bacterium, the saturation test, and, last, the bactericidal action.

Therapeutic Gazette, Detroit, Mich.

May.

58 Treatment of Retrodisplacement of the Uterus: a Clinical Study Based on Records of 653 Cases. B. C. Hirst.
59 Pasteur Treatment for Rabies Administered at the Patient's Home. M. Solis-Cohen.
60 *Observations on Urine After Anesthesia. C. E. Goodwin, Weedsport, N. Y.
61 Diaphoresis in Treatment of Eye Diseases. H. F. Hansell, Philadelphia.

60. **Urine After Anesthesia.**—In 65 chloroform cases observed by Goodwin, the urine showed albumin or casts (or both) induced or increased after inhalation in 40 per cent. of the cases, sugar occurring in one instance. In 61 cases of anesthesia produced by nitrous oxid followed by ether, albumin and casts occurred or were increased in the urine in 12 per cent., one case showing sugar. In 41 cases of chloroform followed by ether, albumin and casts were induced or increased in 41.5 per cent. of the cases. In 28 ether anesthesias, 39 per cent. of the cases showed albumin and casts increased or present afresh after the narcosis, two cases also showing fresh occurrence of sugar in small quantities. In these cases the albumin and casts usually disappeared in a few days, though rarely they persisted for ten days. The sugar disappeared in all cases after the first day.

International Clinics, Philadelphia.

62 Treatment of Cardiac Asthma. Vol. I., Fifteenth Series. P. Merklen.
63 Treatment of Cirrhosis of the Liver, Unusual Syphilis, Tuberculosis, Suffocative Catarrh and Mucomembranous Enterocolitis. Albert Robin.
64 Therapeutic Indications in Infected Cholelithiasis. A. Chauffard.
65 Carbohydrates of Human Urine in Health and in Disease. C. Douglas.
66 The Eye and the Hand in the Diagnosis of Heart Disease. J. J. Walsh.
67 Early Diagnosis of Heart Disease in Children. J. P. Parkinson.
68 Aortic Stenosis; Adherent Pericardium. M. Manges.
69 Intestinal Adhesions and Report of a Case Illustrating Elasticity of the Hepatic Support. A. L. Benedict.
70 Skin Grafting in the Late Treatment of Severe Burns Involving Extensive Areas of Skin. A. Young.
71 Starvation of Malignant Growths by Depriving Them of Blood Supply. R. H. M. Dawbarn.
72 New Operative Method for the Total Extirpation of the Larynx. F. Durante.
73 Treatment of Knee-Joint Disease. R. A. Hibbs.
74 Treatment of Glenard's Disease. A. E. Gallant.
75 Morphinomania, Cocomania and General Narcomania, and Some of Their Legal Consequences. C. K. Mills.
76 Case of Cerebellar Tumor. J. W. Carr, London.
77 Two Cases of Ocular Palsy, in Both of which the Paralysis Was Probably Dependent on a Lesion in the Neighborhood of the Sphenoidal Fissure. E. Bramwell.
78 Anterior and Posterior Parietal Presentations of the Head in Slightly Flattened Pelves. R. Jardine, Edinburgh.

Annals of Gynecology and Pediatry, Boston.

April.

79 Case of Congenital Absence of Vagina and Uterus; Artificial Vagina; Subsequent Operation for Appendicitis. A. L. Smith, Montreal.
80 Case of Pregnancy in One Cornu of a Bicornate Uterus; Complicated Labor. F. Washburn, Jefferson, Mass.
81 Treatment of Wounds and Contusions of Pelvic Outlet Produced During Labor. J. W. P. Smithwick, La Grange, N. C.

May.

82 Pregnancy Developed in an Ante-latero-flexed Uterus, Mistaken for Extrauterine Pregnancy. Dr. G. Fieux.
83 Suprapubic Cystotomy in Children. C. G. Cumston, Boston.

The Laryngoscope, St. Louis.

April.

84 Foreign Bodies in Trachea, Bronchi and Esophagus. The Aid of Esophagoscopy, Bronchoscopy and Magnetism in Their Extraction. C. Jackson, Pittsburg, Pa.
85 Abscess of the Tongue; Report of Two Cases. F. C. Cobb, Boston.
86 Report of Case of Keratosis of Throat. H. Foster Kansas City, Mo.
87 Osteomyelitis of Temporal Bone. C. W. Richardson, Washington, D. C.
88 Aural Neuralgia of Dental Origin. G. L. Richards, Fall River, Mass.
89 Nasofibroma Treated by Injections of Monochloracetic Acid. H. Smith, New York.
90 Adenocarcinoma of Nose. Killian Operation for Radical Removal. J. McCoy, New York.
91 Case of Multiple Sinusitis Cured by the Killian and Caldwell Luc Methods. H. B. Hitz, Milwaukee.
92 Turbinectomy. D. S. Reynolds.

Medical Examiner and Practitioner, New York City.

April.

93 Insanity and Epilepsy in Relation to Life Insurance. W. R. Gowers, London.
94 Cullings from the Desk. E. H. Hammil.
95 "Plimsoll Mark" in Life-Insurance Examinations. W. H. Lawton, Philadelphia.
96 Subjective Symptoms of Importance. T. D. Davis, Pittsburg, Pa.

Chicago Medical Recorder.

May.

97 When Should a Uterine Myoma be Operated On? W. M. Thompson, Chicago.
98 Occurrence of Influenza Outside of Epidemics. J. B. Tyrrell, Alta, Iowa.
99 Sajous "The Internal Secretions and the Principles of Medicine." W. F. Waugh, Chicago.
100 Osteomalacia. C. B. Reed, Chicago.

Alabama Medical Journal, Birmingham, Ala.

May.

101 Annual Oration. S. Harris, Union Springs, Ala.
102 Jerome Cochran Lecture—The Problems of Surgery. R. Abbe, New York City.
103 Iritis. L. G. Woodson, Birmingham, Ala.

104 Contract Doctor. G. A. Hogan, Bessemer, Ala.
105 Management of Pulmonary Tuberculosis from the Standpoint of the General Practitioner. E. A. Jones, Raton, New Mexico.

Virginia Medical Semi-Monthly, Richmond, Va.

May 26.

106 *Commission of Lunacy—Its Scope and Limitations. W. F. Drewry, Petersburg, Va.
107 Origin of Tuberculosis in Children. R. W. Hynds, Atlanta, Ga.
108 Eczema; Its Symptomatology, Etiology and Diagnosis. T. W. Murrell, Richmond, Va.
109 Treatment of Eczema. F. H. Beadles, Richmond, Va.
110 Symptoms and Treatment of Lobar Pneumonia. T. H. Woolsey, Greeneville, Tenn.
111 Points Out of My Own Experience in Refraction and the Fitting of Glasses. R. P. Cox, Rome, Ga.
112 Principles of Surgery. S. McGuire, Richmond, Va.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal (Educational Number).

June 3.

1 *Medical Profession Abroad.
2 *Medical Profession in Europe and the British Colonies.

1. **Medical Profession Abroad.**—In this article is presented a general view of the situation as it obtains in Europe; the training and qualification necessary to graduation in medicine; requirements for licensure; the rights and duties of practitioners; a survey of the public services; professional income; contract practice; unqualified practice; protection of professional interests; the social position of the profession, and the doctor in politics.

2. **Medical Profession in Europe and British Colonies.**—This article is a more extended discussion of the topics mentioned in the foregoing, and has reference particularly to the several countries of Europe and all the British possessions. Special attention is given to the laws relating to the practice of medicine, medical education and such other matters as are of interest to physicians.

The Lancet, London.

June 3.

3 The General Conditions of Medical Studies and of Hospital Administration in Paris; Apropos of the Visit of the British physicians to France.
4 Laryngeal Paralyses and Their Diagnostic Value. H. Barwell, London.
5 Conditions Affecting the Development of Flagellated Organisms from Leishman Bodies, and Their Bearing on the Probable Mode of Infection. L. Rogers, Calcutta.
6 *Case of Widespread Ulceration of Skin and Connective Tissue. W. B. Watson, London.
7 *Operation of Jejunostomy. Mayo Robinson, London.
8 *Second Dentition; Its Medical Aspects. H. Armstrong, Liverpool.
9 *Typhoid Fever and Pregnancy, with Special Reference to Fetal Infection. H. T. Hicks and H. French, London.
10 *Action of Yeast in Tuberculosis and Its Influence on the Opsonic Index. W. R. Huggard, London.
11 Treatment of Toxemic Symptoms in Scarlet Fever. A. K. Gordon, Manchester.
12 Innominate Aneurism: Simultaneous Ligature of Right Carotid and Subclavian Arteries. Recovery. N. N. Dunn.
13 Coexistence of Cystic Mesometrium and Tubal Pregnancy. F. J. S. Heaney, Blackpool.
14 Sanitation and the Panama Canal. J. G. Leigh.

6. **Widespread Ulceration of Skin.**—Watson reports the case of a man, aged 61, who suffered with extensive ulceration of the skin and connective tissues. Except for a somewhat severe attack of influenza 16 years previously, and of pleurisy six years previously, the patient had always been healthy. There was no personal history of sickness nor a family history of tuberculosis. The patient first noticed a small lump in the left buttock which slowly increased in size. A second lump soon appeared, a little higher than the first and nearer to the spine. Both lumps ultimately burst. Shortly afterward lumps began to form in the left groin. Recourse was had to surgical treatment, the lumps in the back and a number of enlarged glands from the groin being removed and the parts scraped. After a few months these places healed, but the disease showed itself in many other localities. The course from now on was a progressively downward one. The patient's general condition was very bad. Many of the ulcers were deep, with irregular, unhealthy looking bases. They were in varying degrees of inflammatory activity. With the presence of sinuses and numerous bunches of flabby unhealthy granulations, the lesions presented a complete clinical picture of tuberculous ulceration of the skin and connective tissue. The treatment consisted of rest in bed and abundance of good food, combined with cod-liver oil, syrup of iodid of iron in full doses, and other tonics. The ulcerations were treated antiseptically. The patient recovered and is now in excellent health.

7. **New Operation of Jejunostomy.**—The operation described by Robson consists in taking a loop of the beginning of the jejunum just sufficiently long to reach the surface without tension; the two arms of the loop are short-circuited about three or four inches from the surface, the short-circuiting being done either by means of sutures around a decalcified bone bobbin or by sutures alone. Robson prefers the former. A small incision is then made into the top of the loop just large enough to admit a No. 12 Jaques catheter, which is inserted and passed for three inches down the distal arm of the loop. This is fixed to the margin of the incision in the gut by a silk or Pagenstecher's suture, and the entrance of the tube into the bowel is further guarded by two pursestring sutures, one over the other. The top of the loop is fixed to the skin by one or two stitches and the wound is closed. The patient can then be fed at once with peptonized milk and brandy. The whole operation can be done in from fifteen to twenty minutes and with very little visceral exposure. Should the patient be too ill to bear the little extra time occupied by the short-circuiting, the tube may be inserted as directed and surrounded by two or three pursestring sutures. In this case the loop of bowel must not be brought to the skin, but would better be fixed by sutures to the peritoneal margin and the aponeurosis in order to leave part of the lumen of the attached loop within the abdomen for the direct passage onward of the intestinal fluid with the bile and pancreatic secretion.

8. **Medical Aspects of Second Dentition.**—In this article Armstrong discusses the influence of general or local disease, such as rickets, hereditary syphilis, the acute fevers, particularly measles and adenoids, as a cause of faulty dentition; faulty dentition as a cause of general or local disease, and the influence of dentition on concurrent general disease, such as hysteria, chorea and other neuroses.

9. **Typhoid and Pregnancy.**—Among the problems discussed by Hicks and French are the following: 1. Are typhoid bacilli transmitted from the mother to the fetus? In 10 cases typhoid bacilli were found in the fetal organs or blood. In 11 cases the bacilli were looked for and not found. When bacilli were found in the fetus delivery occurred late in the fever, from the third week of the disease to the twenty-fifth day of a relapse. It would seem, therefore, that the duration of the typhoid is an important factor in determining infection of the fetus. This raises the question whether, in cases where the fetus is viable, labor should not be induced as early as possible in order to save the child from infection. 2. The effect of pregnancy on the mother who has typhoid. Typhoid occurring during pregnancy does not affect the prognosis or alter the course of the disease, as was noted in 7 cases. The death rate was 14 per cent. 3. The effect of typhoid in the mother on the pregnancy. The effect of enteric fever on the pregnancy is bad. In the majority of cases abortion or premature labor takes place. The delivery is usually easy and the patient experiences considerable relief. The uterus involutes just as if there were no maternal illness. The fetus, even if viable, is often born dead or dies soon after birth.

10. **Yeast in Tuberculosis.**—For the last two years Huggard and Morland have been making systematic observations on the influence of yeast, taken internally, on tuberculosis. The cases at first selected were chronic cases in which the patient had either "stuck in the mud" or was losing ground. The results in some cases were striking, in some encouraging, in others almost *nil*. In no case was there any bad effect, but some patients left off the drug because they disliked the taste of it or thought that it disagreed with them. All the patients appeared to derive some benefit from the remedy. In most cases the downward course either became less rapid or was arrested and the stationary patients improved. On the whole, the results were good enough to lead to a more extended trial. Thirty-six patients were under this treatment for periods varying from two weeks to about one year. Besides these,

there were about six who took the remedy for less than a fortnight but who discontinued it for one reason or another, such as flatulence, dislike of the taste, or disgust at the smell of the yeast. The clinical outcome of all the observations is that some improvement was noted in almost every case in which the remedy was taken steadily for at least a month, though in many cases improvement appeared much earlier. In all but one case tubercle bacilli were present when the yeast treatment was begun. The cases were as follows: (*a*) One patient without tubercle bacilli in the sputum. (*b*) Five patients in whom tubercle bacilli disappeared and the disease became seemingly arrested while under yeast treatment. (*c*) Seven patients in whom the disease is tending toward arrest, but in which tubercle bacilli have not yet disappeared. (*d*) Eleven cases of medium severity and of doubtful prognosis, the patients either losing ground or barely holding their own when the yeast was begun. All but one patient improved more or less; 7 improved both locally and generally; 2 improved generally but not locally; 1 remained practically unchanged both generally and locally, though the opsonic index rose; in one renal tuberculosis and albuminuria were found. In 6 of the cases there was a diminution of tubercle bacilli; in three of the cases an increase; and in two cases the numbers were unchanged. In two cases renal as well as pulmonary tuberculosis was present. In one tubercle bacilli have now almost disappeared. In the other of these two cases there was laryngeal as well as pulmonary tuberculosis and during the yeast treatment renal tuberculosis and albuminuria were discovered after the appearance of gouty pains in the joints of the hands and feet. The patient felt well and seemed in better health than previously. The state of the lungs and of the larynx improved at the same time. (*e*) Twelve advanced cases of bad prognosis, nine of the patients with more or less pyrexia. All appeared to benefit in general health to some extent, at least for a time. Seven improved considerably in local as well as in general condition and show some promise of reaching a stage of tolerance or quiescence. In two there was no material change in the local condition. In one case excavation which had already been extensive seemed to go on even more rapidly, in spite of some improvement in the general health. Two of the patients died subsequently.

As regards the general effects of the yeast, some patients did not notice any influence whatever. Some felt a sense of well-being; two or three had a feeling of exhilaration. Several patients said that their appetite and digestion were better on taking yeast. A few complained of flatulence, less noticeable or absent when the yeast was taken on an empty stomach. Two or three patients said that under its use the bowels acted more regularly. Two or three patients found that owing to the taste or smell it caused a feeling of nausea or disgust and in these cases it was of course dropped at once. In two or three cases gouty or rheumatic pains were complained of after yeast had been taken for some little time. The discovery of albuminuria with renal tuberculosis in one individual who was taking yeast led to an examination of all the other patients available but in none was there any evidence of renal irritation, though one of these cases a little time before beginning the yeast treatment had had albuminuria with granular casts and another also had well-marked renal tuberculosis before the treatment was begun. Yeast did not appear to have any influence on the temperature of patients suffering from a febrile tendency. Influenza in a mild form occurred in two or three patients while they were taking yeast, which therefore can hardly be looked on as a preventive.

Bulletin de l'Académie de Médecine, Paris.

15 (Year LXIX. No. 21.) *Extraction of Foreign Body in Esophagus.—Traitement des corps étrangers de l'esophage. Suarez de Mendoza.
16 *Sur l'emploi des rayons Roentgen. Debove.
17 *Poison in Stings of Bees, Wasps, etc.—Le venin des hyménoptères. P. Fabre.

15. **Extraction of Foreign Body in Esophagus.**—Mendoza uses the Graefe basket as a rule, but when impossible to introduce it on account of spasmodic contraction, he precedes it with the Collin-Verneuil instrument. This dilates the esophagus, after which it is generally easy to insert the Graefe basket and to extract the foreign body. If even this proves unsuccessful, the Tarnier bag can be introduced. By distending the walls it releases the impacted foreign body and allows its extraction without injury to the tissues.

16. **Application of Roentgen Rays.**—Debove reported to the *Académie* the resolution adopted by the recent Roentgen Congress at Berlin, which urged that the use of the Roentgen rays belongs exclusively to the medical domain. He advocated the appointment of a committee to study the subject and to report as to whether the public authorities should interfere to restrict the use of the Roentgen rays for diagnostic and therapeutic purposes to the medical profession alone. A committee was appointed in accordance with his suggestion, consisting of himself, Brouardel and seven others.

17. **Poison of Bee, Wasp and Hornet Stings.**—Fabre relates about a dozen cases of stings followed by severe general symptoms, fatal in some instances. The symptoms involve the respiratory, digestive, nervous and secretory systems, and are distinguished by the rapidity with which they develop and their intensity. The action of the poison of the hymenoptera is frequently more subtle and generally more rapid than that of snake or viper venom, which it resembles in many respects. Antivenin might be used if the symptoms did not develop with such rapidity. The most effectual treatment is by aiding nature to eliminate the poison through the sweat, urine, saliva and feces. Her efforts in this direction are plainly evident in the symptoms observed, and the physician should cooperate by administering diffusible stimulants, diuretics, sialagogs and purgatives. Experimental and clinical experience seems to indicate that the kidneys are the chief emunctories concerned. Among the general symptoms cited in the cases he describes are edema suggesting erysipelas, eruptions, syncope, nausea, vomiting, diarrhea and irregularities in the pulse. Local treatment should be by the immediate application of lime water, salt or strong brine, supplemented by a hot aromatic drink containing some diffusible stimulant such as ether or peppermint, to favor the elimination of the venom through the skin and kidneys. Vinegar water or ammonia usually neutralizes bee stings. The little blister formed by the clear venom deposited by the insect should be carefully removed without extracting the sting beforehand and without the slightest pressure on the latter, as this would merely squeeze out more of the venom. Attempts to induce immunity by submitting to the stings of bees have been successful in some instances to a certain extent.

Presse Médicale, Paris.

18 (No. 38. May 13.) *Technique de la palatoplastie. A. Broca.
19 (No. 39.) *Sudden Death in Acute Articular Rheumatisim.—La mort brusque dans le rhumatisme articulaire aigu. A. Gouget.
20 (No. 40.) *Le tabes infantile juvenile. E. Hirtz and H. Lemaire.
21 *Le pronostic de la pneumonie chez l'enfant (in children). E. Terrien.
22 (No. 41.) La dysentérie bacillaire a Bordeaux. B. Auche.
23 Obstétrique et medicine légale. O. A. Lop.
24 Stains for Spirilla.—Techniques pour la coloration des spirilles.
25 (No. 42.) *Extramedian Symphyseotomy.—La section latérale du pubis appréciée d 'après les résultats fournis par 90 interventions. L. Gigli.
26 The Carbonated Baths at Royat in Heart Affections.—Traitement de l'insuffisance cardiaque par les bains carbo-gazeux de Royat. J. Heitz.
27 (No. 43.) *Syphilis congénitale et Spirochaete pallida Schaudinn. C. Levaditi.
28 140 nouveaux cas de rachi-stovainisation. L. Kendirdjy and V. Burgaud.
29 Atrophic Alopecia.—La pseudo-pelade. L. M. Pautrier.

18. **Technic of Plastic Operations on Palate.**—Broca describes with nine illustrations the details of these operations as he has performed them on 140 patients. He says that he has not invented anything new, but by combining the suggestions of others is able to perform the operation rapidly, safely and thoroughly. In the last 110 cases there has been no mortality, and only 2 deaths occurred in his entire experience, and these before 1895.

19. **Sudden Death in Acute Articular Rheumatism.**—Death may occur abruptly during acute articular rheumatism from cerebral manifestations, from syncope, from orthopnea and subacute asphyxia or from obliteration of the mitral orifice by a thrombus. Gouget describes a case of the latter kind,

with the autopsy findings. Old endocarditic lesions had evidently favored the development of the thrombus. The patient had had previous attacks of acute articular rheumatism, each accompanied by hemoptysis, probably from embolism or merely from the congestion in the lungs The weakness of the heart and the excess of fibrin in the blood, which is the rule in rheumatism, evidently co-operated in the fatal result. Gouget has collected from the literature 9 cases of death from syncope or subacute asphyxia in the early stages of acute articular rheumatism; 6 were in women and 3 in men. This proportion of two-thirds women to one-third men is the same as was observed in the 30 cases of malignant rheumatic endocarditis. The 2 cases of "brain rheumatism" which he mentions both occurred in hard drinkers. Death from syncope may occur during convalescence, and is generally preceded by some effort. The cavities of the heart are much dilated in this case. When death is due to subacute asphyxia, the autopsy reveals either acute pulmonary edema or embolism or intracardiac thrombosis.

20. **Infantile Juvenile Tabes.**—Hirtz remarks that no report is on record of the postmortem findings in this affection, although he has found 47 cases described in the literature. The first manifestations are, in order of frequency, incontinence of urine, lightning pains, amblyopia and gastric crises. The first of these symptoms was noted as the initial one in about half the cases on record, and amblyopia in about 14 per cent., with lightning pains in less than 33 per cent. Amblyopia became superposed on other symptoms in about 36 per cent. Experience has shown that the tabes of these young patients remains mild and develops extremely slowly.

21. **Prognosis of Pneumonia in Children.**—Terrien reports 2 cases of sudden death in the course of pneumonia in an infant and in a girl of 10. Evidences of purulent pericarditis were discovered in the first case, but no cause for the death could be detected in the second except acute and rapid dilatation of the heart. The child had entered the hospital on account of moderate chorea ten days before the first symptoms of the apparently mild pneumonia were noted. He refers to similar cases that have been published in which previously healthy children died suddenly in the course of an apparently mild pneumonia of the right apex. Extrapulmonary localizations are frequent in pneumonia, but sudden or rapid death is liable to occur at any age, with or without extrapulmonary localizations. Cyanosis is generally the first sign of impending danger, whether it is the indication of some pericardial localization or merely of simple, acute dilatation of the heart.

25. **Extramedian Symphyseotomy.**—Gigli's method of lateral section of the pubis, pubotomy or hebotomy, as it is variably called, has now been performed in 90 cases in which a contracted pelvis required symphyseotomy or its equivalent. The surgical wound healed by primary intention in every instance, even when there was puerperal infection. The list of operators includes Berry Hart of Edinburgh, Canton of Buenos Ayres, Döderlein of Tübingen, Fleischmann of Vienna, Hofmeyer of Würzburg, Leopold of Dresden, Meyer of Copenhagen, Meurer of Amsterdam, Tauffer of Budapest, Van de Velde of Harlem, von Franqué of Prague, Walcher of Stuttgart and Zweifel of Leipsic, besides 14 prominent Italian and several French accoucheurs. The operation and its results have been duly chronicled in THE JOURNAL, as for instance on pages 1426 and 1909 of volume xliii. It was rendered possible by the invention of the Gigli wire saw. The wound is in the bone, outside the joint, and has none of the drawbacks of interference with an articulation, while it has all the advantages and more of symphyseotomy, Gigli claims.

27. **Congenital Syphilis and the Spirochaete Pallida.**—Levaditi reports 3 cases of congenital syphilis in which the *Spirochaete pallida* was discovered in the cutaneous lesions and in the organs of new-born infants. Control research on other infants was invariably negative. The spirochaetes were found in the first infant in the vesicles of hereditary syphilitic pemphigus and in incipient cutaneous papules. In the second infant they were found in the papules, in the spleen, lung and liver, and in the third in the pemphigoid lesions, spleen and liver.

Revue de Médecine, Paris.

Last indexed XLIV page 832.

30 (XXIV, No. 7.) Des variations du poids au cours de la variole (variations in weight). M. Garnier and G. Sabaréanu.
31 Loss of Muscle Sense in Fingers of Both Hands with Intact Sensibility of Muscles of Hand and Forearm.—Perte du sens musculaire aux doigts, etc. Bouchaud. (Concluded from preceding volume.)
32 Observation de tremblement hystérique. C. Boucarut.
33 (No. 8.) *Anémie dite pernicieuse progressive; 3 cas. P. E. Launois and P. E. Weil.
34 Etude des inversions viscérales. V. LeGoic.
35 *Variations de la tension artérielle dans la fièvre typhoide chez l'enfant (in children). G. Carrière and C. Dancourt. (Commenced in No. 7.)
36 (No. 9.) Cas de syringomyélie et syringobulbie. Dégénération du ruban de Reil. S. A. K. Wilson, (Edinburgh).
37 Essai sur la physiologie pathologique du mouvement. Disparition des mouvements dans la chorée chronique. N. Vaschide and C. Vurpas.
38 Les échanges osmotiques en biologie (interchanges). M. Labbé.
39 (No. 10.) Les lacunes de désintégration cérébrale. G. Catola.
40 2 observations d'ictère chronique familial avec splénomégalie. L. Lortal-Jacob and G. Sabaréaunu.

33. **Progressive Pernicious Anemia.**—In the 3 cases described the morbid substance causing the trouble seemed to have a destructive action on the reds and an invigorating action on the white corpuscles. No infection or intoxication could be found to account for this except possibly syphilis in one case. Mercurial treatment failed to influence the anemia, and no benefit was derived in any instance from iron, arsenic and marrow organotherapy.

35. **Blood Pressure in Typhoid Fever.**—In the 41 children examined the blood pressure was always below normal, and likewise in grippe and in tuberculous meningitis, but not in 2 cases of acute osteomyelitis. The pressure was normal or slightly above in acute meningitis, in "meningism," and also in endocarditis, otitis, pneumonia, etc. In typhoid in children the blood pressure is absolutely and relatively much lower than in adults, although, exceptionally, hypertension may prevail. The blood pressure has no diagnostic or prognostic importance in typhoid fever in children, but it reveals an impending or present complication. A hemorrhage is preceded by an unusually high pressure, which also accompanies congestions, especially congestion of the lungs. It may likewise be the precursor of violent delirium or of endocarditis. The blood pressure is not influenced by gastrointestinal troubles nor by the development of an abscess nor by an intercurrent infection or aortic lesion.

Archiv f. klinische Chirurgie, Langenbeck's, Berlin.

Last indexed XLIV, page 1568.

41 (LXXVI, Nos. 1-2.) *Experimentelle Untersuchungen zur Physiologie und Pathologie des Peritoneums. P. Clairmont and H. Haberer (von Eiselberg's clinic, Vienna).
42 *Zur Behandlung der diffusen eitrigen Peritonitis. P. Clairmont and E. Ranzi (ibid).
43 *Ueber postoperative Magen- und Darmblutungen (hemorrhages in stomach and intestines). W. Busse (ibid).
44 Bericht über 258 von Prof. v. Eiselsberg ausgeführte Magen-Operationen (on stomach). P. Clairmont (ibid).
45 *Zur Appendix-Frage, mit bes. Berücksichtigung von Dauer-Resultate (ultimate results). H. Haberer (ibid).
46 *Zur Appendix-Frage, mit bes. Berücksichtigung von Dauer-Resultate (ultimate results). H. Haberer (ibid).
47 *Unilateral Exclusion of Part of Intestines.—Zur Technik der unilateralen Darmausschaltung. (Apposition end-to-side, Senn.) Id.
48 Tied-off Intestine as Content of Femoral Hernia.—Abgeschnürter Darm als inhalt einer Hernia ischiadica. v. Eiselsberg.
49 Diverticula in Bladder.—Zur Therapie der Blasendivertikel, nebst Bemerkungen über Complication derselben. G. A. Wagner (ibid).
50 Zur Casuistik der Knochen-Cysten (of bones). H. Haberer (ibid).
51 (No. 3.) *Die Unterbindung der Aorta, ihre physiologische und ihre therapeutische Bedeutung (ligation of aorta). M. Katzenstein.
52 Die Luxatio ossis lunati volaris eine Luxatio ossis capitati dorsalis. Lilienfeld.
53 *Zur Kenntniss der Hoden-Embryome (of testicle). A. Müller (Basle).
54 Zur Ranula-Frage. K. Försterling (Hannover).
55 *Indicationen und Methoden der Operation des Kehlkopfkrebses (laryngeal ceancer). E. v. Navratil (Budapest).
56 Ileus and Volvulus with Movable Cecum and Ascending Colon.—Die anatomische Form des Volvulus und Darmverschlusses bei beweglichem Coecocolon ascendens. G. Ekehorn (Sundsvall).
57 *Werth der Kryoskopie für die Nieren-Chirurgie (of kidneys). O. Rumpel.
58 *Justification of Early Operative Intervention for Subcutaneous Fractures of the Bones. Fritz König (Altona).
59 *Lymph-angiectasia in the Groin and Other Results of Stagnation of Lymph.—Die Lymphangiectasie der Leiste und andere Folgeerscheinungen der Lymphstauung. H. Gross.
60 Hemolysins in Severe Burns.—Verhalten der Hämolysine bei schweren Hautverbrennungen. H. Doering (Göttingen).

41. **Physiology and Pathology of Peritoneum.**—The ability of the peritoneum to protect itself has been exhaustively studied by Clairmont and Haberer on rabbits. About 10 c.c. of a 2 per cent. solution of potassium iodid was injected directly into the peritoneum without previous incision. The results have convincingly demonstrated, they think, that moist eventration and rinsing is not only the best means of preventing, but also aids in curing peritonitis. The favorable effects were evident whether the peritoneum was normal or already inflamed. In regard to leucocytosis and phagocytosis there did not seem to be much difference between irrigated and dry operations. Eventration can not be done without an abundant emigration of leucocytes. They display at first an energetic phagocytosis, but this soon subsides and finally sinks considerably below normal. Their experiments confirmed their former assertions in regard to the way in which increased peristalsis after administration of a little physostigmin hastens peritoneal absorption, and that sterile fluids injected into the peritoneum do not check absorption. In incipient peritonitis absorption proceeds more vigorously at first but later becomes very sluggish. A moist laparotomy has much less disturbing effect on the processes of absorption than dry laparotomies. In the latter there is venous hyperemia and the peristalsis is arrested; this does not occur when the peritoneum is irrigated. Transudation in the abdominal cavity is not materially affected by a laparotomy. The active hyperemia which accompanies the inflammation is the cause of the rapid absorption at first. The intensity of the inflammation depends on the virulence of the germs more than on all the other conditions combined. In regard to the benefits of rinsing after laparotomy, the peritoneum of the rinsed animals was invariably found in much better condition than in the controls. Eighty-seven rabbits and guinea-pigs were infected with pus of a standard virulence, laparotomized after an interval of from ten minutes to ten hours, and the peritoneum was then rinsed without tamponing. The animals all died, some of them even earlier than the controls, but the peritoneum was always in a much better condition than in the controls. There was none of the turbid effusion nor fibrinous deposits on the intestines nor loose adhesions between them. Scarcely a trace of inflammatory changes could be detected. In a further series of ten experiments diphtheria toxin was injected into the peritoneum and it was then rinsed out. Twenty times the fatal dose could thus be injected and rinsed out again without the slightest symptoms, while all the controls died with the typical syndrome.

42. **Treatment of Diffuse Suppurative Peritonitis.**—The lessons learned from 41 cases during the last three or four years are that operative treatment is indicated in all cases of diffuse peritonitis, even in the advanced stages. Immediate laparotomy is the only treatment, and the chances are better the earlier it is done. Incision on the median line is preferable unless the starting point is clinically demonstrable. The infectious agents and the exudate are best removed by copious irrigation with salt solution, with partial eventration of the intestinal loops. The abdomen should not be closed entirely; extensive tamponing is preferable. Jejunostomy is indicated in case of perforation of stomach or duodenum by an ulcer or cancer. Copious saline infusion is the main point in the after-treatment. The cases are classified and the histories related in detail.

43. **Postoperative Gastrointestinal Hemorrhage.**—Busse describes 14 cases of bleeding in the stomach or duodenum after an operation, and reviews 82 similar cases collected from the literature. The operations were chiefly laparotomies, but the hemorrhages occurred after operations almost anywhere on the body. The literature is extensively analyzed. The prognosis of these postoperative hemorrhages is grave, fully 55 per cent. of the patients having succumbed in consequence. The mortality in the last series of 14 cases was only 21 per cent., while Purves has reported a mortality of 72.5 per cent. Besides the usual symptomatic measures, gelatin, by the mouth or subcutaneously, and saline infusion have proved useful. Direct or retrograde thrombosis in the arterial or venous domain is probably the explanation of these postoperative hemorrhages. Several factors evidently co-operate with the effects of the operation, local or general disturbances in the circulation, the composition of the blood, trauma from the intervention, the effects of the anesthetic, and also nervous influences. The hemorrhage generally recurs several times, and usually appears during the first week. Erosions and ulcerative processes are sometimes found in the stomach or intestines, but not invariably.

45. **Value of Jejunostomy.**—In 115 pages Lempp proclaims the great advantages of jejunostomy, and discusses the indications for it as learned in an experience of 68 cases in which this operation has been performed during the last ten years. The technic was Eiselsberg's adaptation to the jejunum of Witzel's obliquely embedded tube. It is a simple operation, while it insures complete continence for fluids, and the fistula closes spontaneously when its purpose has been accomplished and the drain holding it open is removed. One of its great advantages is that the patient can be well nourished until normal conditions can be restored. This is particularly important in case of ulcer. The entire stomach region is left at rest and all mechanical demands on the stomach are avoided, and the simple operation can be done under local anesthesia alone. The various indications for jejunostomy are formulated. Among them is extensive injury from swallowing a caustic. If the stomach is much inflated, jejunostomy should be done at once, followed by the first step in gastrostomy, thus relieving the stomach by opening it. The jejunostomy is only temporary in these cases. In case of cancer, he advises exclusive rectal feeding for several days, in order to determine whether exclusion of the stomach has any influence on the symptoms, especially on the pain. If not, then jejunostomy would probably be useless.

46. **The Appendix Question.**—Haberer's article is based on 213 cases. He states that 40 out of 96 patients on whom an "interval operation" was performed have more or less severe disturbances still persisting In some they take the form of obstinate constipation, in others of severe pains, even colics, such as they had experienced before surgical intervention. The wounds had healed by primary intention in the majority of these cases. Among 22 patients who absolutely refused operation, 10 were found at a late date perfectly healthy.

47. **End-to-Side Anastomosis.**—Haberer has been experimenting to learn the best technic for end-to-side anastomosis. He found that much better results were obtained when the free margin of the mesentery was fastened to the under surface of the mesentery of the next loop.

51. **Ligature of Abdominal Aorta.**—Katzenstein says that this operation has been done fourteen times to relieve a peripheral aneurism. It makes great demands on the heart and has never been successful. Collateral circulation soon developed, annulling the benefits of the ligation. The great number of communications with the general circulation render the establishment of collateral circulation inevitable. Its development, however, requires extra work on the part of the heart, thus inducing considerable hypertrophy. In the absence of general atheromatosis of the vessels and if the operation is technically possible, extirpation of the aneurism may be successful. In 10 of the 14 cases on record death was the direct result of the operation.

53. **Embryoma of Testicle.**—Müller's patient was a child of 2. In only a single case on record was the patient an adult. In some instances the embryoma was congenital; in others it developed very slowly in the course of a few months to twenty years. Malignant degeneration was never observed in any of them. Embryoid tumors of the testicles are much more frequent, and 90 per cent. occur after puberty. They generally grow rapidly, sometimes first noticed after a trauma. Malignant degeneration is not uncommon, generally of a sarcomatous nature. The true embryoma, with its predominating ectodermal elements, is much rarer. Müller analyzes the publications on the subject.

55. **Laryngeal Cancer.**—Navratil classifies the various technics for removal of a cancer in the larynx, with the indications calling for each. He illustrates his remarks by the results in a number of clinical cases.

57. **Value of Cryoscopy.**—Rumpel protests against Rovsing's disparaging remarks in regard to cryoscopy (page 915, vol. xliv), maintaining all his previous assertions in respect to its great diagnostic importance, as experience has corroborated them in every partcular.

58. **Early Operative Intervention in Subcutaneous Fractures.**—König makes an earnest plea that operative measures should be contemplated from the very first in certain forms of uncomplicated fractures. They are the only means sometimes to insure good functional results, while in other cases they improve the chances and materially simplify treatment. When done at once, the conditions are exceptionally favorable, while the prospects are much less promising after an interval has elapsed. In 18 illustrations and 5 skiagrams he shows the mechanism of healing after operative intervention, and the excellent results, while the abnormal conditions in the patients not operated on prevent proper healing and interfere with function later. He does not advocate surgical treatment of all cases, but only that it should be duly considered in every case from the very first.

59. **Lymphangiectasia and Lymph Congestion.**—Gross states that the present article is the first of a series on the subject of the enlargement of the lymphatics under various influences, especially congestion of the lymph. This article deals with the French conception of what is called adenolymphocele, which is directly opposed to the German conception of lymphangiomata. The monograph contains illustrations of the varicose lymphectatic processes in the varicose groin glands in question. It is based on data personally collected in Paris with the co-operation of leading French surgeons. He hints that race prejudice has biased the views of the French in regard to this lesion.

Deutsches Archiv f. klinische Medizin, Leipsic.

Last indexed XLIV, page 1723.

61 (LXXXIII, Nos. 1-2.) *Ueber Diabetes insipidus und andere Polyurien. E. Meyer (Müller's clinich, Munich).
62 Proportionate Hypertrophy in Rabbit Heart in Experimental Tricuspid Insufficiency.—Ueber die Massenverhältnisse des Kaninchenherzens bei experimentell erzeugter Trikuspidalinsufficienz. E. Stadler (Leipsic).
63 *Enterogene Cyanose. A. A. Hijmans v. d. Bergh (Rotterdam).
64 New Formation of Glycogen in Rabbits.—Ueber die Neubildung von Glykogen bei glykogen-freien und auf Karenz gesetzten Kaninchen. Rolly (Leipsic).
65 *Protracted Fever of Obscure Origin.—Ueber langdauernde Fieberzustände unklaren Ursprungs. P. Krause (von Strümpell's clinic, Breslau).
66 Fall von traumatischer Geburtslähmung (birth paralysis). F. Herzog (Budapest).
67 Racial Differences of Typhoid Stems. Inhibiting Bodies in Serum and Agglutination Test.—Ueber Rassenunterschiede von Typhusstämmen, und über Hemmungskörper im Serum in ihrer Bedeutung für die Gruber-Widal'sche Reaktion. W. Falta and C. T. Noeggerath (Basle).
68 *Bakteriologische Untersuchungen bei gonorrhoischen Allgemeininfektionen (general infections). A. Prochaska (Eichhorst's clinic, Zurich).
69 Albuminurie bei Abdominal-Typhus. K. Stolte (Strasburg).

61. **Diabetes Insipidus.**—Meyer analyzes a number of cases of various affections suggesting diabetes insipidus. He believes that it is possible to distinguish the latter from primary polydipsia and from the polyuria accompanying interstitial inflammatory and pyelitic processes. True diabetes insipidus is the result of some functional disturbance in the kidneys. This disturbance is probably a lack of concentrating power. There is no retention of urine-making substances, the molecules and ions correspond entirely to normal, but the inability to produce a concentrated urine compels the elimination of a larger amount of water to dissolve and to wash out the urine-making substances. This drains water away from the system in undue amounts, and if the intake is likewise restricted serious trouble is liable to follow. The disturbance in the kidney functioning is probably of nervous origin; the majority of cases have occurred after some cerebral lesion, a meningitis or neoplasm. True diabetes insipidus can be differentiated by the behavior after increased intake of salts. Patients with primary polydipsia display the normal power of eliminating a concentrated urine under these circumstances, which is not the case in diabetes insipidus. The latter is further distinguished by the fact that while it shares with interstitial and pyelitic processes the inability to produce a concentrated urine, yet the amount of concentration of the urine is much more constant and the substances in solution are eliminated much more promptly and more regularly. Theocin has the effect of raising the concentration in diabetes insipidus without increasing the amount of urine. Phosphoric acid ingested in the form of sodium phosphate is eliminated in both normal conditions and in diabetes insipidus without increasing the amount of urine.

63. **Enterogenic Cyanosis.**—Stokvis and Talma have reported within the last three years four cases of what the former first described as "autotoxic, enterogenic cyanosis." Bergh has two similar cases now under observation, one a boy of 9, the other a young man. In the first patient the spectrum showed the bands of sulpho-hemoglobinemia, while in the second patient the bands exhibited true autotoxic methemoglobinemia. The cyanosis was intense in both cases, but varied in intensity at times, and differed from the cyanosis of carbonic acid intoxication in being more of a violet tint. Both patients had severe intestinal catarrh, but nothing to indicate a cardiac defect. The characteristic spectra in each could be seen in the living subject by applying the spectroscope to the anterior surface of the ear with an incandescent electric light behind the ear. The cyanosis subsided as the intestinal troubles were treated.

65. **Protracted Fever of Obscure Origin.**—Krause emphasizes the great value of bacteriologic examination of the blood in such cases. It may reveal general infection with streptococci, with the typhoid, colon, pyocyaneus or other bacteria, or with the gonococcus or proteus. In one of the cases described from his experience, he was able to diagnose by this means as a proteus general infection a remarkable case of fever of the recurring type which had long puzzled observers. He also calls attention to the possibility of a tertiary syphilis as the cause of a protracted febrile condition. Another case is described in detail in which bacteriologic examination of the blood and of the organs after death was negative and nothing definite could be found to explain the nine months' fatal febrile affection. From eight to twelve years previously the patient had had gonorrhea, articular rheumatism and malaria. The blood and organs examined were always sterile. Krause writes the article to reassure other physicians, when they encounter similar puzzling cases, as others have the same experience occasionally. Heubner has related the case of a man of 40 who had an intermittent fever for three months without an appreciable organ affection or much impairment of his general health. It finally vanished spontaneously in the course of a year or so. Bozzolo's address on this subject was reviewed in THE JOURNAL, vol. xliii, page 1731.

68. **Gonorrheal General Infection.**—Prochaska's six cases illustrate the multiplicity of the affections liable to follow gonorrhea, and also demonstrate the importance of the gonococcus in pathology. In one case there was a painful arthropathy in the knees and an eruption suggesting erythema nodosum. In three other cases there was endocarditis and polyarthritis, in another case a purulent meningitis, and in another the symptoms indicated severe sepsis without localization in any organ.

Münchener medizinische Wochenschrift.

70 (LII, No. 18, May 2.) Importance of Fat Metabolism for Production of Milk, etc.—Die Bedeutung der Fettsynthese, Fettphagozytose, Fettsekretion und Fettdegeneration für die Milch-und Kolostrumbildung. J. Arnold.
71 Die Bedeutung der optischen Emmetropierung für die Behandlung der Kurzsichtigkeit (in treatment of myopia). Pfalz.
72 Zur Frage nach dem Wesen der progressiven Myopie. Seggel.
73 Der Myelitis transversa lumbalis acuta. M. v. Holst.
74 Serum of thyroidectomized Sheep in Exophthalmic Goiter.—Antithyreodin-Moebius bei Basedowscher Krankheit mit Psychose. G. Lomer.
75 Zur Serumbehandlung des Morbus Basedowii. R. Durig.
76 Human Skin and Electricity.—Menschliche Haut und Elektrizität. O. Neustätter.
77 Ueber Anchylostomiasis. A. Tenholt.
78 Eine bequeme und einfache Irrigationsspritze für die Kinderpraxis (syringe for children). Paffenholz.
79 Importance of Roentgen Picture for Orthopedics.—Die Bedeutung des Röntgenbildes für die Orthopädie. F. Lange. (Commenced in No. 17.)
80 Weitere Erfahrungen über Appendizitis mit besonderer Berucksichtigung der Frühoperation (early operation). H. Doerfler.

Sei-I-Kwai, Tokyo.

Last indexed XLIV, page 335.

81 (XXIV, No. 1.) *An Endemic Disease from Special Parasite Previously Unknown in Japan. Katsurada. (Commenced in preceding volume.)

82 (No. 2.) *Leading Cases of the Wounds Inflicted in the Japan-Russia War. Surgeon-General Totsuka.
83 (No. 3.) *The Operating Method of the Bullet Wound Aneurism. T. Kikuchi, Surgeon General, J. I. A.

81. **Endemic Disease from New Parasite.**—Katsurada found the eggs of a trematode in the liver and stools of several cases of the disease described. Also in the liver of a cat from the same district. The disease has long been known in this region, and Katsurada had opportunity to examine from 30 to 54 cases every year while stationed there from 1899 to 1903. Only from 3 to 5 of his patients succumbed annually to its direct ravages, but the indirect mortality was very much larger. Defective physical development is the rule after it attacks a child. Diarrhea is the first symptom, with anemia and ascites later, but the most striking feature is the shape the trunk assumes. The hypogastric region seems to shrink while the epigastric region enlarges. A transverse furrow forms directly above the umbilicus, and the general appearance of the abdominal region resembles that of an inverted gourd. This dilatation of the epigastric region and of the lower part of the thoracic cavity is noted even in those patients whose liver and spleen are not much enlarged. Eggs of tricocephalus dispar, ankylostoma and ascaris were found in the stools besides the eggs of the special parasite. The mother parasite and some eggs were found in the branches of the portal vein. It resembles the male distomum. Specimens of tenia were also found in the cat's intestines. The water standing in the rice fields in summer in this endemic region becomes covered with bubbles. When these bubbles break on contact with the skin there is itching and an eruption follows. Katsurada is convinced that there is some connection between this water-bubble eruption and the liver disease, as such parasites are liable to invade the organism through the skin, especially when their penetration is favored by an eruption. In places where artesian well water is drunk and people refrain from wading in the bubble-covered water the disease is becoming much less frequent.

82. **Shell Wounds During the War in the East.**—Totsuka casually refers to the war as "a lamentable and regretful event, but," he continues, "Japan could not help appealing to arms for the sake of humanity and the peace of the Orient." He then proceeds to discuss various aspects of the severe wounds with loss of tissue which are the results of explosion of torpedoes or shells. He has compiled and classified such as came under his observation during naval engagements, and here presents the first installment. It comprises the cases of wounds of the head from fragments of shells with fracture of the skull. In the first of the six cases described, an irregular, mutilating wound left of the sagittal suture in the center of the parietal region was still suppurating when first seen, eleven days after the injury. An elliptical depression was discovered and a piece of shot found in it was removed with the fragments of bone. The upper longitudinal sinus had been compressed by them, and there was much venous hemorrhage when the clot was removed; this was stopped with dry gauze. The skin flaps were sutured over the gauze, and a pressure bandage applied. The wound rapidly healed and no symptoms of irritation of the brain or meninges developed at any time. Another patient still exhibits marked aphasia although his extensive injuries have all healed. In another, a fatal case, the brain was found a semi-fluid after a shell wound in the forehead. Another patient exhibited a curved lacerating wound 14 cm. long, from which the scalp hung down in a flap, and the greater part of the frontal and part of the parietal bones were fractured with a 3 cm. depression. The bone plate under the skin flap seemed to have lost an area nearly as large as a goose egg. The scalp was rather depressed and the first-aid surgeon had made a crescent-shaped incision on both sides of the wound to facilitate extraction of bone splinters. The man was unconscious for three days, but then the wound took a favorable turn and no further brain disturbances were noted. Convalescence is progressing fast.

83. **Bullet Wound Aneurism.**—By this term Kikuchi refers to the arteriovenous aneurism developing from a bullet wound. In 20 such cases under his observation during the last year the femoral artery and vein were involved in 8, the popliteal in 5, and the posterior tibial in 1. The others were in the arm. Instead of tying the injured vessels outside of the aneurismal sac, he ligates the injured part of the vessels inside the sac. This is a very simple and rapid operation; the loss of ramifying vessels is reduced to the minimum; local anesthesia generally is sufficient for the purpose, and the loss of tissue and consequent obstruction of circulation is much less than by the ordinary technic. He first applies a tourniquet to the limb; then the aneurism is amply incised, the clots removed and the sac wiped clean. The bullet hole is found where the vessel meets an imaginary line drawn through the entering and exit holes. In case of doubt a bougie may be passed through it. The vessel is then detached and tied close to the hole, and the small part containing the hole is excised. The tourniquet is then removed, and, if no blood oozes, an iodoform sponge is inserted. The muscles and skin are then sutured in tiers and a bandage applied.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A MANUAL OF MIDWIFERY FOR STUDENTS AND PRACTITIONERS. By H. Jellett, B.A., M.D., F.R.C.P.I., L.M., with the assistance in special subjects of W. R. Dawson, M.D., F.R.C.P.I., Medical Superintendent Farnham House, Dublin; H. C. Drury, M.D., F.R.C.P.I., Physician to Sir Patrick Dun's Hospital, Dublin; T. G. Moorhead, M.D,. Physician to the Royal City of Dublin Hospital, Dublin; R. J. Rowlette, M.D., Pathologist to the Rotunda Hospital and to Dr. Stevens' Hospital, Dublin. With 476 Illustrations. Cloth. Pp. 1158. Price, $5.50. New York: William Wood & Co.

HEALTH AND DISEASE IN RELATION TO MARRIAGE AND THE MARRIED STATE. A Manual Contributed to Privatdocent Dr. med. G. Abelsdorff, Privatdocent Dr. med. L. Blumreich and Others. Edited by Geh. Medizinalrat Prof. Dr. H. Senator and Dr. med. S. Kaminer. Only Authorized Translation from the German into the English Language, by J. Dulberg, M.D., Manchester, England. Vol. I-II. Cloth. Pp. 498 and 1257. Price, $8.00. New York: Rebman & Co.

MALARIAL INFLUENZA AND DENGUE. By J. Mannaberg and Dr. O. Leichtenstern. Edited with Additions by Major R. Ross, F.R.C.S., J. W. W. Stephens, M.D., D.P.H., and A. S. Grunbaum, M.D., F.R.C.P. Authorized Translation from the German, Under the Editorial Supervision of A. Stengel, M.D. Cloth. Pp. 769. Price, $5.00 net. Philadelphia: W. B. Saunders & Co. 1905.

THE DIAGNOSIS OF DISEASES OF WOMEN. A Treatise for Students and Practitioners. By P. Findley, B.S., M.D. Second Edition. Revised and Enlarged. Illustrated; 222 Engravings in the Text and 69 Plates in Colors and Monchrome. Cloth. Pp. 588. Price, $4.75. Philadelphia: Lea Brothers & Co. 1905.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advance Discoveries and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, assisted by H. R. M. Landis, Vol. ii, June, 1905. Paper. Pp. 346. Quarterly. Price, $6.00 a year. Philadelphia: Lea Brothers & Co. 1905.

A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS. By L. A. Stimson, B.A., M.D., LL.D. Fourth Edition. Revised and Enlarged. With 331 Illustrations and 46 Plates in Monotint. Cloth. Pp. 844. Price, $5.00 net. Philadelphia: Lea Brothers & Co. 1905.

SELECT METHODS IN FOOD ANALYSIS. By Henry Leffmann, A.M., M.D., Ph.D, and William Beam, A.M., M.D., F.I.C. With 55 Illustrations. Second Edition. Revised and Enlarged. Cloth. Pp. 396. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Co. 1905.

SAUNDER'S POCKET MEDICAL FORMULARY, with an Appendix, etc. By W. M. Powell, M.D. Seventh Edition. Revised and Enlarged. In Flexible Morocco, with Side Index, Wallet and Flap. Pp. 301. Price, $1.75 net. Philadelphia: W. B. Saunders & Co. 1905.

ATLAS AND TEXT-BOOK OF TOPOGRAPHIC AND APPLIED ANATOMY. By O. Schultze. Edited with Additions by G. D. Stewart, M.D. With 125 Illustrations, 85 in Colors. Cloth. Pp. 189. Price, $5.50 net. Philadelphia: W. B. Saunders & Co. 1905.

TEXT-BOOK ON THE PRACTICE OF GYNECOLOGY for Practitioners and Students. By W. E. Ashton, M.D., LL.D. With 1046 Illustrations. By J. V. Alteneder. Cloth. Pp. 1079. Price, $6.50 net. Philadelphia: W. B. Saunders & Co. 1905.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY, Sixteenth Session, Held at Detroit, Mich., May 30-June 1, 1904. Edited by L. E. La Fetra, M.D. Volume XVI. Cloth. Pp. 296. Reprinted from Archives of Pediatrics. 1904-1905.

TRANSACTIONS OF THE ARIZONA MEDICAL ASSOCIATION. Tenth, Eleventh and Twelfth Annual Sessions, held at Tucson, Phoenix and Tucson, 1902, 1903 and 1904. Paper. Pp. 92. Phoenix: The Arizona Republican.

PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, in Childhood and Early Life. By James Taylor, M.A., M.D., F.R.C.P. Cloth. Pp. 512. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co. 1905.

TREATISE ON ORTHOPEDIC SURGERY. By E. H. Bradford, M.D., and R. W. Lovett, M.D., Third Edition. 592 Engravings. Cloth. Pp 669. Price $5.00 net. New York: Wm. Wood & Co.

ADDRESSES AND OTHER PAPERS. By W. W. Keen, M.D., LL.D., F.R.C.S. Illustrated. Cloth. Pp. 441. Price, $3.75 net. Philadelphia: W. B. Saunders & Co. 1905.

TRANSACTIONS OF THE ROCKY MOUNTAIN INTERSTATE MEDICAL ASSOCIATION, Denver, Colo., Sept. 6-7, 1904. Cloth. Pp. 216.

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Address

THE RESEARCH IDEA AND METHODS IN MEDICAL EDUCATION AND PRACTICE.*

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CHICAGO.

At the present day, there exists in our country an interesting and peculiar condition of affairs in the matters of medical education and of licensure to practice,—a condition totally different from that which existed here twenty or even ten years ago, or from that which is to be found in any other country in the world. The medical observer from a foreign land—for example Germany—finds here a situation in striking contrast to that which obtains in his own country.

In Germany, twenty medical schools suffice for the needs of 60,000,000 of people,—each is the medical department of a university of which it is an intimate and integral part, and these twenty universities are all under the one central control of the secretary of education for the empire. The admission requirement, uniform for all, is the completion of the course in a gymnasium,—about equal to the completion of the sophomore year in our better literary colleges. The course of medical instruction extends over five years, and is in the hands of men who are, uniformly, the recognized masters in their respective branches, the fundamental subjects, anatomy, physiology, etc., being taught by individuals, each of whom employs his whole time and energies in investigation and instruction in his chosen branch. The relation of the medical schools to the hospitals is such that abundant clinical material can be controlled and properly utilized. The medical graduate secures his license to practice by an examination, the *Staats-Examen,* which is uniform for the entire nation, and which is conducted by its ablest teachers who give hours and days each year to this laborious but important duty, subjecting the applicant to thorough practical tests which are in harmony with the methods by which he has been taught and which really measure his ability to practice his profession successfully. The license thus procured is good throughout the empire and its colonies.

How different from this admirable system is the situation which our inquiring visitor finds in the United States! We have 157 or more medical colleges, though our population numbers only about one-third more than that of Germany, and this number has been increasing at the rate of three or four a year for the last decade. These institutions are graduating about 5,740 physicians a year, at least 2,500 in excess of any possible demand. With few exceptions, they are under no governmental control whatever; any person with the price of a charter may open a new medical school at any time and in some states may sell diplomas if he chooses so to do. Worse still, however, is the great inequality of standards which obtains in these institutions. As to admission requirements, there are schools which nominally demand little more than a grammar school education and this loosely enforced, while at the other extreme are two institutions which exact a bachelor's degree, a preparation about two years in advance of the German standard. Between these two extremes almost every possible gradation is represented. By the compulsion of the medical examining boards the required time of attendance on the medical school is now almost universally four annual sessions, but these range in length from six to nine months, a variation of thirty-three and one-third per cent. In many of these schools, the faculty is composed of the enterprising individuals who organized them or who have been given positions for considerations having little reference to their qualifications for the work to be done. In only a few schools, have the fundamental branches been placed in the hands of persons who are professional chemists, anatomists, physiologists, etc., these being, in most schools, taught by practicing physicians who not only have enjoyed no adequate preparation and possess no special fitness for the teaching of these subjects, but who have no intention of giving their energies exclusively to them. The wide diversity and illogical character of the curricula of these schools, recently pointed out by Drs. Harrison, Webster and others, make very difficult or impossible migration from one school to another, a custom which is one of the strongest features of the German universities.

The matter of licensure is in the hands of forty-five or more separate boards of medical examiners in the several states, with widely varying standards, most of them now requiring a separate examination, but, unfortunately, these examinations, for the most part are conducted by persons little qualified for that function, the statutes in some of the states expressly excluding from membership in the board, the individuals who are best qualified, namely, those who are engaged in teaching. With negligible exception, these examinations are wholly of written papers, not including tests which are in line with the modern practical methods of education. The general lack of reciprocity between the several states makes the license procured in one of no validity in any other, and this imposes great hardship on deserving and able practitioners whom circumstances may oblige to remove from one state to another.

Discovering such a heterogeneous medley of conditions in the medical system of a great and enlightened nation, would not our medical visitor inevitably exclaim that they are chaotic, and impossible? And could we logically gainsay the justice of his criticism?

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* Address to the graduating class at the Commencement Exercises of the Medical Department of the St. Louis University, 1905.

This condition of affairs has brought into disrepute the diploma of the American medical college throughout the world, because it has been known that the degree from some of our medical colleges signifies almost nothing in regard to the qualifications of the holder; yea, more, that there have been colleges in this country, with as high sounding titles as any, issuing parchments of gorgeous appearance with gold seals of imposing size, in which a medical diploma could be bought outright, the purchaser never having spent an hour within the walls of the institution. It has lowered the tone and status of the medical profession and has deprived it of the political and social influence which it should possess, by reason of the dignity and importance of its mission in the world, and which, in other countries, it does possess. The standing of any calling in the community is estimated not by the character and attainments of its ablest but by the quality of its average members. The ranks of the profession have become greatly overcrowded, the ratio of physicians to population being nearly twice as great in America as in any other country in the world. Recently there were examined by one board in a quarterly examination, 420 candidates. Perhaps the most serious evil growing out of our present situation is the harm which is being done to the present generation of medical students, hundreds of whom are each year being launched into a difficult and exacting career with a preparation utterly inadequate. These are the individuals who most of all are going to suffer hardships, disappointment and failure. Of the difficulties and embarassments growing out of our nondescript system of non-reciprocal licensure, it is perhaps unnecessary to speak at further length. In some respects it is the most difficult problem which presents itself. Not only does the absence of reciprocity impose a serious and unwarrantable hardship on the older physician, but there seems great danger that in the effort to bring about reciprocity, the several boards of examiners, composed of well-intentioned but not always wise or properly informed members, may, with the large power which they possess, place great obstacles in the way of the real and continuous progress of the medical schools.

This unflattering sketch of the medical conditions in America is not overdrawn, but, fortunately, there are some encouraging features in the present situation which give promise of a sure, and, let us hope, a speedy improvement. The wide discrepancy in the character of our medical schools is due to the great advance of some and not to the deterioration of any. None is worse, perhaps not so poor, as some which existed twenty years ago; while some of them may be fairly counted in the first rank of the schools of the world. Several agencies are actively engaged in earnest efforts to improve the situation. Among these are the several examining boards, combined in two organizations, the National Federation of Examining Boards, and the American Confederation of Examining and Licensing Bodies; the Association of American Medical Colleges, which has been trailing along in the rear of the progressive movement for several years, gives some faint promise of at least maintaining a firmer attitude for higher standards. Recently, the American Medical Association, now a splendid and powerful organization, originally founded chiefly for the purpose of advancing the standards of medical education in America, but having withdrawn from active participation in this movement several years ago, has renewed its active interest and has created a Council of Medical Education which promises to be a very useful and efficient factor, especially by co-ordinating the various other agencies which are seeking the same end. Fundamentally, however, the demand for this advance, the real impetus, must come from the medical profession itself, and in this regard, our hope rests mainly on the present and coming generations of medical graduates. The progress in the medical sciences and in methods of medical education has been so rapid in recent years that it has been quite impossible for the average practitioner to keep in touch with it. Few of the older physicians realize how inadequate would be the methods by which they were educated and the standards which obtained in their student days, to meet the great and increasing demands of the present time. It is to such men as you, gentlemen of the graduating class, who have been made familiar with the present state of the medical sciences, that the profession must look for an appreciative and intelligent effort to improve the present conditions. In many ways, these matters are of immediate and vital concern to you as individuals and as members of our great profession.

I have chosen to present in this address a measure which would do much to solve the difficulties above described, and that measure is the general acceptance and introduction into the American medical colleges of the ideas and methods of research. It is not offered as a panacea for all the ills of our body-medical, but I believe it would do more than any other one thing to improve the standards of medical education and practice, to elevate the tone of the profession and to unite and strengthen it as a body of scientific men.

Research is defined as "diligent, protracted investigation especially for the purpose of adding to human knowledge; studious, laborious inquiry. Specifically in science, a systematic investigation of some phenomenon or series of phenomena by the experimental method to discover facts or to co-ordinate them as laws." President Gilman has objected to the word "research," originally proposed by an English scholar, Dr. Appleton, as not a "felicitous term," and, etymologically, it is open to criticism. It has come into such general use, however, that it is pretty certain to continue as the accepted designation, though doubtless other phrases which have been suggested, such as, "the advancement of knowledge," "creative action," "constructive scholarship," "original investigation," etc., are more comprehensive and definite.

Research as an individual pursuit and accomplishment is as old as human progress. From the time of Hippocrates, medicine has been blessed with a continuous line of investigators and to the patient, persistent and deliberate search of these earnest, inquiring minds we owe the vast stores of medical knowledge which we possess to-day, for the facts which have been discovered by chance are so few as to be of no practical account. All the great names which we honor in the history of medicine are the names of investigators. Hippocrates, Galen, Vesalius, Harvey, Ambroise Parè, Boerhaave, Laennec, Louis, Trousseau, Virchow, Ludwig, Liebig, Hoppe-Seyler, Sydenham, Hunter, Gross, Flint, and the host of others whose names are immortal, were all seekers after and contributors of new knowledge. In all ages there have been men—teachers of medicine, who were profoundly versed in the knowledge of their time, yet who made no additions to the store of facts. Of wide reputation as were many of these men in their time, their names are with rare exceptions forgotten, as are those of the great performers in music of past generations, while the name of the composer of even a single great musical creation, obscure though he may have been in his own day, lives forever.

While research as an individual accomplishment is ancient indeed, its recognition as the chief and most necessary function of the institutions of higher learning, is comparatively modern. Though the majority of investigators in past centuries have been members of some university and have accomplished their discoveries within its walls, these researches were regarded as quite apart from their function as teachers. The obligation of the university to support investigation as one of its most important and vital functions may be said to have had no large recognition until the reorganization of the German university system after the Franco-Prussian war. In the rehabilitation of these institutions at that time, great prominence was given to this feature and abundant support was provided for it. The idea was transplanted to American soil by President Gilman in the plans for the Johns Hopkins University, inaugurated twenty-eight years ago, and from this center has spread rapidly and widely to other American universities. And what a revolution it has wrought in our educational ideas and methods! No institution to-day pretends to rank as a real university in which original investigation is not being carried on and supported in some or many branches of human knowledge. The relative greatness of such an institution, as determined by scholars and those who are best qualified to judge, is proportionate to the amount and character of its productive work along investigative lines, rather than by the number of its students, the number and magnificence of its buildings or the magnitude of its endowment. What has made Germany the Mecca of all inquiring medical, as well as other scientific men for the last thirty years? Nothing but the fact that in the German universities were to be found the leaders—the masters in the medical and scientific thought of our time; and they were masters because they were investigators provided with every opportunity for research and with freedom to pursue the truth without let or hindrance whithersoever it might lead. What has made the Johns Hopkins Medical School the recognized center of progressive and stimulating medical thought in this country, excepting that conditions have there prevailed similar to those in the German institutions?

"But," it is often contended, "while such institutions have their place for the training of medical investigators, and of the select few in the profession, it is the business of the ordinary medical school to train men for the practice of medicine; and as such it has no concern with research." These sentiments are expressed in an address recently delivered before the alumni of one of the eastern medical colleges. Referring to the high requirements for admission now demanded in some medical schools, the speaker said: "As a basis for the conduct of research work, literary preliminary training and a knowledge of modern languages may be regarded as imperative, but for the fulfilling of the ordinary duties of professional life to the public, these higher requirements are still held in abeyance." And again he said: "A distinction ought to be made, however, between those institutions which are using the laboratory method as a means of elementary instruction in connection with medical colleges, and the universities that offer unusual laboratory facilities in which specialists may do research work. The medical college laboratory needs only to be practical from the student's standpoint. The laboratory for research must be unusually and specially equipped. The end to be attained in each case is so entirely different that it is unfair to compare the laboratory of the one with that of the other."

It is this narrow conception of the so-called "practical" in medical education and practice, the idea that the student who is to become a physician, in the ordinary sense of the word, needs any less thorough or scientific preparation than the research worker, which I wish earnestly to combat. The true physician is a research-worker every day of his life, in the study of every case that comes to his care, and the best possible preparation for his work is exactly the same preparation which is needful for the investigator, in the largest scientific meaning of that word. This fact has already been abundantly demonstrated by many schools and by the many graduates of these schools. The research idea, as applied to medical teaching, is not a mere theory, an academic proposition, but a demonstrated, feasible and advantageous method. The real question is simply this, is it applicable to all medical colleges?

It will naturally be asked: "Just what is implied by the research idea and method as applied to medical education?"

First, we may say, the full recognition of the fact that research is a legitimate and necessary function of every medical school. The faculty of such an institution is in duty bound to make contributions to the world's store of facts, methods and principles. To this end, it must number among its members, especially in connection with the fundamental branches, men who are devoting their time and energies exclusively to research and teaching. Only in this way can there be secured men who are competent to instruct students. Whatever may have been the case in the preceding generations, in our day the real masters of any branch of knowledge are uniformly those who are contributors to that science, and not merely transmitters of the knowledge of previous workers.

We need such men, moreover, in the clinical branches, men who, relieved of the burdens of ordinary practice, and supported by adequate salaries, are able to devote their entire time to the study of hospital cases, and to the exhaustive investigation of disease in the hospital ward and laboratory.

Second, these men must not only be given a livelihood, but they must be provided with suitable material and appliances, and with adequately trained assistants. All this means expense, and large expense, too; a cost altogether too great to be borne by the student, the expense of whose instruction has already reached the limit of his means. Moreover, as the fruits of this research are to be enjoyed by the community it is proper that the cost should be borne by the community through private endowment or by the aid of the state.

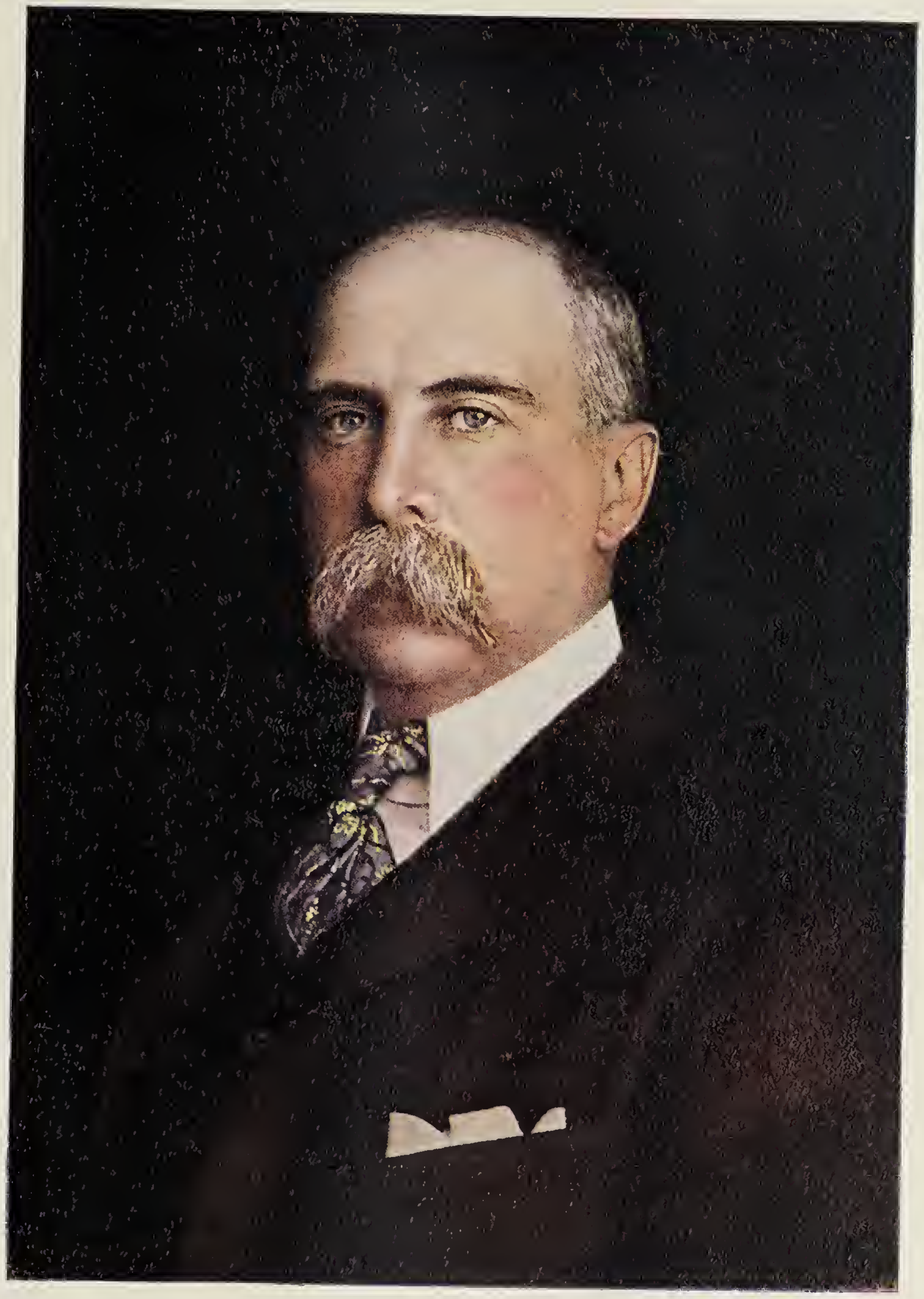
The connection of the medical school with a university is exceedingly desirable, indeed, almost an imperative need. So far as research itself is concerned, some of the very best work has been in small institutions, and, for that matter, entirely outside of any institution whatever. The intimate correlation of the several sciences, of late becoming more evident, and particularly emphasized by the scientific congress which met in St. Louis last summer, however, makes it of advantage that workers in anatomy, physiology, embryology, bacteriology, pathology, etc., and not less in the clinical branches of medicine, should be in close relation with those who are expert in other sciences, especially physics, chemistry and the other biologic departments.

The medical school almost of necessity must be a university department if it is to receive large endowment either by the state or at the hands of private individuals. It is true that in Pennsylvania the legislature has lavished money with prodigal hand on the private medical institutions of that commonwealth, but the system is a bad one, and is not likely to be followed elsewhere. Private donors are little likely to give large sums to an institution members of whose faculty constitute a majority of its trustees and who may vote themselves all of its income in salaries if they choose so to do, but with what confidence may not the university ask for large sums for its medical department? Its substantial and disinterested board of trustees, composed of the members of a great church or of business men of proved integrity and judgment, is as certain a guarantee as can be offered, that all its funds will be wisely used. What department of the university can present for consideration with more firm assurance than that of medicine its great needs and tremendous possibilities, or make a stronger, more telling appeal to the average man of affairs? One would not for a moment disparage those lines of investigation which seem remote from immediate human needs; all truth-seeking is worthy of support. A wise university president has recently said, "No knowledge of substance or force, or life is so remote or minute, although apparently indefinitely distant from present practice, but that to-morrow it may become an indispensable need. It cannot be predicted at what distant nook of knowledge, apparently remote from any practical service, a brilliantly useful stream may spring. It is certain that every fundamental discovery, made by the delving student, has been of service to man before a decade has passed." The imaginary antithesis between the theoretical and the practical is vanishing, as Mr. Putnam, the Librarian of Congress, has admirably shown in a recent address. While, therefore, the claims of any department of human knowledge for the support of its investigators should receive the support of every intelligent man, we may properly enough recognize the fact that to the average man of affairs, there will appeal with especial force those lines of research whose practical bearings are readily demonstrated, and what a world of possibilities are already opened up along medical lines! Calling to mind the thousands and thousands of lives which have been saved by the discovery of the antitoxin of diphtheria—a fruit of the purest sort of laboratory research—think of the magnificent boon which would be conferred on humanity by a similar discovery for scarlatina, measles, pneumonia, epidemic meningitis, and other infectious diseases! What a weight of suffering and wretchedness would be lifted from the race could we solve the problem of cancer! It is the research feature of medical work which appeals with especial force to private beneficence. We have in this country some munificent foundations for this purpose—the Rockefeller Institute for Medical Research, in New York City; the Memorial Institute for Infectious Diseases, founded by Mr. and Mrs. McCormick in Chicago, and several smaller endowments for similar purposes. The medical school which makes research a conspicuous feature, therefore, will be far more likely to secure pecuniary endowment than the institution which restricts itself to the work of instruction.

Yet another essential prerequisite for such a medical school as we are conceiving is a better preliminary training of its students than is now required by most medical colleges. This is imperatively demanded by the conditions of the time, for the good of the profession and the public, and for the protection of the coming generation of medical students. The sciences which lie at the foundation of clinical medicine have expanded enormously in the last twenty-five years, and during that period medical study and practice have made more progress in the direction of scientific exactitude than in all the previous centuries. There is still much that is empirical in therapeutics and even in diagnosis, but the modern progressive practitioner may now approach most of his problems by truly scientific methods, and the hope of medicine for the future lies in the direction of eliminating empiricism and substituting therefor exact methods—the thorough, accurate observation of clinical phenomena, strictly logical deduction from these observations, and the application to each case of well established principles.

To enter on the study of the medical sciences, thus conceived, comprehendingly and effectively, the student must possess a well trained mind, thoroughly grounded in the usual branches of English, Latin, history, mathematics, with a broad and thorough knowledge of physics, chemistry and general biology, and with a good training in the laboratory methods of these sciences, which do not rightfully belong in the medical curriculum at all, except in their application to medical problems. He should have, in addition to these, a reading knowledge of one modern language besides his own, especially of German. Even the best of the high school courses does not afford this preparation. The time has arrived when we may justly and of necessity demand of every person expecting to study medicine, at least two years of work, in properly selected branches, in a literary or scientific college. Bearing in mind the overcrowded condition of the medical profession in America, the large excess of graduates which are annually being poured into it; the readiness with which any earnest, energetic young man in good health, even though he be dependent on his own resources, may secure such an education as we have described; and with the certainty that his future success or failure depends more than all else on the breadth and thoroughness of his fundamental education, is it not reasonable to advance the entrance requirements of every medical school to the standard proposed? We are accustomed to speak of the admission requirements as being determined by the medical schools or by the medical examining boards; as a matter of fact, the essential requirements are really determined by the state of medical science and the conditions of the time; the colleges and examining boards simply interpret these conditions in fixing their own requirements. As this interpretation by a particular college is wisely or unwisely made, so, as a rule, will its students prosper or fail in the career for which the college is preparing them. Under the conditions now prevailing, and which are growing more exacting every year, the preparation afforded by a four-year high school course, plus two years in college, is not in any degree excessive.

To what extent should the individual student engage



Lewis S. McMurtry

PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION 1905-6

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in research work during his medical course? Is it proposed that he shall spend all his time and secure all of his education by such a method? Obviously, the second question is to be answered in the negative. While the fact needs to be emphasized that the chief purpose of a medical course is education in the true sense—a training of the powers of observation and of the mental faculties along medical lines—the acquisition of many facts is essential, and for these he must draw on the great storehouse of knowledge already accumulated. The tremendous advantage of obtaining as much of this knowledge at first hand, by contact with and a study of the objects themselves, as contrasted with the mere memorizing of facts as written or spoken by others—is already universally recognized in the numerous laboratory and practical courses which have so largely supplanted the purely didactic methods of former years. For the most part, however, the student must be dealing with facts and principles already established, though he may approach these to a considerable degree by the methods of original investigation. To every student there should be assigned each year a subject for investigation in which he may actually explore the realms of the unknown by the exact, painstaking methods of research. It will give a zest and enthusiasm to his medical studies which no other plan affords. The wise selection of these topics for research and their judicious assignment among the students according to their special abilities and predilections, is a task requiring careful deliberation and discriminating judgment. The topic should be well within the capacity and equipment of the one to whom it is assigned, should be one that is really worth investigating, in order that he may feel that his results will be of value, and it should have as wide bearings as possible and thus necessitate his seeking information in many collateral topics and branches. Such an investigation need not by any means be a narrow or narrowing mental exercise. With a suitable subject, properly pursued, a seemingly small problem may bring the worker into contact with a very wide range of medical facts and principles in almost every branch of medicine. President G. Stanley Hall, in his recent book on "Adolescence," gives an interesting account of an experience of his early student days in the laboratory of a German professor, who set him to work on a frog's muscle. At first it seemed a trivial topic indeed, and far removed from the large field of study which he had planned, but presently he discovered that to comprehend the method of action of the frog's muscle, he must know thoroughly its minute anatomy and that of the surrounding structures; a knowledge of the nervous system was essential; the action of the muscle was dependent on its nutrition, and this involved an investigation of the physical and chemical processes going on within the muscle as well as in the digestive tract; a comprehensive study of the topic must include the embryologic development of the muscle, and a comparative investigation of the muscles of other animals. Few subjects of investigation if exhaustively pursued, will fail to lead one into numerous by-paths, involving the study of many and diversified facts, at first thought remote from the original starting point; and psychologically, facts thus garnered, cling to the memory, and become part of one's available classified knowledge as do those gathered in no other way.

Such a course of research work need occupy but a minor portion of the student's time, but it will imbue him with an interest and an earnestness in all his other work in a manner truly marvelous. This is no fanciful speculation, it has been observed by many teachers over and over again.

Then, too, the spirit with which one approaches his research work in the laboratory, and the methods by which he proceeds, are exactly those which the successful physician must make use of in the study and treatment of his patients at the bedside. Every case is a problem by itself, no matter how one may classify and designate the particular group of symptoms which it presents. No case of disease, exhaustively considered, is ever exactly like any other, and to the degree with which the practitioner recognizes these differences and adjusts his treatment thereto, to that degree will he be a wise and successful physician.

The union of research and instruction in the medical school is thus of advantage, on the instructional side in that it secures the highest grade of instructors, it affords almost the only basis for procuring pecuniary endowment, it necessitates a better preliminary training of the student, and it provides a method of instruction which gives a new inspiration and enthusiasm to the student, and affords the most logical and effective preparation for his life-work. Such a union is likewise in the interest of research. In the work of instruction the majority of investigators find a stimulus and an inspiration which is highly valued. Says President Gilman: "We often hear discussions as to the relation of instruction to research, sterile intellects attribute their non-productiveness to overwork, when a more acute diagnosis detects a lack of will-power; Sylvester, the great mathematician, said that his mind was never so fertile as when excited by the queries and criticisms of his pupils; and scores of our contemporaries would say so, too. On the other hand, certain minds have done their best work without any pedagogical obligations—no more absolute rule can be laid down than this—let those who have the duties of a professorship discharge them well; and those who have leisure be sure it is not wasted."

Another and more cogent reason why research must, in large measure, be combined with instruction is the fact that such a plan alone affords the investigator the opportunity to select and to train his successors. If medical research is to flourish in this country its most imperative need is that of a continuous and sufficient supply of competent investigators. The successful investigator is both born and made—and their number is very few. Not infrequently he is discovered in a laboratory, in the person of one who would least be suspected of possessing the essential qualifications. The successful conduct of some routine piece of work which has been assigned to him discloses the fact that he is endowed with the essential requirements, and careful training develops him into a ripe and successful worker; but he is one among hundreds, and the master, in order to develop a few competent successors, must have opportunity to study and to select from a large number. Institutions for pure research are useful and necessary, but it would be unfortunate—aye disastrous—both to research and to instruction if they were to be generally divorced. They must, for the most part, in the future as in the past, go hand in hand, if the best results are to be secured.

Finally, the sort of training which has been outlined, would improve the character of medical practice in this country to an immeasurable degree. The pursuit of knowledge by the methods of the research worker develops, as do no other methods, a love of truth for its own sake, an intolerance of guess-work and of pretense, and a patient, painstaking thoroughness and accuracy in observation and deduction, which are greatly needed in this country. We have alluded to the distinction which is constantly made between the theoretical and the practical. How long must it take us to learn that the only practical knowledge is thorough, exact knowledge? A practical education is not comprised in the mere accumulation of those facts of anatomy, chemistry and the other fundamental medical sciences, which seem at the immediate moment to have a bearing on the problems of practical medicine. This might serve if these sciences would only stand still, but progressing as they are with tremendous rapidity, the knowledge of to-day may be obsolete to-morrow, and the facts and methods which now seem most remotely theoretical may be of the most immediate practical importance in the near future. The practice of medicine is applied science, and consists in the application of the principles, facts and methods of physics, chemistry, anatomy, physiology, bacteriology, pharmacology and pathology, to the study and treatment of the diseases and accidents of the living body. In the pursuit of any applied science the only logical method of procedure is to master first the fundamental facts and principles of these sciences; then, and then only, can one intelligently comprehend their application to the specific problems of medicine. Fundamentally the chemistry which the physician must know is the same as that required by the metallurgist, the analytical chemist, the pharmacist or one in any other vocation into which chemistry enters. It is only in the application of chemistry along these special lines that the methods differ. If the physician is to have a ground work in chemistry which will enable him to keep abreast with the advances in his profession, he must so master the general subject that he will be able to keep in touch with the progress in chemistry, to read its literature intelligently and to apply its frequent new discoveries in his daily work. And these statements apply with equal truth to anatomy, physiology, and the other fundamental branches.

The physician trained in such a school is sure to be intolerant of many of the abuses which have so long disgraced the American medical profession. The manner in which the profession has sold itself—nay, given itself away, to the manufacturing pharmacist, prescribing and endorsing a host of proprietary preparations of whose composition he is ignorant, is one of the most disgraceful and humiliating incidents of our profession. These enterprising manufacturers must laugh in their sleeves as they contemplate the facility with which they have induced physicians to advance their purely selfish commercial purposes by establishing their nostrums, by the petty bribery of free samples, and of blotters, pencils, paperweights, and sundry other advertising gew-gaws. It is high time that we ceased to permit these arrogant gentlemen to be our therapeutic mentors. No truly scientific physician will ever prescribe a preparation unless he knows positively its exact working formula, nor is there any sufficient reason for his prescribing any combination which is protected by a trade name. Departure from this strict rule of professional integrity and self-respect has proven a boomerang in not a few instances, when the manufacturer, his nostrum thoroughly advertised to the public as endorsed by the physician, has proceeded to assure them that his panacea was all-sufficient and that its use would enable the patient to dispense with the expensive services of perhaps the very physician who had recommended it.

Our medical literature, so much of which is anything but creditable, will be greatly purified and elevated when the profession consists of broadly educated men with discriminating judgment who will not tolerate the flabby, unscientific stuff which now makes up so large a portion of it. In this connection, may I urge the importance of a careful selection of the medical journals which will constitute a large and important part of your mental pabulum throughout your active lives. Shun the organs of the manufacturing pharmacist, or those which devote themselves mainly to the exploiting of proprietary remedies. Do not choose a journal because of its low subscription price—good medical literature, like anything else which is of good quality, must command a reasonable price and is ever the cheapest investment. If you are in doubt as to what are really the best journals, seek the advice of some older, and scientific practitioner, but by all means start out in your professional career by reading journals which are worth your while. Unfortunately, this class is not a very numerous one and the selection will not be difficult. You will find it of advantage to keep in touch with the purely scientific side of medicine by reading at least one journal devoted to anatomy or physiology, to bacteriology, or pathology, or such one of these fundamental branches as most interests you.

And lastly, may I suggest that you may with the greatest advantage start out in the career you have chosen, as an investigator, putting into practice the ideals and methods of research, and training yourselves by their daily exercise. In the early days of your practical life, when you will be blessed or troubled by few patients, select some topic in anatomy, histology, physiology, or any other department of your choice and devote a portion of each day to its pursuit. The number of such problems is legion, and abundant material for study will lie at your hand, no matter where you may locate. In the selection of the topic and the conduct of your research those who have taught you here will be delighted to assist and to advise you.

Later, as clinical cases come to you, these will naturally become, at least in part, the objects of your researches, but the training you have acquired in the pursuit of the simpler problems, where the factors were few, and more readily grouped and controlled, will be sure to make you more painstaking, thorough and scientific in your clinical work. You will have formed the habit of seeking out exhaustively every fact which can have any possible bearing on the case, of recording these observations accurately and of deducing your conclusions only when this has been done. Clinical observations so made and recorded are scientific data, and furnish the best possible material for real contributions to medical literature. Time can be found for such work even in the midst of an arduous practice if one will only order his time systematically. It is the greatest and busiest men who do find time for these things. One of the great surgeons of the world laid the foundations for his splendid career by experimental research while conducting an extremely arduous and time-consuming country practice. Robert Koch was a country practitioner when he discovered the bacillus of tuberculosis. Such investigation, even though the topic be small and simple, serves to keep one in touch with the scientific side of medicine, and a worthy and familiar associate with the greatest men in its ranks.

Gentlemen of the graduating class, as a fellow-physician, I welcome you to the ranks of the great profession of medicine. You enter its active life at a very interesting epoch. While the profession is overcrowded there is always room at the top; never was there greater need and demand for earnest, faithful, properly trained workers. Great things have been accomplished in medicine in the last quarter century, great work is being done to-day and the immediate future is pregnant with yet greater possibilities. I wish for you the fullest measure of participation in the magnificent activity which is all about us, and the achievement of the largest possible success.

Original Articles

AINHUM.

WITH REPORT OF A CASE.

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Ainhum, from the Nagos native name, meaning "to saw," may be defined as a pathologic process, the ultimate result of which is a spontaneous amputation of one or more fingers or toes, usually the little toe. This occurs through a slow but gradual circular strangulation. The disease when unchecked inevitably leads to loss of one or more fingers or toes. Generally only the little toes are affected, but cases occur in which other toes are attacked and amputated.

HISTORY OF THE DISEASE.

The affection was first described by Clark,[1] and later by Da Silva Lima[2] of Bahia in 1866, who gave to the medical world the first complete reports of this strange malady. It was at first supposed to be confined exclusively to Brazilian territory. Since then, however, it has been reported from nearly every quarter of the globe. It has been met with most frequently on the western coast of Africa, in Brazil and in India. It is also reported from Egypt, Trinidad, Buenos Ayres and other parts of the world. The affection occurs most frequently in the negro, although cases are reported in Arabs, Musselmen and Chinese. In the United States the disease has been met with most unfrequently and I am able to find in our literature not over twenty cases reported of this strange affliction.

All these cases have occurred in negroes. Hornaday[3] reported a case in a negress from North Carolina; Horwitz[4] of Philadelphia and Shepherd[5] of Canada found cases in negroes. Evans[6] reports a case in a negro, aged 72, at Darlington, S. C.; Dr. R. H. Days of Baton Rouge, La., had a case in a negress, and Dr. J. L. Deslates, also of Louisiana, reports four cases occurring in St. James' Parish. Another case is reported from the Emergency Hospital of Washington, D. C., and Matas[7] and Isadore Dyer[8] of New Orleans have written extensively on cases observed in that city. Hyde and Montgomery, Stelwagon,[9] and others have also reported cases. So rare, then, is this disease in the United States that the records show scarcely over a dozen cases; and yet the disease is so prevalent in India that Crawford found a case in every 2000 surgical cases at the Indian hospitals. The absence of pain or inconvenience in many instances, doubtless, keeps the number of cases reported few and far between; moreover, we must take into consideration the fact that the class of persons afflicted with ainhum are seldom brought in contact with medical men. Thus it happened that in my case, complete amputation of one toe and almost complete amputation of another had manifested itself before the patient sought relief or obtained knowledge of his condition.

SYMPTOMATOLOGY.

The disease begins almost invariably with a crack or fissure at the root of the little toe on the plantar or inner side. It may occur on one foot only, or in both feet simultaneously, or it may affect one foot after the other, as in my case. The groove, once started, deepens and extends gradually around the whole circumference of the toe. As the groove deepens, generally without ulceration, bleeding, or discomfort to the patient, the distal portion of the toe enlarges and may swell to twice its normal size. It becomes rounded and ball-like in appearance and may be even wider transversely than anteroposteriorly. After a varying period of time, ranging from two to ten years, the phalanx is absorbed, the blood vessels become obliterated and the toe drops off. Pain is never a marked symptom unless it occurs incidental to the liability to injury to which the dangling and now everted toe is exposed. The pain may also occur as a result of the swelling and edema of the constricted part. There may be an erythematous eruption accompanying the constriction or the ulceration due to traumatism in the latter stage of the disease. These ulcers, if they do not show a tendency to ready healing, may become quite pain-

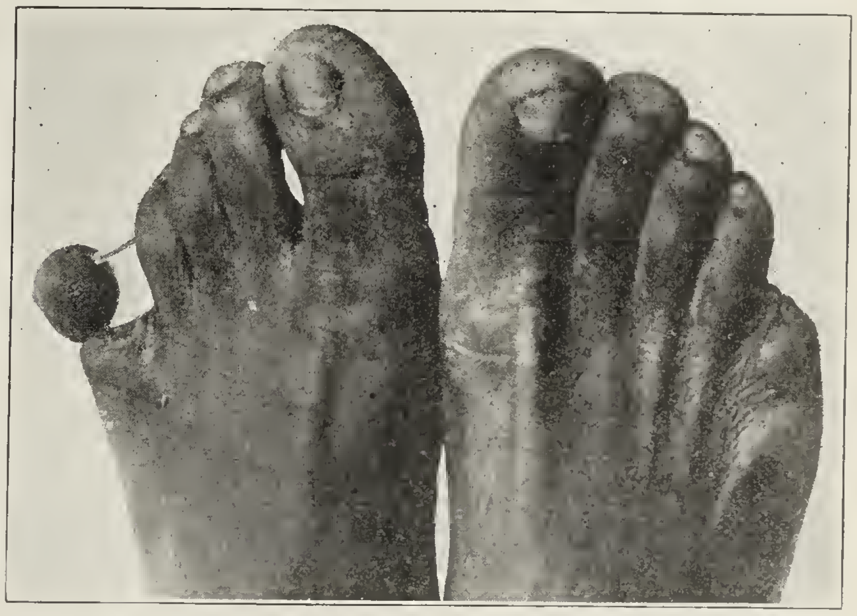

Fig. 1.—Ainhum. Case of Dr. Nelson D. Brayton's, March 1905. Spontaneous amputation of little toe on right foot. Little toe on left foot almost severed. Characteristic tumefaction and enlargement of the ball-like portions beyond constricting band.

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1. Clark: Trans. Epidemiology Soc., London, 1860.
2. Da Silva Lima: American Arch. of Derm., 1880, p. 357.
3. Hornaday: Trans. Med. Soc. of North Carolina, 1881, vol. xxviii, pp. 76-78.
4. Horwitz: Med. and Surg. Reporter, Phila., 1887, vol. lvi, p 649..
5. Shepherd: Amer. Jour. Med. Science, Phila., 1887, vol. xciii, p. 137-140.
6. Evans: Trans. Med. Assoc. of South Carolina, Charleston, 1887, p. 93.
7. Matas: New Orleans Med. and Surg. Jour., vol. xvi, p. 603; and Trans. Amer. Surg. Assoc., 1896, vol. xiv.
8. Dyer: Reference Handbook Med. Science, vol. 1.
9. Stelwagon: "Text-book on Diseases of the Skin."

ful, particularly those located in or near the digitoplantar fold. This is especially noticed in the wearing of a tight shoe or in disturbing the normal posture of the toe in taking on or off the shoe.

ETIOLOGY.

Ainhum is a disease more common in males than in females; it is rare in the latter. Thus, of von Winckler's[10] 20 cases, all the patients were males. Heredity may occasionally play some part in the affection, (Da Silva Lima,[2] Dupouy, Duhring). In Duhring's[11] case, the father and mother of the patient both had the disease. Ainhum may occur at any age but is most common between the ages of thirty and thiry-five years. Cases have been reported in utero. Le Brun reports a case at six years; again it has occurred as late as 70 years (Evans), the process lasting over fifty years.

It is a disease essentially of the negro race (it has been reported in but four whites) and occurring in tropical climates, although exotic cases do occasionally occur. A parasitic nature of the disease is maintained by some but this has not been proved and is improbable. Zambaco Pacha[12] maintains that it is an attenuated form of mutilating leprosy, but his theory lacks confirmation by other trusty observers. This is practically all we know of the etiology of ainhum. It has been asserted that the malady is due to the wearing of rings on the toes, but the disease occurs in tribes and races that never wear rings and who wear shoes instead. The flatfootedness of the negro is supposed to explain the fact that the fourth and fifth toes are more generally affected.

Injury, such as stone-bruise, has been attributed as the initial cause, and well authenticated cases have been reported in which traumatism has been distinctly remembered, but competent observers deny that habits, work, or accidents, are a feature in the causation and that the traumatism simply draws attention to the pre-existent condition.

Manson[13] states that it is considered by some observers as a trophic lesion dependent on some nervous affection. Dupouy reports the occurrence of severe loin pains at the commencement of some of his cases and the tendency of the disease to run in families. This is also noted by Da Silva Lima[2] and Duhring,[11] as noted above. The suggestion that it is a form of sclerodermia or leprosy, or produced artificially by the wearing of rings or intentional ligatures, or provoked by wounds inflicted on bare feet while walking through grass, reeds or rushes, shows the variety of causes ascribed as instigators of the disorder.

HISTOPATHOLOGY OF AINHUM.

The histology of ainhum shows it to be a direct ingrowth of epithelium with a corresponding depression of surface due to a rapid hyperplasia that pushes down and strangles the papillæ; thus cutting off the blood supply from the epithelial cells and causing them to undergo degenerative changes with fatty metamorphoses and dry gangrene.

Unna[14] gives a remarkably clear exposition of the present belief of the pathology of ainhum. He considers it a primary degeneration of the skin. "It is a sort of ring-formed sclerodermia with callous formation of the epidermis, leading to secondary total stagnation necrosis, which has a close resemblance to the artificial elastic snaring of tumors." Besides a primary inflammation with marked hypertrophy of the epidermis as indicated by the callous formation, there exists a condition of chronic inflammation.

"The horny layer is much thickened especially in the ridge-net of the epidermis, and the papillæ are consequently elongated and narrowed. The basal prickle layer is, as usual in negroes, deeply pigmented. In the papillary body, there is cellular infiltration. The papillary vessels are dilated, and the larger and deeper lying vessels of the cutis and the hypoderm show obliterating endarteritis in different stages of development. There is thickening of the membrana propria."

These are the progressive changes found in stagnatory dermatoses. When the stratum corneum becomes thickened even in small areas, as in corns, atrophy of the underlying epidermis occurs. It is to be expected, therefore, that, with this hyperplasia of the epidermis and downgrowth of the interpapillary process, the corium should show an increase of fibrous tissue and fat; that owing to pressure necrosis there should be changes in the deeper blood vessels and arteries; an increase of the adventitia or intima coats of the arteries so that the lumen is impaired, and finally obliterating endarteritis with slow gangrene. Eventually, the constricting band approaches the bone; tumefaction of the toe occurs with stagnation of lymph and fat, gradually causing degeneration of all the constituents of the bone tissue, pulp, and cutis; a condition of rarefying ostitis takes place with final disappearance of the ungual phalanx, the partial disappearance of the second, and almost always the preservation of the third. The line of the division may occur through the middle of the proximal phalanx or at the proximal interphalangeal articulation.

The pathologic points of interest concern the changes produced after the early appearance of primary inflammation. Whether this is due to a callous formation, is yet to be determined. Hence the necessity of microscopic examination of sections removed at an earlier stage than has previously been done.

Ainhum is certainly not a form of leprosy. The lepra bacillus has never been found in the tissues nor are there any other earmarks of that disease. The most acceptable view would seem to be that it is a trophoneurosis of unknown and therefore of purely speculative origin.

DIFFERENTIAL DIAGNOSIS.

The differential diagnosis in ainhum must be made from Raynaud's disease, paronychia, neurotic ulcer, and leprosy.

In Raynaud's disease we have the history of occurrence of pain, the frequent exemption of lower extremities, the constitutional disturbances which accompany a disease which has preliminary lesions such as bullæ, vesicles, edema, etc. Symmetry of the lesions should also serve to establish a quick diagnosis.

Paronychia occurs on the ungual phalanx only; the nail is often affected.

Neurotic ulcer begins as a callosity; it is circumscribed and deep seated, occurs usually on the plantar surface of the heel or great toe, and is never located just at the digitoplantar fold of the fifth toe. It is characterized at the start by loss of central tissue and by a persistent slough ulcerating and discharging freely. In addition, it is painful, often the surrounding parts are edematous and a history of syphilis (locomotor ataxia), leprosy or severe injury to the cord can be obtained.

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[10] Winckler: Brit. Guiana Med. Ann., Demarara, 1891, p. 88.

[11] Duhring: Amer. Jour. Med. Science, 1884, vol. lxxxvii, p. 130.

[12] Zambaco Pacha: Trans. International Leprosy Conference, 1894 and 1897, vol. iii, p. 468; and Bull. Academy of Med., July, 1898.

[13] Manson: "Tropical Diseases."

[14] Unna: "Histopathology of the Skin," p. 1114.

Leprosy of the mutilating type presents after Raynaud's disease the most likely point of error. Leprosy, however, is not confined exclusively to the colored race; it frequently occurs in whites. Its trophic lesions may be formed on any point of the body; not necessarily on some certain toe. Other manifestations of the disease, on other regions of the body, will certainly be present to confirm a diagnosis; moreover, in mutilating leprosy, as in Raynaud's disease, there are preliminary manifestations of necrosis, as bullæ, macules or tubercles at the point of attack where destruction is sure to follow.

A tuberculous ulcer or suppurating corn between the toes could scarcely be mistaken for ainhum.

TREATMENT AND PROGNOSIS.

Treatment of the affection from a conservative standpoint is highly unsatisfactory. Most patients appear too late for conservative measures and only, as in my case, after the toe has nearly removed itself. In the early stages of the disorder, all observers are agreed that linear incision, curettage, excision or scarification of the constricting band is the indicated method of procedure. This, however, does not insure against a return of the malady. Salicylic acid in ointment (20 per cent.) may be applied to remove the horny layer of epithelium or this may be accomplished by wet dressings of Thiersch's solution; (saturated boric-salicylic acid aqueous solution). This will cleanse and relieve the parts from pain but is not of permanent benefit. When the disorder is of long standing or troublesome, the affected toes should be amputated.[15]

REPORT OF CASE.

Patient.—J. V., a negro, aged 24, referred to me by Dr. Thomas Kennedy, Shelbyville, Ind.

History.—Ten years ago he first noticed a crack or furrow on the inner side of his little toe, on the right foot. This crack increased in depth and about six years later the toe dropped off. On his left foot, the disease first appeared about four years ago and has been steadily progressing. The toe hangs only by a thread not larger than a number 12 French sound.

The inconvenience to the patient arises when he puts on or off his shoe, and it has become necessary for him to cut away the outer portion of the shoe.

Remarks.—The illustration perfectly portrays the enlargement and tumefaction of the ball-like toe beyond the constricted portion; also the increased amount of epithelium and cornification over both the right and left phalangeal joints. The patient is a native of Kentucky and no history of heredity was obtainable. He sought relief on account of the pain occasioned by a small ulcer on the plantar surface of the toe.

Amputation was of course advised and performed. Bleeding was slight, and healing occurred promptly without inconvenience.

330 Newton Claypool Building.

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[15] Other reports of cases and references which may be consulted are as follows: Pyle: Med. News, Phila., 1895, vol. lxvi, p. 85-88. Ohmann-Dumesnil: Trans. Med. Soc. of Missouri, 1895, p. 124-137; and Medicine, Detroit, 1895, p. 202. Herrick: Phila. Med. Jour., 1898, vol. i, p. 246. Bass: Nashville Jour. of Med. and Surg., 1898, vol. clxxxiv, p. 201-206. Wolf: Amer. Jour. of Derm. and Genito-Urinary Disease, St. Louis, 1889, vol. iii, p. 3. Eyles: Lancet, Sept. 25, 1886, p. 576. Gould and Pyle: "Anomalies and Curiosities of Medicine," p. 828. Love: Gaillards Med. Jour., N. Y., 1883, vol. xxxv, p. 367-369. Heitzmann, Trans. Amer. Derm., Assoc., Chicago. 1881, vol. v, p. 49-51.

ETHYL CHLORID ANESTHESIA OF THE MEMBRANA TYMPANI AND EXTERNAL AUDITORY CANAL.

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BALTIMORE.

The otologist performs the different operations within the external auditory canal under various difficulties. His field of operation is usually at the bottom of this deep and tortuous canal; the operations, while brief, are ordinarily very painful so that the patient is very apt to jerk his head and throw out of position the operator's carefully adjusted illumination and field of observation, resulting possibly in injury to neighboring structures. For these reasons, let alone the more humane one of saving the patient suffering, some form of anesthetic is desirable or at times even necessary.

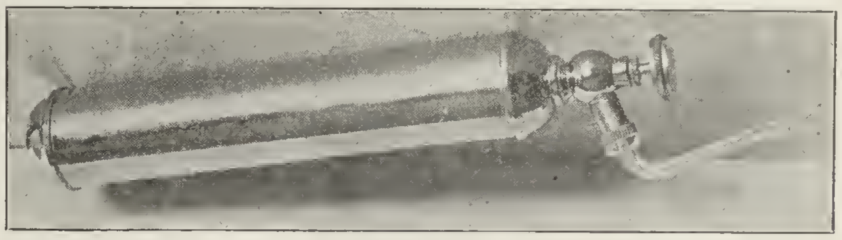

Figure 1.

Except in the case of young children or for delicate and complicated operations, the risk of a general anesthetic seems unwarranted. Solutions of cocain, or its equivalents, are absorbed but slowly and with difficulty by the skin surface of the canal and hypodermic injections are impractical for various and obvious reasons. A more suitable method of obtaining anesthesia in these cases is very desirable.

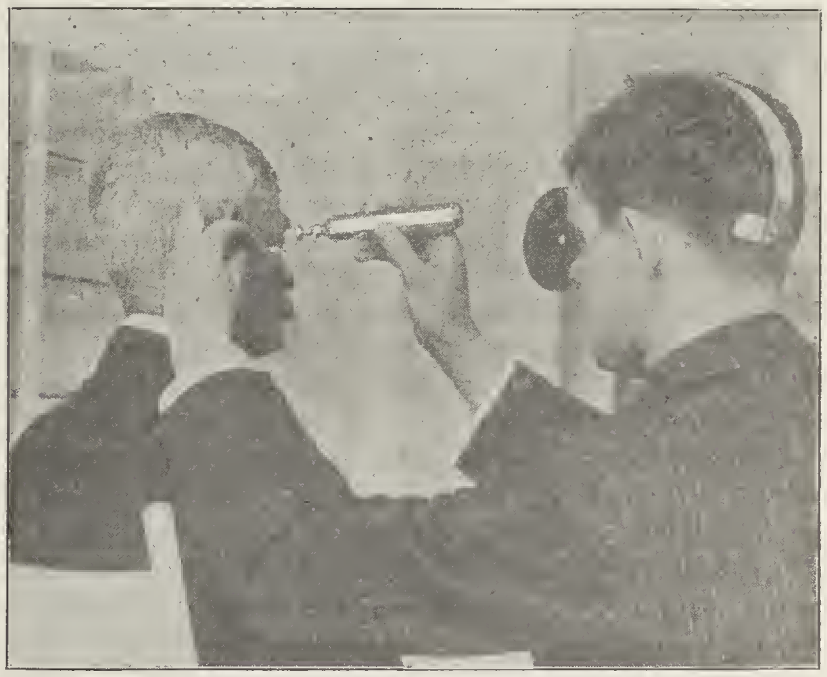

Figure 2.

A very convenient and efficient means of producing local anesthesia is offered to us by freezing the part with ethyl chlorid; which, being always ready and quickly applied, forms an ideal method for office and clinical practice, since no time is lost in waiting for the anesthetic to be absorbed, as is the case with cocain solutions.

At first thought it might appear that the process of freezing may be fraught with danger and cause mischief to the structures of the middle or internal ear, or that the pain and discomfort incident to this process would offset the anesthetic qualities obtained, but practical experience has proven these fears unfounded.

My first experiment with this method was done on a patient suffering from a left facial paralysis of seven months' standing; the left ear was filled with exudate and almost deaf. The case is more fully reported by my friend, Dr. H. O. Reik,[1] who suggested a paracentesis of the drum membrane on the affected side for the relief of the paralysis. A jet of ethyl chlorid was allowed to play into the canal for some seconds and the incision was then made. With the exception of a slight burning sensation due to the ethyl chlorid nothing was felt by the patient, who was a very nervous woman. She almost completely recovered from her facial paralysis and her hearing returned to normal. Encouraged by this success, which demonstrated the harmlessness of the procedure, I have since used this freezing method on every available case that presented itself during my service at the above mentioned clinics and also in my private practice. In no instance was the subsequent course of the case any different from what might have been expected, had ethyl chlorid not been used.

In my earlier cases, I used an ordinary ethyl chlorid tube held twelve to fifteen inches from the ear and allowed a jet of the liquid to play into the auditory canal through the previously inserted speculum. This had some disadvantages. One had no assurance that the drug actually reached the desired spot and hence anesthesia was sometimes imperfect; much liquid was wasted and more than necessary was injected, producing more or less pain and discomfort to the patient, and it was almost impossible to avoid getting some of the liquid on the face or even into the eye of the patient, unless previously protected by a towel.

These disadvantages have been completely eliminated by a new nozzle especially designed for the purpose and made for me by the Gebauer Chemical Co. of Cleveland, Ohio. This nozzle is about two inches long, very slender and is attached to the metal container at such an angle as to permit a good view of the parts beyond when partly introduced into the speculum. The apparatus is held in the same manner as any ear instrument, the body of the container forming the handle and a very fine *spray,* not a jet, is easily directed to the desired spot (Figs. 1 and 2).

In practice, I begin with an almost imperceptible spray, which I allow to play on the part, until the patient feels a certain degree of coolness within the ear, then very gradually increase the volume of the spray by slowly opening the valve, at the same time facilitating its rapid evaporation by means of a jet of air blown into the canal from a Politzer bag. With a little practice one soon learns to know how far it is necessary to carry the procedure in order to obtain a sufficient degree of anesthesia. For my part, I usually shut off the spray when the patient begins to complain of an aching sensation, then blow in a little more air and operate; the whole procedure taking but a few minutes. A minimum amount of ethyl chlorid is used and none wasted, an item of some importance when dealing with such an expensive drug.

In searching the literature on the subject I find that Brieger[2] mentions the use of ethyl chlorid for similar purposes, but up to the present time have not been able to get access to his paper and am not familiar with his method of application.

In addition to the usual minor operations about the ear canal, such as paracentesis, incising furuncles, extracting polypi, etc., I have recently began to use ethyl chlorid in the manner above described as a preliminary to the application of Lucæ's sound in the treatment of chronic otitis media and find it an ideal way to avoid pain, the one objectionable feature of that form of treatment. The results thus far seem to indicate a far greater percentage of markedly improved cases than I was able to obtain before introducing the preliminary freezing; however, further experience is necessary to more fully confirm this statement, and I shall take pleasure to report on the same at a future date.

449 East Twenty-second Street.

THE TRANSMISSION OF DISEASE BY THE MOSQUITO.*

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The study of the life and habits of mosquitoes, not only in their adult stage, but in their cycle of development from the egg to the mosquito, is one of the most fascinating subjects that a person who has the time could possibly take up. Not only is the subject fascinating, but it is also of great importance that the life history of all species of mosquitoes should be understood, as they have been proved beyond a doubt to play a prominent part in the transmission of disease to human beings and animals, and more especially is this true of malaria, yellow fever and filariasis.

Mosquitoes belong to the order of *Diptera,* of the family *Culicidæ.* They are differentiated from other insects which simulate them by, 1. The piercing mouth. 2. The scales on the veins of the wings. 3. The particular venation of the wings.

There are four stages in the life of the mosquito, the egg, larva, pupa and imago or winged insect. The early stage of the mosquito is always aquatic.

EGGS.

The eggs are deposited habitually on the surface of either natural or artificial collections of water. Occasionally, however, they may be laid on moist soil, or on grass above the water, and hatch out later when water reaches them. The eggs are laid in one of two ways, either singly, each egg lying on its side (*Stegomyia fasciata*); or in a boat-shaped mass containing from 200 to 400 eggs all glued together, each egg resting on its end (*Culex*). The eggs hatch out in from 12 hours to 2 days.

LARVÆ.

The larvæ are cruciform, and easily recognized in the water by their wriggling movements. They have a disproportionately large head. The larvæ of the subfamily *Anophelina* habitually rest in a horizontal position at the surface of the water. Other species hold themselves in an oblique position, head downward, at the surface. The larvæ remain in the larval stage about a minimum of six days, but the duration may be much longer.

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[1] Reik: "The Relationship Between Otitis Media (non-suppuration) and Facial Paralysis of the Refrigeratory Types. Trans. Am. Otological Soc., July, 1904, p. 376.

[2] Brieger: Klinische Beiträge zur Ohrenheilkunde, 1896.

* Read before the St. Louis Medical Society, 1904.

PUPÆ.

The pupæ, third stage of the mosquito, differ from the larvæ in the great swelling of the thoracic segments. They habitually remain at the surface of the water, unless disturbed, when they rapidly descend. They remain in the pupæ stage about 24 hours to 3 days, when they hatch out and become mosquitoes.

MALARIA.

The mosquito malaria theory was held by the ancient Roman writers nearly 2,000 years ago. The same belief prevailed among the peasants in certain parts of Italy and Tyrol, and among barbarous tribes in the malarial districts of Africa. Many other theories prevailed, those most generally accepted being that the disease was due to foul air, night mists, odors from swamps or marshy soil, stagnant water, upturned earth, etc.

In more recent years, we find the mosquito malaria theory advanced in a scientific manner by Americans. Dr. J. E. Nott, in 1848, discussed the question of the transmission of malaria by mosquitoes, being convinced that they transmitted the disease. Dr. A. F. A. King, in 1833, wrote a very thorough article on the etiologic relation of mosquitoes to malaria. Laveran, in 1891, and Koch, in 1892, believed in the theory, but without producing any facts in its support. Dr. Patrick Manson, in 1894, offered the most plausible theory, stating his belief that it must be carried by some blood sucking insect, and from the habits and distribution of the mosquito, he believed the disease was transmitted by this insect. Dr. A. Bignami, in 1894, was probably the first to definitely bring out the theory that the mosquito conveys the infection of malaria by inoculation.

Dr. Ronald Ross, in 1895, began to work on the mosquito theory. He allowed the insects to bite cases of malaria, but failed at that time to get his mosquitoes infected, due no doubt to the fact that he was experimenting with the culex species. In 1897, Ross tried to infect anopheles mosquitoes that he had not tested previously. On examining the insects after a day or two, he was able to find positive evidence of malarial infection in the stomach. The walls of this organ were found to contain encysted parasites (zygotes).

Dr. W. G. MacCallum, in 1897, proved that the gametocytes are sexual forms, describing the process of the micro-gametocyte flagellating and penetrating the macro-gamete. He was probably the first to recognize the true sexual process that takes place between the male and female parasites of malaria.

Dr. Ronald Ross, in 1898, followed out a series of experiments with the malaria of birds, using the culex mosquitoes. He was able to demonstrate the cycle of development of the parasite, from the time that the mosquito sucked into its stomach the blood of an infected bird, until the parasite reached the salivary glands of the insect. Later he succeeded in infecting healthy birds by allowing them to be bitten with infected mosquitoes. What Ross proved in connection with sparrow, or bird malaria, was taken up by Italian scientists, especially Prof. Grassi, who worked out a similar relation between the anopheles mosquito and human malaria. Grassi was able to trace the whole process, step by step, bringing together and applying to the human parasite the knowledge gained by previous workers in different parts of the world, until at the present time no single point in the cycle of development is incomplete.

Dr. Patrick Manson, in 1900, conducted an experiment in London, to test the mosquito-malaria theory. It was not necessary that this should be done to prove the positiveness of the theory, but it served to add another link to the already long chain of evidence, proving that malaria is transmitted to the human being by the medium of the mosquito. For this experiment insects were infected in Italy, then sent to London, and allowed to feed on two men, Dr. Thurburn Manson and Mr. R. Warren of the London School of Tropical Medicine. In each case the fever developed exactly eighteen days after they were bitten, and the benign tertian parasites were found in their blood by competent observers.

Drs. Sambon and Low, with two others, in 1900, volunteered to spend the fever season in Ostia, Central Italy, the most malarial locality in the Roman Campagna, with no protection against malaria, except to avoid being bitten by mosquitoes between sunset and sunrise, the hours during which the anopheles usually bite. This protection they secured by means of a carefully constructed hut, the windows and doors of which were covered with wire gauze, into which hut they retired an hour before sunset. They moved freely about the country during the day time. They lived in this manner for a period of three months, using no quinin or other prophylactic, and not one of the four contracted malarial fever.

A control experiment was inadvertently made during their residence in Ostia. After the assassination of King Humbert, which occurred about that time, fifteen or sixteen police agents were sent to Ostia to arrest suspected anarchists. Though these police spent only a part of the night in the district, every one of them developed fever about two weeks later.

Experiments have also been made by the Japanese army on the Island of Formosa. Two companies of soldiers were stationed in a very malarial locality. The men of one company were very carefully protected from the bites of mosquitoes, and did not suffer from attacks of malarial fever, while those of the other company who were not protected from mosquito bites suffered severely.

Many similar experiments and scientific investigations have been made, so that we now know that a certain species of mosquito is, so far as is known up to the present time, the only natural means of transmission of malaria. The anophelina mosquitoes are the intermediary hosts necessary to complete the cycle of development in malaria. In the case of yellow fever it is a different species of mosquito (*Stegomyia fasciata*) that acts as the intermediary host. The conditions necessary for the existence of the parasites of human malaria and yellow fever are only to be found in the human blood, and in the particular species of mosquito.

Mosquitoes are never born with the disease, it is only when they are given an opportunity to suck the blood of a person having malaria or yellow fever, that they become infected. The parasites have never been found in water, earth or in the air. Experiments made in different parts of the world indicate that the infected mosquito does not transmit the infection to its offspring.

To become infected with malaria, the anophelina mosquito must bite a patient whose blood contains either pigmented spheres or crescent-shaped bodies. The sporulating form of the parasite will not infect the mosquito. It requires from seven to fourteen days, after the insect has bitten a case of malaria, before it is able to transmit the infection to a human being. This period constitutes the time necessary for the parasite to go through its cycle of development, and to reach the salivary glands. It is only then that the mosquito is able to infect. At the time of the next bite, while the insect is taking up blood with one tube, it is pouring out saliva from the salivary glands with another tube, and, with the saliva, the parasite of malaria.

A somewhat similar process takes place in connection with yellow fever, but the cycle requires at least twelve days. There is this difference, however, that to be infected with yellow fever, the *Stegomyia fasciata* must have bitten a patient during the first three days of the illness, otherwise it will not acquire the infection.

So far as we know, no other animal shares with the human being the capability to be the intermediary host of yellow fever, or of the human malarial parasite. Intracorpuscular parasites akin to malaria have been found in many animals, in cattle, horses, sheep, dogs, monkeys, frogs, bats, sparrows, finches, crows, hawks, owls, pigeons, blackbirds, etc., but the parasites are of a distinct species.

Dionisi has found a hematazoon of the bat, which resembles human varieties very much. Koch specially investigated the possibility of transmitting human malaria to the lower animals in Java. He used the orang-outang and hylobates, but failed entirely to produce the disease in these higher apes, as other investigators have failed with other animals.

Mattei injected blood of malarial patients into sixteen pigeons, with negative results. The same negative result was obtained in four instances, in which he injected the blood of infected birds into the arms of healthy men.

The incubation period of malaria in the human being, from the time of the bite by an infected mosquito, varies from two days to three weeks, depending on the particular kind of parasite, the amount of blood taken in by the mosquito, and its richness in parasites.

OPPOSING THEORIES.

It may seem absurd to take up the reasons, or at least some of them, that are given to combat the mosquito-malaria theory. However, it may not be out of place to mention a few of the objections:

Malarial Localities.—It is said that certain places are malarious, in which there are no mosquitoes. I think, if careful search were made, it would be found that the malarial bearing mosquitoes were present.

Foul Air of Swamps.—Some infer that the disease is acquired from foul air. The gas given off from the mud of stagnant pools and swamps has been found to be a compound of hydrogen and carbon-methane, or marsh gas, which can be easily proved to have nothing to do with the malarial infection.

Contaminated Water.—There are still a few persons who maintain that the disease is contracted by drinking infected water. It is possible that many of the supposed cases of malaria from drinking bad water were typhoid cases. Those who have studied the malarial parasites can not understand the possibility of the germ living or propagating in water of any kind.

Night Air.—The idea that people get malaria, as a result of being out at night, is explained by the fact that the anophelina, as a rule, only bite at night.

Upturned Earth.—Epidemics of malaria are known to break out among men engaged in work requiring uplifting of the soil. In these cases the infection is no doubt due to the fact that some of the new arrivals had malarial parasites in their blood when they came, also that conditions were more favorable for the breeding of mosquitoes, on account of the new pools and ditches formed during the digging operations.

It is important that we meet wrong ideas as to the cause of malaria, by disseminating the knowledge that we now possess, either by education or by vigorous sanitary laws if necessary.

YELLOW FEVER.

From observations made in connection with yellow fever, we have reason to believe that infection can not take place except in one of two ways, either by the bite of an infected mosquito, or by direct inoculation of infected blood. Over two hundred experiments have been made on human beings. About 128 of these experiments were mosquito inoculations; the persons being bitten by mosquitoes infected, or supposed to be infected, with the germ of yellow fever. The others were direct blood inoculations, except three. Two of the experiments consisted in making an excoriation on the skin, one centimeter square, by means of scraping and then applying a drop of virulent serum from a case of yellow fever. The result was negative. Another experiment was made, whereby a non-immune subject was allowed to drink water, in which had been triturated the bodies of four infected *Stegomyia fasciata* mosquitoes, the result being negative.

Dr. Charles P. Finlay, at the session of the Royal Academy of Sciences, in Havana, Cuba, August 14, 1881, first gave to the world his eventful theory of the transmission of yellow fever by the medium of the mosquito, reporting, at that time, a series of experiments that he had made on human beings, by which he claimed to have proved his theory. He was the pioneer in mosquito inoculations. From 1881 to 1900, Dr. Finlay, assisted by Dr. Claudio Delgado, performed over one hundred inoculations with supposed infected yellow fever mosquitoes. Time will not permit me to dwell on these experiments, I will simply read an extract of Dr. Finlay's original theory given out in August, 1881:

> Three conditions will, therefore, be necessary in order that yellow fever may be propagated: 1. The existence of a yellow fever patient into whose capillaries the mosquito is able to drive its sting and to impregnate it with virulent particles, at an appropriate stage of the disease. 2. That the life of the mosquito be spared after its bite on the patient until it has a chance of biting the person in whom the disease is to be reproduced. 3. The coincidence that some of the persons whom the same mosquito happens to bite thereafter, shall be susceptible of contracting the disease.

Dr. Finlay's theory was confirmed by the American Military Yellow Fever Commission composed of Drs. Reed, Carroll, Agramonte and Lazear. The positive results obtained by this commission, experimenting in Cuba in 1900 and 1901, proved beyond any question of doubt, that yellow fever is only contracted, naturally, by the bite of the mosquito. They also proved that contact with the patient, fomites, clothing, etc., plays no part in the transmission of the disease.

At the present time, Dr. Finlay explains the process of yellow fever infection in the following manner. He assumes that the germ is a two host, microscopic, perhaps ultra-microscopic endo-parasite of the female of a particular mosquito (*Stegomyia fasciata*). In order that it may complete its life cycle, perpetuate its species, and find its way into other healthy stegomyias, it is necessary that it should penetrate from an infected insect into the body of a non-immune person.

It appears that after the germ leaves the infected insect, and enters the body of the susceptible person, it passes through a certain cycle or evolution, requiring usually three to six days, although the period of incubation in the human being may be extended to at least thirteen days in exceptional cases.

Dr. Finlay holds that the penetration of the germ into the body of the non-immune, is intended for the accomplishment of its sexual reproduction, and that the analogy between it and the malarial parasite holds good, with the difference only, that the latter accomplishes this act in one of the anophelina mosquitoes, while the sexual cycle of the yellow fever germ is supposed to take place in the human host. He suggests the following as the probable cycle of development of the germ in the body of the contaminated mosquito:

a. Introduction of young sporozoits sucked up with the blood of the patient.
b. Growth of the sporozoits to adult age.
c. Formation of schizonts and merozoits.
d. Formation of gametes.

In the body of the non-immune, counting from the time of inoculation by the bite of the infected stegomyia, the following stages, in his opinion, are likely to occur during the period of incubation:

a. Localization of the gametes in appropriate sites.
b. Fecundation of the macrogametes by the microgametes of the yellow fever germ.
c. Formation of the ookinet, and development of the oocyst in appropriate cells (endothelial ?).
d. Discharge of free sporozoits of yellow fever into the circulating blood (perhaps ultra microscopic).
e. Development of the toxemic symptoms characteristic of the invasion of yellow fever in the inoculated non-immune.

The following facts, in connection with yellow fever, are now very generally admitted:[1]

1. The only natural method that is known by which yellow fever is transmitted from the sick to the healthy person is by the bite of mosquitoes previously infected by biting a sick person in the first three days of an attack of yellow fever.

2. On the fourth day of the disease the blood no longer contains the virus of yellow fever, even when the fever is high.

3. Up to the present time it has not been proven that yellow fever is transmitted by any other species of mosquito except the one known as *Stegomyia fasciata.*

4. The infected mosquito is only dangerous after an interval of twelve days from the time that it has ingested virulent blood.

5. Contact with a patient, personal effects, clothing, excretions, fomites, etc., are incapable of producing yellow fever.

6. One-tenth of a cubic centimeter of virulent serum injected under the skin is sufficient to cause yellow fever.

7. The virus of yellow fever rubbed on the denuded skin does not give the disease.

8. The virus of yellow fever preserves its vitality and virulence in defibrinated blood for a period of five days, when protected from the air, preserved under liquid vaselin, at a temperature of 24 C. to 30 C. At the end of eight days under similar conditions the virus is no longer active.

9. Virulent serum exposed to the air at a temperature of 24 C. to 30 C. is inactive at the end of forty-eight hours.

10. The virulent serum becomes harmless after heating for five minutes at a temperature of 55 C.

11. In the serum of the patient the virus of yellow fever passes through a Berkenfeld or Chamberland filter without dilution, providing the density of the filter is not too great.

12. The blood serum of a yellow fever convalescent presents preventive properties. The immunity produced by such serum is still present at the end of twenty-six days. The serum also appears to possess therapeutic properties.

13. The usual period of incubation of yellow fever is from three to six days.

14. Apart from the natural transmission by means of the bites of infected *Stegomyia fasciata* mosquitoes, the only other proved method by which it has been possible to transmit yellow fever artificially consists in injecting non-immunes subcutaneously with yellow fever blood.

15. Experimental yellow fever has been produced by the bite of an infected *Stegomyia fasciata* mosquito fifty-seven days after it acquired the infection.

16. Yellow fever can only spread in regions where the *Stegomyia fasciata* prevail.

17. It is possible to eliminate yellow fever from the world by three methods: 1. Mosquito proof isolation of all cases, including those suspicious. 2. Thorough fumigation of patients' quarters and those adjoining. 3. Attempt to destroy all mosquitoes in all their stages.

18. Neither in the mosquito nor in the blood or any other tissue has anyone succeeded in discovering the germ of yellow fever.

EXTERMINATION OF HUMAN MALARIA.

We have reason to believe that human malaria would disappear from the world, if any of the following methods could be put into effect:

1. If the parasites could be eliminated from the blood of all malarial persons by quinin or other method. This is difficult, because we could never get at all infected persons.

2. If all healthy mosquitoes could be prevented from biting infected persons; or if infected mosquitoes could be prevented from biting healthy persons. This method would be practicable if everybody were to adopt preventive measures against the mosquito.

3. If all the anophelina mosquitoes could be destroyed. This is possible if all the people in all localities of all countries begin, and keep up, a vigorous crusade against the mosquito in all its stages.

Unfortunately, not one of these methods is capable of universal application, and while we may or may not be able to entirely eliminate malaria, there is no question of doubt but that we can reduce the number of cases to a minimum.

EXTERMINATION OF YELLOW FEVER.

From the positive results obtained in Cuba in 1901, under the direction of Col. W. C. Gorgas, of the American Government of Intervention, and still maintained by the Cuban sanitary authorities, we have reason to state positively that yellow fever could be eliminated from the world by the use of measures similar to those used in Cuba, as follows:

1. Destroy as many mosquitoes as possible, so as to limit the number of insects capable of transmitting the disease. We know that if there were no mosquitoes there would be no yellow fever.

2. Prevent mosquitoes from biting yellow fever patients. If we prevent the mosquitoes from getting infected we also prevent yellow fever. This is, perhaps, the most important measure, namely, strict mosquito-proof isolation of all cases of yellow fever and all suspicious cases.

3. Destroy, by thorough fumigation, all mosquitoes that may have become infected by biting yellow fever cases.

EXTERMINATION OF FILARIASIS.

We know that both culex and anophelina species of mosquitoes act as intermediary hosts of the filaria; the worm going through its cycle of development in the body of the insect. After a period of days the insects are capable of transmitting the infection to human beings. We can only expect to exterminate, or at least diminish the disease, by similar methods as against yellow fever:

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[1] These conclusions are based on the experiments and investigations of the following workers: Drs. Charles J. Finlay and Claudie Delgado, in Havana, 1881 to 1900; Dr. A. Agramonte, in Havana, 1899; American Military Commission, composed of Major W. Reed, M.D., and Drs. J. Carroll, A. Agramonte and J. W. Lazear, in Havana, 1900 and 1901; Dr. J. Guiteras, in Havana, 1901; Commission Working Party No. 1 of the Yellow Fever Institute, Public Health and Marine-Hospital Service, composed of Drs. H. B. Parker, G. E. Beyer and O. L. Pothier, in Vera Cruz, 1902; Dr. A. Agramonte, in Vera Cruz and Mexico City, 1902; French Commission, composed of Drs. Marchoux, Salimbeni and Simond, in Rio Janeiro, 1902 and 1903; Brazilian Commission, appointed by Dr. Emilio Ribas, composed of Drs. L. P. Bareto, A. Gomez de Silva and Julio de Barros, in Sao Paulo, 1903.

1. Compulsory mosquito-proof isolation.
2. Thorough fumigation of patients' quarters, etc.
3. Destruction of all mosquitoes in all their stages.

QUARANTINE.

We should endeavor by all means possible to prevent importation of all persons having transmissible diseases. Quarantine, if strict, will exclude yellow fever and diminish malaria in any country. However, should yellow fever gain entrance to a place, it is easy to control and exterminate by the methods above mentioned.

All persons on steamers, coming from countries where yellow fever is prevalent, should not be allowed to land until a period of five days has elapsed, counting from the time that the steamer set sail from the infected port, and providing no suspicious case has occurred during the trip. If there has been a suspicious case of sickness on board, quarantine should be enforced for at least five days after arrival of steamer. (Persons who present a satisfactory certificate of immunity, may be allowed exemption from quarantine.) The temperature of all persons in quarantine should be taken morning, noon and night, and any one having the least rise of temperature should be at once placed in a mosquito-proof isolation hospital for further observation.

Even if no sickness has occurred on the steamer, quarantine should be enforced for at least one day after arrival of a steamer from a malarial infected country. Temperature of all persons should be taken, and any one having a rise of temperature, sufficient to arouse suspicion, should have his blood examined and, if found to contain malarial parasites, he should be detained in a mosquito-proof hospital, and put under medical treatment until the parasites are known to have disappeared from the peripheral blood, before he is allowed to land.

INFECTED PERSONS.

When persons are found to have malaria or yellow fever, they should be compelled to undergo isolation in mosquito-proof rooms. The bed should also be covered with mosquito gauze so as to afford double protection. In the case of malaria, the patients need only be protected, as a rule, between sunset and sunrise, the time that the anophelina usually bite. In yellow fever, the patients should be protected against mosquitoes day and night, during the early stages of the disease. All persons suspected of having yellow fever must be reported to the board of health, who will immediately arrange to have the patient conveyed in a mosquito-proof ambulance to a specially constructed mosquito-proof hospital. The patient should be covered while being carried to the ward, so as to prevent any possibility of being bitten by mosquitoes. When the patient is inside the special hospital, all danger of spread of the disease is eliminated.

After removal of the suspected patient from his quarters, all the rooms in the building, and in the adjoining houses, must be immediately fumigated, so as to kill any mosquitoes that may have bitten the patient. All persons employed to fumigate rooms should be immune to yellow fever.

METHOD OF KILLING INFECTED OR NON-INFECTED MOSQUITOES.

All rooms or buildings must be tightly sealed before commencing fumigation. This work should be done with care so as not to disturb the mosquitoes in the rooms, to the effect that they might escape. Men employed in fumigating work can secure temporary protection against the bites of infected mosquitoes, by rubbing exposed surfaces of skin with oil of citronella, pennyroyal, or 5 per cent. menthol ointment.

Sulphur.—This is the quickest and most effective agent to kill mosquitoes in rooms, destroying even hibernating forms; but its use is objectionable because it tarnishes metals and bleaches fabrics. From one to four pounds of sulphur to one thousand cubic feet of space should be burnt. A small amount of alcohol is added to the sulphur, and, after igniting, everything should be closed tight for a period of from one and one-half to four hours. Pans of water should be placed in the room.

Datura Stramonium.—The powdered leaves and stems of the Jimson weed mixed with saltpeter and burnt, kills hibernating mosquitoes. The proportion used is one ounce of the mixture to each two hundred cubic feet of space. It is the only cheap, safe and effective material for the purpose and was worked out by Mr. George Keller of Newark, N. J., for the New Jersey Mosquito Commission.

Pyrethrum Powder.—Use from one to six pounds for each one thousand cubic feet of space, and expose from three to six hours. This has been found useful, but does not certainly kill mosquitoes, but stupifies them so that they drop to the floor. When the rooms are opened up, the insects must be swept up and burned at once. It is said to be ineffective against hibernating forms.

Formaldehyde Gas.—This is effective against active summer mosquitoes if rooms are kept closed and tightly sealed for two or three hours. Generally use one liter of formalin to one thousand cubic feet of space. It is said to be ineffective against hibernating forms.

TO DESTROY MOSQUITOES IN THEIR EARLY STAGES.

It is while the insects are in the aquatic form that successful extermination can be made, and especially while they are in the larval stage. On account of the difference in the breeding places of the yellow fever and malarial bearing mosquitoes it is best to consider them separately.

YELLOW FEVER MOSQUITO.

This insect prefers to breed in water, in rain-water barrels, cisterns, tubs, cans, bottles or any receptacle containing water. This does not necessarily have to be rain-water.

City or state laws should be in force during the breeding season making it a penalty for any one to be found harboring larvæ, commonly called wrigglers or wiggle tails, around their premises. No water should be allowed to stand in any receptacle, unless it is covered, so that no mosquitoes can enter. The sanitary inspectors should receive special instructions to see that the laws are complied with. They should be provided with petroleum distributing cans, to pour oil on all uncovered, still or slowly moving water that they may find. Generally use about two teaspoonsful to the barrel, or one ounce to each fifteen square feet of water. Rain-water barrels and cisterns should be abolished by furnishing a cheap water supply. However, in localities where receptacles for water are absolutely necessary, make it compulsory that they be mosquito-proof. A strong, tight-fitting lid can be made, having a small space in the center about six inches square. This space is to be covered with fine wire gauze to prevent mosquitoes from entering, and still allow enough ventilation for the water. Surface drainage should be abolished wherever possible. Ditches and open drains should be cleaned occasionally and thoroughly flushed. Pools or ponds that cannot be drained should be filled in with sand or other material, or stocked with fish, or treated once a week with petroleum.

ANOPHELINA OR MALARIAL BEARING MOSQUITO.

This insect breeds in water in puddles, in hollows made by the hoofs of cattle, in pools, ditches, sluggish streams and especially in swamps. In order to prevent such accumulations of water, make superficial drains through swamp lands, or eliminate the water by filling in with sand or earth. Remove the grass and weeds from the edges of pools, streams and ditches. See that irrigation is conducted under restrictions. Pour oil over surface of water where it is practical; this forms a thin film over the surface which kills the larvæ and pupæ by preventing them from breathing. Renew the application once a week. It is doubtful whether the use of oil is successful in the treatment of swamp lands, and it is better to have these filled in or drained.

LARVICIDES.

The New Jersey Mosquito Commission have experimented with various larvicides, with the following results:

Crude Petroleum.—This may be used to kill larvæ as well as adults that attempt to lay eggs. It is useful on salt and fresh water but does not spread rapidly.

Kerosene.—This has the same effect as crude petroleum, but spreads better.

Fuel Oil.—This is like kerosene, but cheaper, somewhat heavier, and more lasting. It spreads equally well on salt or fresh water. It is the most effective mineral oil.

Chloronaptholeum.—This is a creosol preparation, mixes readily with fresh water and kills mosquito larvæ in proportions of 1 to 1,000. Good for gutters and lot pools. Useless in salt water.

Phinotas Oil.—This is a creosol combination. It is the most effective larvicide known. Kills everything from larvæ to fish. Especially useful in sewer basins, gutters, cesspools, etc. Does not work with salt water.

THE ELEMENTS OF DIAGNOSIS OF CUTANEOUS SYPHILIS.*

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The difficulties in the diagnosis of syphilis have been admitted by the most skillful diagnosticians. The reason for this is that the cutaneous manifestations of syphilis may be imitated by quite a number of other less obnoxious skin diseases and that syphilis may often appear in forms which simulate the lesions of other dermatoses. As Dr. White says, the skin, by its comparatively simple structure, is incapable of displaying a large variety of pathologic manifestations, and the limited number of skin lesions are therefore reappearing in a large number of morbid conditions.

No less an authority than Kaposi says:

> The syphilids do not offer any other morphologic properties than the non-syphilitic dermatoses, as they all appear in macules, papules, pustules with secondary formation of scales and crusts. Their unquestioned specific clinical features, by which they can be distinguished from all other non-syphilitic dermatoses, and which impress us as peculiar typical syphilitic symptoms, are therefore not based on their morphologic properties, neither do they depend, as it is often taught, on certain physical properties, as the sepia (copper) brown color, their predominant localization on the flexor surfaces and around the orifices of the body, their symmetrical distribution, circinate appearance, formation of groups, their polymorphism, excessive formation of crusts and scales and absence of itching. For all these external features are encountered also in the non-syphilitic eruptions.

The specific properties of the syphilids are said to be the sum total of the phenomena which compose the pathologic-anatomic course of the individual lesion of which we distinguish three cardinal anatomic features:

1. The products of cutaneous syphilis are all equally composed of a uniform cellular infiltration of the papillary body and the corium and vary only in size.
2. The cells do not show a tendency to form a lasting organization into connective tissue, but undergo retrogression and complete involution.
3. The growth and consummation of the infiltrate follow in certain order and direction. They spread and disappear centrifugally.

But the peculiar specific clinical characteristics of the lesions of syphilis, if determined by these pathologic-anatomic features, are not pathognomonic of syphilis exclusively; they are the clinical expression of cellular infiltration of the papillary body in general and are everywhere met where there is such infiltration.

1. The dense sharply defined cellular infiltration of the corium and papillary layer which is manifested clinically by a papular elevation is not the exclusive feature of secondary syphilis. It is encountered in a large number of other skin diseases, such as chronic eczema, psoriasis, lichen planus, herpes tonsurans, pityriasis rubra, lupus erythematosus, etc.
2. They all show the essential feature that they do not form lasting organizations. They are distinguished by these very same features, which permit a *restitutio ad integrum* from the granulomata, in which proliferating cells undergo further development and formation of new tissue (tuberculosis, leprosy, syphilitic gummata, etc.).
3. The centrifugal spread of the infiltrate is not the expression of the pathologic process, but is determined by the anatomic structure of the skin. It is not the morphologic expression of a specific disease, but is encountered in all morbid processes in the vascular cutis, as, for instance, the different forms of erythemata, psoriasis, scleroderma, pityriasis rubras, etc. All diseases, the pathologic processes of which are confined to the papillary layer or around the blood vessels, are marked by a circular spread, due to the fact that the blood vessels perforate the tissue in all directions which permit a free, that is, a circular spread of the pathologic process.

If these three cardinal symptoms are not characteristic for the pathologic process of syphilis, neither can the clinical phenomena derived from them be regarded as peculiar to the syphilitic infiltrate only. In fact, all the characteristic symptoms which have been ascribed to the papules of syphilis can be applied as well to the papules of lichen planus.

If we analyze the characteristic clinical features of the syphilids, we see that none of them is conditioned by the specific process, and that they all have their origin in external circumstances which may vary in individual cases.

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* Read before the Chicago Medical Society.

The general characteristics of the syphilids which we are taught render their recognition more certain are color, resistancy, surface, localization, central depression and scaling, polymorphism and the chronological sequence and course of eruptions.

COLOR.

The color is not due simply to local hyperemia since it does not disappear on pressure. It is undoubtedly a deposit of some coloring matter in the tissues; but what this substance is and how it is deposited there, is still a matter of discussion. Kaposi says that the specific diathesis may have some part in the production of discoloration. Cornil says that the color is due to extravasation of red blood corpuscles. Neuman intimates that the discoloration is due to pigmented round cells. Kreibich tried to reproduce this color artificially and has found that the color is composed of equal parts of red and brown with the addition to this composition of a trace of black which gives to the resulting color a sombre hue (color tristis). Red is the color of inflammation produced by arterial congestion. The more the blood vessels are dilated and filled (in the beginning of the inflammation) the more will the red predominate. In this state, that is in recent eruptions, we see the roseola syphilitica resembling the roseola vulgaris; brown is the color of the cellular infiltrate coming from the deeper parts; black is the color of blood pigment. It is easy to comprehend that the resulting color can not be constant because its components are subject to variation in the different stages of the disease, or under different circumstances. The red is predominant in recent eruptions, as also in all lesions which contain a permanent cause of irritation, as for instance in the pustular syphilids; or in cases in which the infiltrate is less marked, as in the small papular syphilids. In anemic persons, in whom the hyperemia is less marked, we find the color more brown; on the lower extremity, the lesions are colored bluish-red, due to venous stagnation. These conditions being variable, we cannot assign to the color any absolute value as an element of diagnosis.

RESISTANCY.

This, also, is not a constant symptom. It changes with the degree of infiltration diffused between the meshes of the connective tissue. The flat papule with less infiltration feels less hard to the touch than the thick, round papule.

SURFACE.

This is mostly smooth and shiny, due to stretching of the epidermis, and is naturally not an exclusive character of the syphilids but is met in every cellular infiltration of the cutis which is covered by an unaltered epidermis, as for instance, in lichen planus.

LOCALIZATION AND DISTRIBUTION.

The earlier syphilids are symmetrical and with lesions profusely distributed, but this symptom is found also in other disease in which the pathologic process is localized around the blood vessels and, perhaps, carried by them, as in leprosy, mycosis fungoides and other granulomata. It is true that the eruption has certain prevailing localities, as the proximal portions of the extremities, the chest, forehead and some parts of the face (especially in seborrhoics). This peculiarity, however, is conditioned, not by the specific process, but by external circumstances which produce for the process a *locus minoris resistentiæ*; 1, on places where the skin is more pressed to the bones and therefore more stretched, and 2, on places which, by their mobility, are more exposed to injuries of a mechanical, physical or chemical nature, as the mucous patches on the tonsils—due to the irritation by the act of swallowing, or the condylomata around the anal orifice—due to irritation by excretions.

POLYMORPHISM.

The multiformity of lesions and their co-existence in the various stages of development is often of value in the diagnosis of syphilis. Polymorphism, however, is not constantly present, and besides we may see it in non-syphilitic dermatoses. The difficult cases are just the ones in which there are only a few perhaps uniform efflorescences and in which it is necessary to determine whether or not it is syphilis.

This arbitrary value of the diagnostic elements of syphilis may be the reason why the importance of two other elements is usually emphasized in determining the diagnosis. These are: (1) The ensemble, or the general impression of the whole complex of existing symptoms; (2) the chronological order in the development of the individual symptoms and the intervals between their appearance.

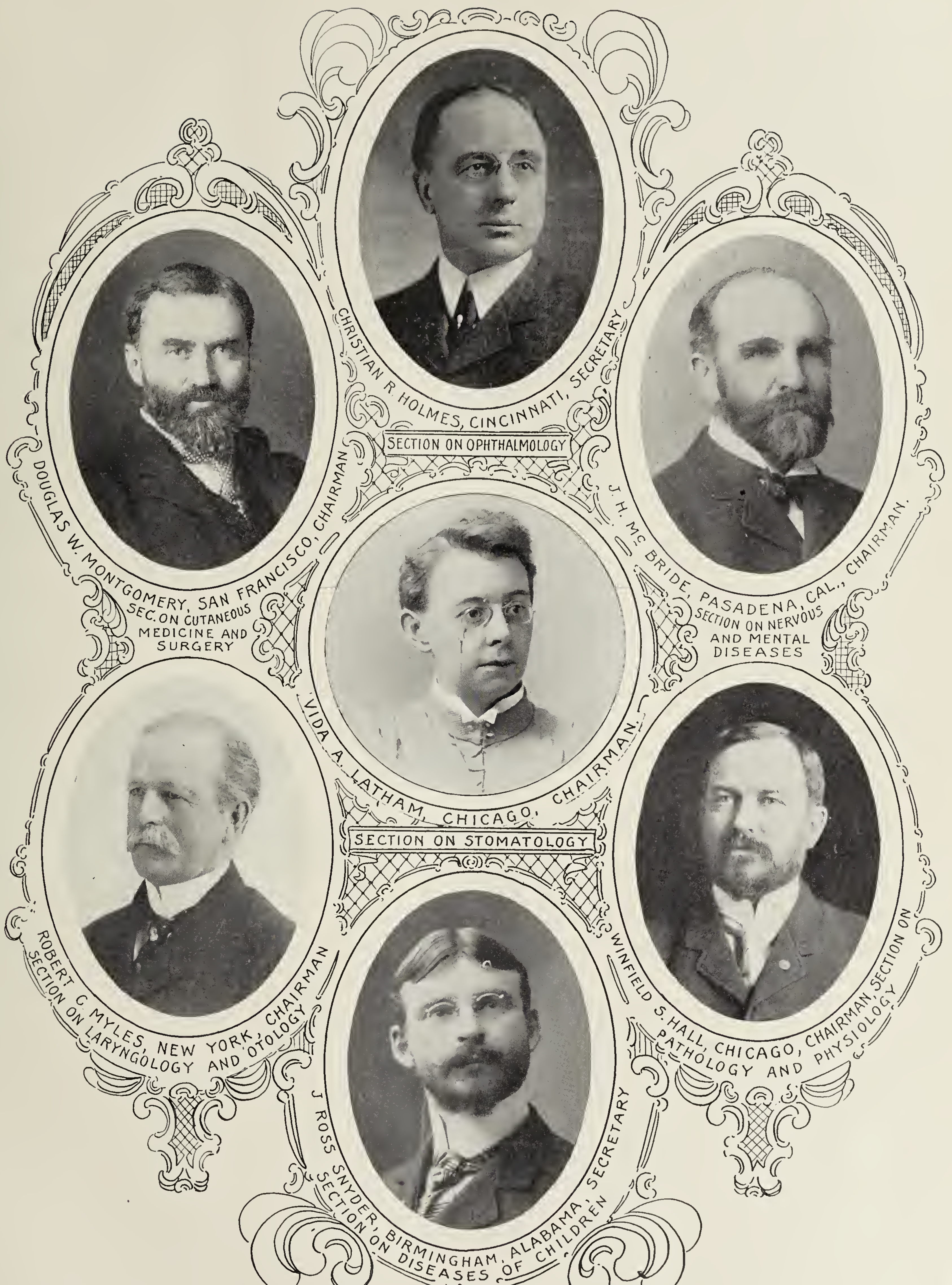
These two conditions, the ensemble of suspicious symptoms of which each by itself may not suffice for a correct diagnosis, and the chronological order of their appearance in intervals corresponding with the classical periods of syphilis, have always been regarded as of the greatest significance and as the most reliable elements of diagnosis in cases of doubtful cutaneous eruptions. By force of habit and power of logic, we are ready to accept the presence of striking symptoms as unmistakable proof of the existence of a disease in which alone these symptoms prevail, and do not hesitate to make a diagnosis of syphilis in cases in which, after an exposure to possible venereal infection, a primary lesion on the genitals is followed by swelling of the inguinal glands and where, in due time after, a cutaneous eruption appears which may be interpreted as some one of the secondary lesions of syphilis.

The object of this paper is to illustrate the possibility of coincidental existence of these conditions in non-specific cutaneous diseases by cases which have come under my observation, and in which the different manifestations appeared in intervals corresponding to the classic periods of syphilitic incubation.

Case 1.—A young man, aged 25, was referred to me by Dr. P. Sisman, with the following note:

"Patient has a sore on the ventral aspect of his penis and enlarged, painful inguinal glands on the right side. The history is as follows: He had sexual intercourse on October 28. About a week or ten days later, he began to feel an itching of the penis, and soon after several small vesicles appeared on its dorsal surface. About November 9, he noticed a pustule on the ventral aspect of the penis which has since enlarged and developed into the present sore. About the first of this month (December) he began to feel pain in the groin, the glands soon became swollen, about the tenth of this month an eruption appeared on abdomen, navel, axillæ, chest, and in the lumbar region. The itching has continued during that time. I have advised the patient to try to bring the woman in the case for the purpose of confrontation, but he did not succeed in doing so."

Examination.—On the ventral side of the penis there was a "pustulo-crustaceous" sore about one-half inch in diameter, which, on removal of crusts, showed deep edges and a red granulating somewhat indurated base. On the prepuce, and near the root of the penis, there were several large papules. Around the umbilicus there were a few larger elevations cov-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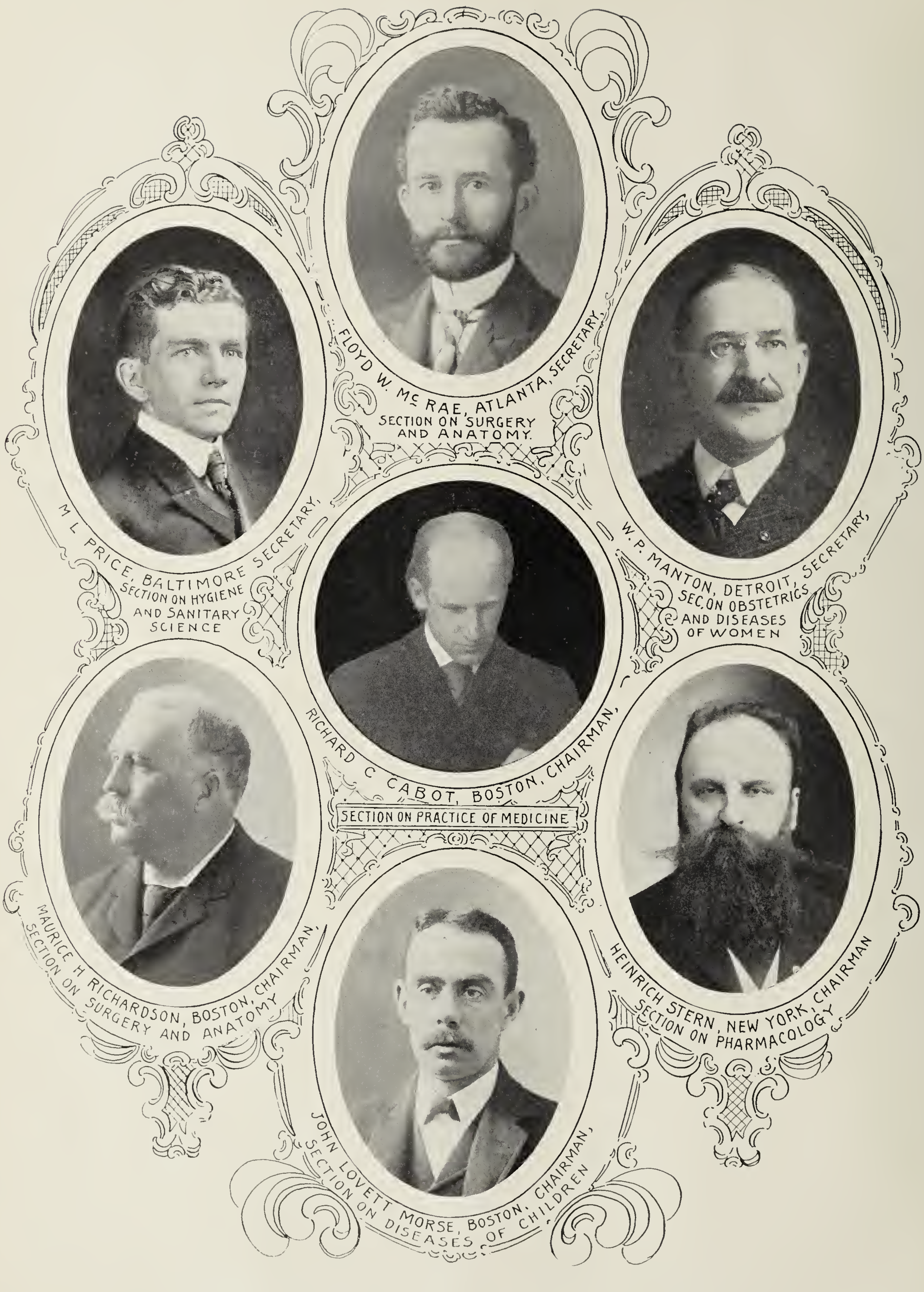

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ered with characteristic scabies crusts, and there were similar lesions on the abdomen and near the axillæ. On the trunk and extremities there were red exudative papules. The inguinal glands were enlarged, somewhat indurated, and sensitive.

The diagnosis of scabies is here apparent, but the history of the case, the induration of what could be regarded as the primary sclerosis and the chronological order in appearance of the adenopathy and the cutaneous eruption, justified the physician in thinking of the possibility of syphilis, either pure, for syphilitic eruptions especially of the genitals may sometimes be accompanied by itching, or of syphilis in combination with scabies. Such combinations have been reported to alter considerably the usual symptoms of both.[1]

I could exclude syphilis in this case for the reason that the elementary lesion of syphilis was absent; the papules were all exudative and not infiltrating, while the element of scabies was present. This element, as I have observed, is the characteristic crust formed over the patches of scabies. The patches, being exudative, prevent a perfect drying up of the crust and the crusts of scabies are, therefore, always mixed with products of acute exudation. They are made up of dried material interspersed with glistening droplets of exuded serum.

CASE 2.—A druggist, aged 22, contracted a gonorrhea, complicated, according to his diagnosis, with a soft ulcer of the glans, some eight weeks previously. He treated himself with injections and by cauterization of the sore. Three weeks later, there was a painful swelling of the inguinal glands, which were reduced in size and sensitiveness by pressure bandages applied by a physician. This was followed by the appearance of red scaly papules over chest and thighs.

Examination.—Chronic posterior gonorrhea. On the glans there was a slight infiltration of brownish red color on place of previous sore. The inguinal glands were moderately enlarged. On the chest, buttocks and thighs there were disseminated solitary papules varying from a pea to a dime in size, dry, covered with thin, muddy, gray scales accumulated over the center of papules leaving the periphery smooth. The eruption was not accompanied by itching.

The difficulties which may confront the diagnostician in differentiating the lenticular papular syphilid from an atypical form of psoriasis (seborrhoic dermatitis) are well known. The authorities lay stress on the difference in the scales of these two lesions. The scales of syphilis are smaller, thicker, less abundant, of a dirty gray color and often do not entirely cover the lesion. The scales in psoriasis are larger and more lustrous, of a silvery or whitish appearance, distinctly imbricated and more freely produced and shed.[2] Other text-books state that the scales of syphilis are developed over the center of the lesion and rarely extend to the periphery.[3]

I have tried to study the scale formation on the papules of syphilis in quite a large number of cases which I had the opportunity to observe in the last few years. Scales are not present in all papules, and the very recent ones do not show any scaling. Later, scales begin to accumulate at the center, but may also cover the whole surface and when they become loose adhere only to the periphery. From my observations I am inclined to believe that the adhesion of the scales to the periphery constitutes a peculiarity of syphilis.

In trying to remove the syphilitic scale by scratching or even slight friction, the center may be entirely denuded while at the periphery a ring of scales remain with the detached side towards the center. I believe this phenomenon can be explained by the difference in the formation of both. The scaling in syphilis is produced by the mechanical detachment of the corneous layer due to the cellular infiltration of the cutis, while the scaling in psoriasis is due to epithelial proliferation and excessive cornification of the epidermis; both of these processes are more pronounced in the center. For this reason, the scales of psoriasis are here accumulated more and more closely attached, while in syphilis, on the contrary, they are more easily detached in the center on account of the greater mechanical pressure from beneath. This difference in the scales enabled me to make a diagnosis of psoriasis in this case. A few *x*-ray exposures brought about the disappearance of the eruption.

CASE 3.—I saw this patient through the courtesy of Dr. N. Remmen.

History.—The patient, a widower, aged 47, noticed a sore on the prepuce some seven weeks previously. Two weeks later, the inguinal glands became noticeably enlarged. Two weeks ago, that is, five weeks after the appearance of the sore, and three weeks after the adenopathy, an eruption appeared on his body.

Examination.—The patient is a robust, stout man; there was no trace of the primary sore. The inguinal glands were somewhat indurated, though not much enlarged, with some tenderness on pressure. The lesions were dark brown, somewhat elevated, slightly scaling, and in size from pinhead to pea. Parts affected: face, over eyebrows and bearded region; back of left hand and elbow, right arm, elbow, and under arm. There were scattered lesions of larger size (about a dime) over the shoulders, buttocks and thighs. Between the shoulders there was a characteristic irregularly outlined area, size 3x1-3 inch, of eczema seborrhoicum. There were scattered papules also on the chest and abdomen. On the glans penis, there were a few papules, and on the prepuce near the sulcus there was a ring of shiny papular elevations. The color was somewhat lighter on the larger lesions than on the small papules, and capillary bleeding could be provoked in some. The patient never had psoriasis before nor had any one in his family.

Treatment.—A reducing ointment (acid pyrogall. comp.) caused the disappearance of the eruptions in two weeks.

CASE 4.—I saw this patient in consultation with Dr. I. M. Lang.

History.—The patient, aged 38, had acquired an ulcer of the glans eight weeks previously. Slight induration of the base made the differential diagnosis uncertain. On application of an antiseptic dusting powder, the ulcer healed in two weeks. Six weeks later, a maculo-papular eruption which soon became intermingled with pustular lesions appeared, first on arms and backs of hands, and then on trunk and face. The great resemblance of the lesion to syphilodermata induced the physician to invite consultation.

Examination.—On the face there were large macular lesions of bluish red color, varying in size from 1/4 to 1/3 inch in diameter, and resembling very much a roseola syphilitica. On the chest, in addition to macules of the same character, there were papules, mostly oval in form, dark red in color, size of split pea and larger, some depressed in center, and the surface smooth, without scales. On the back there were maculo-papular lesions of the same character; in the interscapular region there were longitudinal patches of pointed small papules with vesiculo-pustule in center, resembling acne syphilica, some of them covered with dry crusts. The arms and especially the backs of the hands were covered with oval, dusky red papules. The lower extremities and genital regions (scrotum) showed the same papular lesions. There was no adenopathy, neither were there mucous patches in the oral cavity. The lesions did not itch.

The negative features of the disease rather than the positive, the absence of the lesions on the flexor surface of arms and palms and the absence of a typical

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1. Sibut. Jour. des Malad. Cut. et. Syph., 1898.
2. Prince A. Morrow's System.
3. Kaposi, Shoemaker.

syphilitic papule, induced me to diagnose the case as erythema multiforme.

The similarity of erythema multiforme to syphilis may be still more striking, as is illustrated by the following case:

Case 5.—A florist, aged 24 entered the county hospital on January 6, 1904, with the following history:

History.—Two months previously, a sore the size of thumb nail appeared on the side of the prepuce, coming on 10 days after exposure to venereal infection. He was told by a physician that it was syphilitic and began taking mercury. Four days later, an enlargement of the inguinal glands appeared, followed by the appearance of red spots on the back of the neck. These subsequently spread rapidly over the body. He became hoarse, his mouth became sore, and the red spots over his body began to blister.

Examination.—The patient is a medium-sized, well-developed man. The skin almost all over the body was covered wilth a macular and papular eruption occupying large surfaces of face, neck, trunk and extremities. The upper part of the body was affected more than the lower. On the face, there were papules varying in size from a pea to a dime, brownish red, not much elevated and more macular than papular. On the external corners of the eye the papules were umbilicated and covered with light crusts. The neck presented large patches 1x1½ inches, each having darker color in center with detachment of epidermis above the spots. The chest showed still larger lesions, size from half-dollar to a dollar, running together in large patches presenting a variety of colors, the center was dark and livid, and covered with either a small vesicle or a thin crust. Around them there was a zone of vermilion color surrounded by a slight pink which gradually ran into healthy skin; each patch was raised about 1/16 inch above the healthy skin. The arms were affected more on the extensor surfaces, having similar lesions to those just described. The papules were smaller on the back of the hand; on the palms, the macules were the size of a pea, brownish in color and glistening from beneath the epidermis; the fingers were diffusely livid red. Here and there were a few vesicles. On the legs there were only a few disseminated papules, but the feet, especially the soles, were diffusely red and swollen, making it impossible for the patient to walk. The scrotum and penis were red and maccrated. The penis showed much purulent secretion. The ears were livid and diffusely swollen. The lips were dry, and presented some ulcerations and fissures on the corners. In the oral cavity there were congestion and edema of the mucous membrane, plaques on the tonsils, and foul breath. There was generalized adenopathy.

In this case, in spite of the striking history, the existence of many symptoms of syphilis, the stomatitis, adenopathy, etc., I excluded syphilis because the typical element of secondary syphilis was absent and made a diagnosis of erythema multiforme because the symptoms of this disease, the main element of which is an erythema of the skin combined with an exudative process in the cutis, were marked.

The papule of erythema being exudative, disappears on pressure while the cellular infiltration of the syphilitic papule can not be pressed away. The color of erythema is red, shading to vermilion, with a livid spot in the center, while the papules in syphilis are dark, livid brown, with an atrophic white umbilication in the center. The surface of the papule in erythema is smooth, in syphilis scaly, and its size much smaller, more circular and circumscribed. Erythema multiforme may complicate syphilis, or may be the direct result of the syphilitic poison circulating in the vascular system, or of the mercurial treatment. Cases of this kind have been observed by a number of writers (Finger, Neuman, Danielson and others), and they have all come to the conclusion that there must be some connection between the two diseases, that syphilis may facilitate the appearance of erythema multiforme. This causal relation may have existed in Case 6. The patient may have been a syphilitic or the erythema may have been produced by the mercury which he had been taking for two months. The salient point was to ascertain whether the visible symptoms were those of syphilis, which was important for the treatment to be employed, and for the reasons mentioned I could answer this question in the negative. Salicylates internally and astringent applications externally reduced the manifestations of the disease in a very short time. When the patient left the hospital after two weeks, the red areas had almost completely faded, leaving only slightly pigmented spots. The swelling of the soles of the feet had disappeared and the patient could walk without pain; the lips were normal and the fissures had healed. Cases of this kind are not rare. Lau[4] reported a case of relapsing erythema multiforme, which was mistaken for syphilis and the patient repeatedly treated with mercury in different institutions and bathing resorts, so that he consumed in all about 4 pounds of blue ointment.

CONCLUSIONS.

Summarizing these observations, I would formulate my conclusions as follows:

1. The elements of diagnosis in cutaneous syphilis have only an arbitrary value.
2. The element of time is an unreliable factor in the diagnosis of syphilis. It may happen that simple sores with consequent swelling of the glands will develop in intervals corresponding to the periods of syphilis.
3. The regionary lymphadenitis is not absolutely pathognomonic for syphilis. We may see adenitis of inguinal and cubital glands following infection of simple wounds which have the characteristics of syphilis, viz., they are indolent and indurated.
4. The ensemble of all syphilitic symptoms, in exceptional cases, may be closely imitated by non-specific dermatoses. The diagnosis of syphilis can be made with absolute certainty only when based on positive as well as on negative findings, that is when we not only find the characteristic elements of syphilis, but when we can with certainty exclude all other skin diseases which may appear under the similar symptoms.

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THE PRACTICAL SIGNIFICANCE OF CERTAIN COMMON SYMPTOMS IN THE UPPER ABDOMEN.

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The upper and right hand corner of the abdomen is a field of present-day investigation which promises valuable returns for all efforts made to clear up its symptomatology. It has fallen to the lot of a new candidate for honors in the field of human diagnostic investigation to aid in this beneficent work, viz., the skilled operating surgeon. Surgery to-day, in the hands of the competent surgeon, bids fair to state definitely the reasons for the existence of the symptoms in the upper belly, long recognized by the internist. But neither the internist nor the pathologist, dealing, as they must, with things unseen within the abdomen of the living have even been in a position to point out their true pathology. This surgical investigator of living human pathology, it is hoped, will succeed in doing for us in this region what he has been able to do in the lower belly and pelvis. The patients suffering from pathology in the liver and the gall bladder, the right half of the stomach, and the first portion of the duodenum are legion. True, there are other very important originators of pathology in the upper belly, viz., the pancreas and the right kidney; but my subject precludes more than the naming of these organs, because the task that I have set as the subject for this paper is "The Practical Significance of Certain Common Symptoms in the Upper Abdomen."

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[4] Dermal. Centralb., No. 3, 1900.

Of these, the first in importance is pain. Pain in the abdomen seldom indicates by its expressed location the point from which it originates. This fact has led some one to remark that the sympathetic nerve has no sense; meaning thereby that the point of pain indicated by the patient may have no reference to the pathologic entity which originates it. Ask the patient to indicate the point of greatest suffering, and in the majority the hand will move in an aimless way over the whole abdominal region. This is true regardless of the grade of severity, except possibly where the peritoneal involvement is slight. When the pain is severe, general muscular rigidity over the abdomen is the rule. When the lesion is only great enough to give a moderate degree of distress, the muscular rigidity is frequently limited to the region above the lesion. This point also is seldom accurately located by the patient. In the average chronic case not having an acute exacerbation, lesions about the gall bladder are less sensitive than those of the stomach. Lesions involving the pyloric third of the stomach and gall bladder can not well be differentiated by external manipulative methods alone. Although pressure applied over the lower costal arch on the right side, as pointed out by Eliot,[1] has been found very helpful in about two-thirds of the cases in which the symptoms pointed to inflammation in the region under discussion.

Eliot has shown that costal resistance is likely to be just as marked as is that of the muscles lower down, when covering an inflammatory process. This is especially true in abscess of the gall bladder and cholecystitis. This diagnostic aid has been found useful in my examinations of this class of cases for many years, as it has undoubtedly to others, both physicians and surgeons; but it remained for Eliot to point out and extend its use. I have found it especially helpful in the pain of the upper abdomen, in which appendicitis was one of the problems in the diagnosis. Pressure over the right lower costal arch, which does not elicit pain, will almost certainly exclude acute gall bladder trouble. It is also interesting to note the difference in costal resistance on the two sides, when the right upper belly is involved in an inflammatory process.

Light finger percussion, which elicits pain, is another valuable method of localizing active inflammatory foci in patients who are not over obese. An ulcer in the stomach or duodenum can often be located in this way, and, when combined with the subjective symptoms present in the case, valuable information is obtained. It might be said, in passing, what has probably been said a great many times, or, if not said certainly has always been understood by diagnosticians, that a good diagnostician is self-made, and that a not small part of his skill is so subtle as to defy language to express it. The most that can be said is that diagnosis is the use in this day of the facts worked out by many observers, both clinical and laboratory, combined with the results obtained in the examination of many patients of one class. A combination of all these necessary and obtainable conditions will develop in the individual observer an educated instinct for diagnosis, which is invaluable.

Another source of pain is the distention caused by gas. Gas does not accumulate until the inflammatory condition, or its results, are great enough, as pointed out by Graham, to inhibit peristalsis. In this way can be explained one of the causes of the common symptom of distention in the upper belly, which makes the demand for the various antidyspeptic remedies. The more serious the localized inflammation the less peristalsis; the less peristalsis the greater the distention and pain which results from it. If this localized condition go far enough to perforate and the patient recover, it is at the expense of the adhesions which maintain the local lessened peristalsis; and an acute case is converted into a chronic one.

So far I have referred only to the pain which may result from lesions in the stomach or the duodenum. But the same general symptoms may develop also from inflammatory conditions in the gall bladder, with or without gallstones. It is interesting to note the frequency with which the introduction of food or drink into this corner of the abdomen gives rise to pain, or at least an expression of distress, when any one of the organs in this corner is the subject of disease. Nature tries to keep the parts at rest by refusing to retain in the stomach either food, drink or medicines, and we have been very slow to comprehend the purpose of Nature in this particular.

Another source of pain in the upper abdomen is the contact of the gastric juice with an ulcer in either the stomach or duodenum. This pain is an interesting and characteristic symptom. It is not many years ago that some of us were calling the cases which came complaining of distress in the stomach when it was empty, neuralgia. We learned from our patients that the greatest relief from the pain was obtained by keeping small quantities of food in the stomach. There is probably such a disease entity as gastralgia, which is functional in origin; but we all now believe that in the vast majority of cases it is a symptom, where inflammatory change is the definite and underlying cause. An ulcer of the stomach or the duodenum, in contact with the acid gastric juice, will undoubtedly account for many of the symptoms of pain in the region of the abdomen under discussion. To quote from Graham, who also discusses contact of food on the ulcer, as follows:

> Pain is due almost wholly to the irritant actions of the acids on the open ulcer, with the added element of spasm. The greater the quantity of liquid in the stomach and the higher the degree of acidity the more severe the pain. In other words, intensity of pain and degree of acidity run about parallel. The irritant action of the food as a cause of pain, by passage over the diseased area, can not enter into the question; because anything that diverts, dilutes, neutralizes or removes the acid liquid lessens or entirely relieves pain. Antacids, as a rule, quiet for a time and remove nothing; vomiting or irrigation of the stomach relieves by removing the offending acid; but no rough particles of food which could irritate are found.

Most of those who have written on this subject agree as to the frequency of the pain and formation of gas complained of by patients suffering from lesions in the stomach, duodenum and gall bladder. The next most frequent symptom mentioned is vomiting. Among my own cases, however, nausea is more frequently spoken of than vomiting. Its relation to the injection of food, like that of pain, varies. Pain precedes it in the majority of cases, and it is the suffering from this that undoubtdly brings it on. If the ulcer is in the stomach and is so located as to be brought early into contact with the acid gastric juice, then the nausea or vomiting will be spoken of as occurring within an hour or two of taking food; sometimes the patient will tell us that the pain comes on at once. This is frequently due to gall-bladder inflammation, and is especially common if there are adhesions about the gall bladder. If the ulcer is duodenal, then four or even six hours may go before the nausea may develop. If the nausea comes on early and is followed by vomiting, the rejected food will be but partially, if at all, digested.

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[1] Medical Record, Feb. 6, 1904.

An important determining factor here is the size of the stomach. If this is greatly dilated and, therefore, unable to pass its contents into the small intestine, the patient may suffer for hours; and then by vomiting or by the stomach tube be relieved of a foul, sour-smelling mass of undigested food containing quantities of mucus. Food coming from the stomach in such a state will exclude its ever having reached the small gut. This should be borne in mind; because, although the undigested mass may be removed four or even six hours after being taken into the stomach, it is evident that the latter organ is physically incapable of putting it into the duodenum. If it had, it would be a pultaceous mass showing digestion; so that the degree of digestion is a clue as to its ever having reached the small bowel.

Another interesting fact, that perhaps may not properly be spoken of as a symptom, is that these patients in the first months or years of their suffering from disease located in these organs, seldom complain of loss of weight. Note, please, that I say in the first months or years. In the beginning the majority of them are able to maintain their bodily weight and frequently even to gain; but finally either the impaired nutrition long continued, or the infections which result from the solution of continuity in organs and tissues so richly supplied with lymphatics tells on the bodily weight, and they begin to fail. Recently I had a patient (cholecystitis) who had lost thirty pounds in three months, and who was still losing when he entered the hospital for operation. When this time comes in the history of one of these chronic sufferers, he always brings with him the suspicion of the probable beginning of a cancerous process, with all that awful word stands for.

Bleeding from ulcer of the stomach or duodenum has not, in my experience, been a prominent symptom except in the cases that have had a long history and are far advanced. Frequently they will tell you that years before they had a sudden and severe hemorrhage, but none since; and that practically they had not seen a well day since it occurred. But this failure, on the part of the patient, to note the occurrence of hemorrhage does not necessarily imply that it has not been present. Where laboratory methods are made a part of the investigation of this class, it has been found that a large percentage have blood in the stools; if in considerable amount, blood passing in this way may give the stools a meconium-like look, which is spoken of in the text-books as tarry in character. Macroscopically, this same kind of stool can be produced by the infected bile which may be thrown into the bowel from a gall bladder, the subject of cholecystitis. In this latter class of cases the hematin crystals, which are present in the former character of stool containing blood, will not be found, because of the origin of the color-giving substance in the gall bladder. It is interesting to note that the pain and distress which may accompany these cases of cholecystitis will usually lead to a symptomatic diagnosis of ulcer of the duodenum or the stomach. But the internist or surgeon who has seen many cases of ulcer of the stomach and duodenum will not find it necessary, in the great majority, to examine the stools for hematin crystals. Indeed, a careful history well taken will, in the majority, determine the diagnosis so that there need be no question as to the treatment which should be instituted.

These cases usually have periods in which there is an acute or subacute exacerbation of the trouble. At these times there is usually a moderate degree of elevation of the temperature from 100° F. to 101½° F. It rarely rises above this. The temperature curve not infrequently causes one to think of a possible tubercular element in explanation of its persistence. It reaches its maximum in the early afternoon, and gradually disappears toward evening. It differs, however, in that the 6 a. m. temperature is rarely found subnormal, except in the later stages of the condition, when general systemic exhaustion is pronounced. When this time comes, a subnormal temperature is the rule during the entire twenty-four hours. In addition to the temperature, at this time there is a moderate increase in all of the symptoms which have characterized the previous condition of the patient. There is a little more mental and physical depression; a little more localized distress in the upper right quadrant of the abdomen, especially after taking food, and in consequence of which there is a more pronounced fear of calling on the functions of the stomach, and with it the gall bladder. The patient is willing to drop his usual occupation, and, like a sick animal, seeks a warm and quiet place until the toxemia, which undoubtedly is at the bottom of his symptoms, is thrown off by whatever immunizing resistance he may possess. This is what I am pleased to call the gastric crisis of ulcer or cholecystitis. If resistance is good, the patient may recover his usual degree of health and drift along for weeks, months or years, until another paroxysm of the same kind and due to the same causes renders him inactive for about the same period as the previous attack. These cases are rarely diagnosed correctly, "biliousness" and "dyspepsia" being the words most frequently used as descriptive of the diagnosis, and on which the treatment is based. But there comes a time in the life history of a large number where even a correct diagnosis is futile, as far as preserving the life of the patient is concerned, because of alteration in the functionating tissues of the liver and pancreas, due to persistent infection. I believe, too, that further investigation will show that the results of this infection are chemical through the intervention of bacteria at work in ulcerating areas in the stomach, duodenum or gall bladder.

I have purposely avoided the consideration of other symptoms which will be called to mind as almost invariably present in the condition here discussed. Among these are pain radiating in the region of the right scapula or half way around the waist line on the right side; jaundice; the belching of sour gas; "cramp colic," which is a name descriptive of a condition frequently badly treated by the use of large doses of morphin. These patients are usually obstinately constipated. They often complain bitterly of a bad taste in the mouth and are aware of a foul breath. The abdomen is, as a rule, distended with gas, showing the lessened peristalsis. They are often more hungry than otherwise; but food gives them neither comfort, satisfaction nor nutrition.

To generalize further: The individuals who may suffer or are suffering from symptoms referable to the upper abdomen range in age from the young adult to those advanced in years. As to previous symptoms, almost anything may be true, and nothing may be true. In the majority, however, two words are used which are descriptive only in a symptomatic way, and from this standpoint have had a long and useful career. I refer to "dyspepsia" and "biliousness," two words which we Americans have probably used as often as any two words in the language. Every patient suffering from a train of persistent symptoms heretofore known as dyspepsia has or has had either a gastric or duodenal ulcer, and is suffering from its sequel. Every patient suffering from recurrent attacks of so-called biliousness has either gallstones or a chronically inflamed gall bladder, which is another name for a chronically infected gall bladder. Unfortunately the class of patients which in one may seem to refer his symptoms to the stomach, in another practically the same symptoms will point to the gall bladder as the organ at fault. Fortunately, in the majority of cases, only one primary affection is present. Unfortunately it is not yet certainly known that the removal of the probable primary affection will permit of recovery from all its consequences. Frequently we find an infected gall bladder (cholecystitis) and with it the stomach is dilated. The primary condition under these circumstances will be difficult to determine, even when the abdomen is open. Such difficulties in diagnosis do not militate against the clinician, as these conditions are purely surgical, and the differentiation in many cases, as well as the proper treatment, must be made on the operating table.

Localized peritonitis and recent adhesions when the abdomen is open, will serve as infallible guides in the chronic cases with acute exacerbation; while enlarged lymphatics without adhesions will point the way in the more acute cases. Enlargement of lymphatic glands on the exterior of the body, as a result of infection of nearby tissue, has been noted for an indefinite period. Surgeons, however, were slow in recognizing the lymphatic enlargement found within the abdomen during exploratory operations as due to the same causes, viz., infections. Since the work of Poirier and those associated with him much has been done to advance our knowledge of the special anatomy of the lymphatics. Since their work appeared it has been a much simpler matter to determine the probable location of a lesion, the seat of persistent infection within the opened abdomen. The intra-abdominal lymphatics as carriers of infection open up an immense field for practical investigation as to the possibility of various recognized lesions, especially in the pancreas. Grossly we know what they can do in infections of the appendix, and as disseminators of cancer their work is all prevailing.

The writer has been interested for some years in the question of chronic infections of the liver from persistent gall bladder inflammations, with or without stones; and infections of this same organ as a result of ulcer of the stomach or duodenum. He early learned, in his gall bladder work especially, that a certain small percentage of his cases would die by slow degrees regardless of the favorableness of the primary results following operation; and that a certain other class of nonoperative cases will die, with exactly the same symptoms, and when brought to the postmortem table the pathologic findings are the same in both classes of cases. The following cases will, I think, illustrate this fact very well.

May 19, 1899, I operated on Miss C., aged 26, and removed a large number of varying sized so-called mulberry calculi. Previous to her operation she had suffered from the clinical symptoms of gallstones, together with a chronic cholecystitis. The liver was not enlarged, although notes of the case made at the time distinctly state that the whole liver region was tender to both percussion and pressure made over the costal cartilages. The case was drained and made a good operative recovery, as far as the time spent in the hospital was concerned and afterward while drainage persisted. But she never fully regained her health and finally died, twenty-two months after the operation, with every symptom of internal hemorhage. Before this developed, however, she had the ordinary symptoms of a mild but persistent cholecystitis.

An autopsy was made by Drs. Jesse Rowe and J. C. Creel, both of Abingdon, Ill. They reported to me the findings as follows: About one quart of fresh clotted blood in the upper abdomen, the source of which was uncertain. A small cauliflower-like growth surrounded the common duct, which was patulous. Several soft stones were found in the gall bladder, which was fastened to the anterior abdominal wall. The inner surface of the gall bladder was inflamed and roughened, and when stretched over the finger looked like the surface of a nutmeg. The bile was thin and tarry in appearance. The liver was not enlarged, but yellow, with a gross appearance of fatty degeneration. Unfortunately, no specimens were preserved from either the liver or the growth about the common duct. At the time of the operation there was no appreciable growth about the common duct, and only the usual enlargement of the lymphatics, where sepsis is found in the gall bladder, was present.

My next fatal case came June 20, 1901, Mr. T., aged 77. He also had a history of chronic cholecystitis, with the ill health which it engenders extending over a period of years. On opening the abdomen, a greatly enlarged gall bladder was found capable of holding nearly a quart of fluid, together with a single stone weighing forty grains, which was loose in the cystic duct. The fluid which filled the gall bladder was thin, black, degenerated-looking bile, which characterizes this class of cases. The patient's liver was enlarged and tender to both manipulation and percussion. Not to burden this article with details of the postoperative history, I will merely say that this patient died in twenty-three days following operation, with a continuation of the symptoms of the same kind of infection which existed previous to his going onto the operating table. At autopsy this liver was found enlarged, and sections prepared for the microscope showed extensive fatty degeneration.

My next case of this class was Mrs. C., aged 61, operated on Oct. 2, 1901. This patient gave a history of severe gallstone attacks extending over a period of twenty-five or thirty years. She had the classical symptoms of stone in the common duct. At the operation I removed a stone from the common bile duct, the size of a pigeon's egg. Its upper or gall-bladder end was faceted in two places, showing the pressure of two additional stones; these were also removed. These two were equal in size to the first. This woman lived fifty days, dying, as the other two patients, in exactly the same way. On autopsy, this liver was found to have undergone the same fatty changes that characterized the liver in the case of Mr. T.

A few weeks ago I saw the following case: Mr. B., aged 54, but looking much older, had marked atheroma of the radial and temporal arteries, but has always been temperate as to the use of alcohol and tobacco. He has no specific history. He has suffered from chronic irritation of the stomach for twenty years and gives every symptom of chronic ulcer of the stomach, possibly now malignant. He asks relief because of what he calls his "chronic stomach trouble." Physical examination discloses a stomach with its lower border on a line with the umbilicus. Appendix tender; kidneys negative. The liver in this patient is very small, evidently markedly cirrhotic. Pressure over the costal arch elicits no pain on either side.

This case has not yet been brought to operation; but when he is, what will we find? I believe that it will be both a chronic ulcer of the stomach and a chronic cholecystitis. Further, I believe that the cirrhosis of his liver is the result of long-continued infection from his ulcer in the stomach, or the chronic inflammation of the gall bladder, or both. I believe also that Miss C., above mentioned, would have had the same kind of a cirrhotic liver as is now present in Mr. B. could she have lived long enough, i. e., had a smaller dose of a less virulent infection than she evidently did have, and had not the probable malignant condition found on autopsy intervened. As long as we have ulcer in the stomach or duodenum or an infected gall bladder to furnish a long-continued infection through the lymphatics to the liver and pancreas, we are sure to have occasionally a case which will die following operative procedures in the upper abdomen, regardless of the skill with which such operative procedures are conceived or by whom carried out.

This phase of the question of chronic symptoms in the upper abdomen as indicative of the pathology that may develop there is, I believe, most important, and so far as I know has not been thoroughly worked out, except possibly by Quincke, quoted by Eisendrath,[2] as follows:

> The clinical picture of the cholecystitis usually predominates, so that the cholangitis, with its grave influences on the liver parenchyma, is marked. The course of a cholangitis seems to be most acute with virulent colon bacilli; more chronic with staphylococci and streptococci.

These writers (Eisendrath, and Quincke, whom he quotes) make no mention of the possibility that these infections may be the cause of cirrhosis of the liver in an individual otherwise free from the usual history that precedes the average case of this disease, viz., chronic alcoholism. Eisendrath's paper,[2] is a valuable contribution to the literature of infections of the liver following acute cholecystitis.

Closely related to the above is the great question of cancer of the stomach. If overlooked, infections can produce such dire results; and, as we are slowly coming to realize that they can, what shall we say of this most terrorizing and hopeless condition of them all? You and I know that at the present day, when the diagnosis is made, the treatment in the great majority is by abandonment of the patient to his fate. We have, as yet, no means of making an early diagnosis, either in cholecystitis, cholangitis or in cancer of the stomach. But we have, as I believe I have pointed out above, symptoms which can be very nearly interpreted aright when it comes to these other conditions which are so common in the upper abdomen, certainly interpreted near enough to know that the only hope of permanent cure is by the aid of surgery. When this time comes, as it surely is coming, cancer will be diagnosed in its earliest stages when the surgical treatment will take into consideration the distribution of the regional lymphatics, which in this situation, as pointed out by Cuneo, are the most favorably situated of any in the body for permitting a radical cure. Thus in curing conditions in the upper belly, which give rise to many distressing and common symptoms, we attain a greater end in the promise of a more permanent relief for our cases of chronic infections of the liver and of gastric cancer. In the realization of this, the internist and the surgeon must join together. If they do not, the records of both in diseases of the liver, stomach, duodenum, gall bladder and pancreas will continue to be a page of regrettable failures.

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2. The Journal A. M. A., Nov. 30, 1901.

FOREIGN BODY IN THE BRONCHUS.

H. H. GERMAIN, M.D.

BOSTON.

Since 1897, when Killian of Freiburg reported his method of examining the bronchi by means of long tubes inserted through the mouth or through a tracheotomy wound, it has been extensively used. This procedure is largely confined to the location and removal of foreign bodies, but it has frequently been of value in localizing compression of the trachea from goiter and mediastinal tumors.

Up to August, 1904, there had been thirty-two successful removals of foreign bodies reported and there have been many more since that time. Under expectant treatment, these cases present a mortality variously given at from 56 to 80 per cent. Treated by tracheotomy, this rate is lowered to about 30 per cent. since a much better opportunity is furnished for spontaneous expulsion. These figures are more or less fallacious, as many of the fatal cases are probably not reported and some others considered cured probably die later of lung abscess or empyema. Some operators have "fished" blindly through a tracheotomy opening with hooks, wire loops, forceps, etc., with occasional success. Frequently this success has been due to the mechanical irritation of the tracheal mucous membrane, thus giving rise to excessive coughing and expulsion of the foreign body.

Trans-thoracic bronchotomy, either anterior or posterior, must of necessity be accompanied by a large mortality, given by some authors at 100 per cent., but it is probably somewhat under that. The operation, fortunately, has been but little used.[1]

With Killian's method, only an occasional case will be lost and this will happen when delay has given rise to changes of one kind or another in the lungs. Bronchopneumonia, atelectasis, lung abscess and empyema are among the causes of death in neglected cases.

In adults, it is considered best to introduce the bronchoscope through the mouth (superior bronchoscopy), while in infants and young children, and in difficult cases, the instrument is inserted through a tracheotomy wound (inferior bronchoscopy). Superior bronchoscopy should be avoided in young children as it has frequently been followed by edema of the larynx, which required tracheotomy.[2]

The superior operation requires skill and practice, while the inferior is easy and can be carried out by anyone who has ever used a cystoscope or endoscope. For illumination Killian uses an electric headlight or a head mirror. Instrumentation under these conditions is difficult, while on the other hand a small electric lamp at the lower end of the tube leaves a clear working field. This idea was first carried out by Dr.

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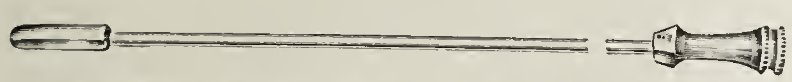
1. Curtis: Ann. of Surg., 1898. Milton: Lancet, January, 1901.

2. Nehrkorn: Deutsche med. Wochft., 1904, No. 40. Heidenreich: Ibid, No. 47.

E. Fletcher Ingals of Chicago. He used a small cold lamp on a light carrier in a Killian bronchoscope. This idea came to me before I knew Dr. Ingals had used it and I had several bronchoscopes made, the feature of which is an electric lamp placed at the lower end of the tube. In this instrument, the lamp is not in the lumen of the tube, but in a groove below it and out of the field. This is an advantage over Dr. Ingals' method, as it gives more room.

The value of this instrument can be illustrated by the case report which follows, in which I used an electric endoscope, as I had at that time no bronchoscope at hand. Critics of this method of treatment say that it requires unusual skill to carry it out, but I must maintain that it does not. Anyone who has used either a cystoscope or an endoscope will have little difficulty with inferior bronchoscopy. Superior bronchoscopy, on the other hand, is difficult and requires special skill. Another thing worth speaking of is the forceps designed by Dr. A. Coolidge[3] of Boston, which is much better than that of Killian, a fact easy to appreciate if one has used both instruments.



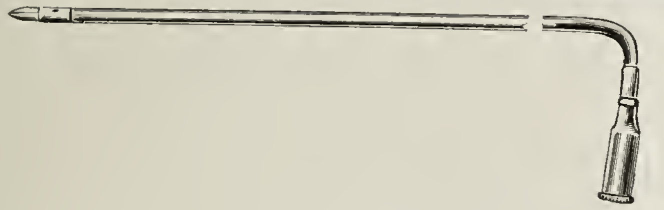


Fig. 1.—Obturator. Fig. 2.—Light carrier, with electric lamp.

History.—Sept. 16, 1904, C. D., aged 21 months, inhaled a peanut kernel, which caused paroxysms of dyspnea and coughing. On September 20 respiration became so bad that a tracheotomy was done, but it gave no relief. On September 25 I first saw the case, with Dr. F. P. Emerson, at the Boothby Hospital. At this time the child was breathing well, but still had attacks of expiratory dyspnea in which he became almost plum colored and seemed to be suffering extremely. On the following day he was much worse, evidently failing in strength and refusing nourishment; respiration, 40; temperature, 102; pulse, 140; breathing, labored; dyspnea largely expiratory. Throughout both lungs numerous moist râles were heard. No areas of consolidation were made out. Left side of chest apparently expanded less than right and respiratory murmur was louder on the left.

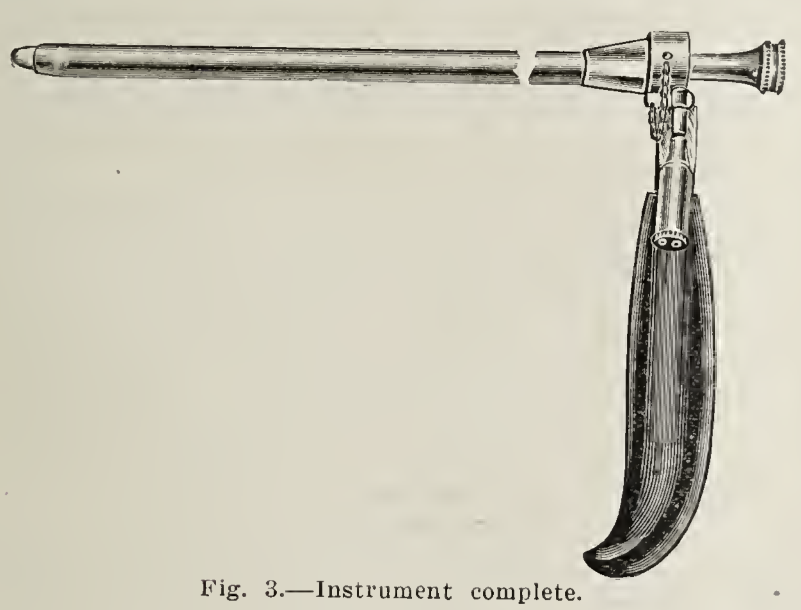


Fig. 3.—Instrument complete.

Operation and Result.—Without anesthesia, a No. 25 F. endoscope 15 cm. in length was introduced through the tracheotomy wound. Mucus was sponged from the tube and a clear field obtained by the electric light at the lower end of the tube. The half kernel of the peanut could be seen in the right primary bronchus and was easily removed with a pair of alligator forceps. The tracheal canula was put in place for forty-eight hours and then omitted at intervals, and left out altogether after a few days. The child passed through a severe bronchopneumonia, but had no expiratory dyspnea after the foreign body was removed. The tracheotomy wound healed in a few weeks and the child is now perfectly well.

4 Arlington St.

Special Article

IMMUNITY.

CHAPTER XVIII (Concluded).

PRINCIPLES OF SERUM THERAPY.

Bactericidal Serums.

Attention has been directed repeatedly to a large group of organisms the toxic constituents of which are integrally associated with the protoplasm of the microbes; the toxic substances are endotoxins. Certain members of this group, of which the typhoid, paratyphoid, colon and dysentery bacilli and the vibrio of cholera are representatives, cause the development of strong bactericidal serums in the immunized animal. In Chapter XIII it was shown that such serums have no power of neutralizing the endotoxins of the corresponding organisms, hence whatever prophylactic and curative properties they may have would seem to depend on the bactericidal action of the amboceptor-complement complex. As to whether the substances which stimulate phagocytosis, i. e., the opsonic or bacteriotropic substances are of importance in the intra vitam action of bactericidal serums remains to be definitely established.

Curative and Prophylactic Power.

It is common knowledge that bactericidal serums have not been successful curative agents, although in test-glass experiments they may be able to kill large numbers of organisms. Experimental work has brought to light a number of conditions which render their ineffectiveness somewhat intelligible, but has been of little service in increasing their value, and at the moment their outlook as curative agents is not very encouraging.

Animal experiments indicate that when used prophylactically they are much more powerful. Unfortunately, however, as in the case of antitoxins, the immunity which is conferred is of short duration, the serum being excreted or the antibodies destroyed within two or three weeks. For this reason they are not suited for general prophylactic use in man. They may be distinctly useful when combined with vaccination, as indicated later.

Time of Injection.

Bactericidal serums are efficient in saving experiment animals, provided the serum is injected in advance of, simultaneously with or very shortly after the bacteria are introduced. By injecting the vibrio of cholera and anticholera serum simultaneously one may readily save a guinea-pig from ten times the fatal dose, or more. If the culture be injected first and the serum later a larger amount of serum is required to save the animal. After a few hours a sufficient amount of serum to kill all the vibrios may be injected, yet the animal will die from the action of the endotoxins which have been liberated. The organisms had proliferated to such an extent that the mass, though dead, contained a fatal amount of endotoxin. A statement made previously may be repeated, that the adminstration of a bactericidal serum rather than being beneficial may actually be injurious, in that the microorganisms are dissolved rapidly and an excessive amount of endotoxin thereby liberated; this, perhaps, is not definitely established as a point of practical importance.

Having determined the amount of a bactericidal serum which is able to save a guinea-pig from an incipient infection, one may calculate on the basis of weight the amount which would be required to save a man under the same conditions; usually it runs up to impossible amounts, hundreds of cubic centimeters. The conditions are all the less promising when we remember that physicians are usually called on to treat well established infections; they are beyond the incipient stage as one would speak of the incipient stage of an experimental infection.

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[3] Boston Med. and Surg. Jour., May, 1905.

Peculiarities of Complement and Amboceptors.

Other conditions which operate against the effectiveness of bactericidal serums as curative agents have to do with peculiarities of complements and amboceptors. The lability of complement involves certain difficulties. A bactericidal serum, as one would purchase it, contains none. This difficulty may be obviated in three ways: First, one may use serums which are fresh from the immunized animal; second, one may complement the solution of amboceptors (old immune serum) by the addition of fresh serum from an immunized animal which is known to contain suitable complement; or, third, one may inject the complement-free serum and place reliance on the complement which exists in the plasma and lymph of the patient for activation of the amboceptors. It is sufficiently established that none of these procedures enhances the curative value of the serums to a satisfactory extent.

Absorption of Complement by the Tissues.

Regardless of the amount of foreign complement which is introduced, it appears to be diverted from its function. It has been shown experimentally that the tissues often absorb a foreign complement, and the mere fact that anticomplements are formed so readily also indicates that this may be the fate of complement. In accordance with a rather general principle, if the animal which furnishes the serum is rather remote from man zoologically there is all the more likelihood of the complement being fixed by the tissues.

Choice of Animals for Immunization.

It has been suggested that if one should choose for immunization animals which are closely related to man, as chimpanzees and monkeys, a double advantage would be gained: First, the foreign complement may be identical or similar to that in man and consequently would be less likely to be absorbed by the tissues; and second, the complementophilous haptophores of the amboceptors may be so constructed that human complement would serve for activation. Theoretically, the conditions would be ideal if immune human serum were available for therapeutic purposes.

If one depends on the complement in the patient's body for activation of the amboceptors, there are two possible difficulties of importance: First, the native complement of the body is often decreased during infections and in some chronic diseases and may be too little for thorough activation; second, the amboceptors of the immune serum may demand for their activation a complement or complements which the body does not contain.

Deviation of Complement

Deviation of complement has been referred to as a phenomenon seen in test-tube experiments. In this condition an excess of amboceptors in some way decreases the power of the serum. It is supposed that a certain amount of the complement is absorbed by amboceptors which are unable to unite with the bacteria, and the effect is like that of too little complement. In the desire to administer a sufficient amount of antibodies, so much may be introduced that deviation of the complement occurs in the body. Results obtanied by Löffler and Able and by Pfieffer, in which excessive doses of immune serum were less protective than moderate doses, suggest the occurrence of this phenomenon in the body.

Inaccessibility of Microbes.

In certain diseases the microbes are so situated that a serum as ordinarily administered may not be able to reach them. Pfeiffer thinks that there is little hope for the serum treatment of cholera because of the exclusive location of the living organisms in the intestinal tract. In typhoid also the intestines are a reservoir of typhoid bacilli, although the living organisms reach the circulation in abundance.

By way of summary the following conditions would appear to account for the low curative value of bactericidal serums: 1. Bactericidal serums are not antitoxic. 2. They may liberate an excessive amount of endotoxin by dissolving the bacteria. 3. The lability of complement. 4. The power of the tissues to absorb the complements of a foreign serum. 5. The lack of a sufficient amount of suitable complement in the human body. 6. The difficulty of obtaining amboceptors for which human complements are suited. 7. The possibility of deviation of complement by an excess of amboceptors. 8. Inaccessibility of the micro-organisms in certain infections (cholera, typhoid).

Other "Antibacterial" Serums.

As pointed out elsewhere, another group of organisms the members of which contain endotoxins are able to cause the formation neither of antitoxins nor of bactericidal serums: streptococcus, staphylococcus, pneumococcus, etc. Many investigators, nevertheless, are positive in their claims that the antisera for these organisms have a protective and even a curative value. The properties on which their value depends have not been satisfactorily ascertained. Although certain antistreptococcus serums are said to be antitoxic, it is contended by others that they act by simulating phagocytosis. Work now in progress may show that immunization with these organisms causes an increase in the opsonins. Their curative value is very low in experimental work and they fail totally if injected a few hours subsequent to the introduction of the organisms. Clinically, we are familiar with them as failures.

It is particularly in relation to the streptococcus that the so-called polyvalent serums have been prepared. Cultures of streptococcus obtained from numerous sources are used in the immunization with the expectation that the serum will be effective against various strains of streptococci. The principle may be an important one in the preparation of other antibacterial and bacterial serums.

Vaccination or Protective Inoculation.

Vaccination, or protective inoculation, being a process of active immunization, establishes an immunity of long duration, for in this instance the cells of the body continue to form antibodies over a long period. This is in contrast to the immunity of passive immunization.

In some instances the nature of the virus used is unknown, as in smallpox and hydrophobia; in all probability, however, it consists of micro-organisms rather than of toxins alone. In the case of typhoid, cholera, plague, and other diseases of known etiology pure cultures, living or killed, are inoculated. Protection does not follow immediately on the inoculation. We are sufficiently familiar with this fact in relation to smallpox, in which several days are required for the formation of a protective amount of the antibodies. There is reason to believe that the interval between the inoculation and the appearance of antibodies is characterized by a decreased resistance on the part of the individual, so that during this brief period he is unusually susceptible to infection. It is not yet clear that this condition is one of serious practical importance. In case the incubation period of the vaccination is shorter than that of the disease (smallpox, hydrophobia) vaccination usually is successful even if practiced within a limited time after exposure to infection.

Nature of Antibodies.

In certain instances the nature of the antibodies is known. In typhoid, cholera, plague and dysentery, for example, they consist of bactericidal amboceptors; agglutinins and precipitins are formed incidentally. The amboceptors naturally depend on the complement of the body for their activation. If the disease is one of unknown etiology the nature of the antibodies is not easily determined. We should keep in mind the possibility that vaccination may cause an increase of the opsonins and that the potential phagocytosis may thereby become greater.

Theoretically it would be possible to immunize man against diphtheria and tetanus by inoculating with small amounts of the corresponding toxins. Such a procedure for obvious reasons would be unnecessary and unjustifiable.

Mixed Active and Passive Immunization.

It is not unlikely that mixed active and passive immunization will be of great service in some infections. A successful campaign against rinderpest has been carried on in the Philippines by this method. The blood of infected cattle contains the virus, which as yet has not been cultivated artificially. The serum of cattle which have recovered from the disease, or which have been immunized cautiously with infected blood, contains the specific antibodies. Both the immune serum and virulent blood are used for the inoculations. The same principle has been found effective in experimental work with cholera, typhoid and plague. Immediate immunity is established by the serum, which would eliminate the danger period mentioned above, and before the serum disappears entirely active immunity develops.

APPENDIX.

"EXAMINATION OF SERUMS MADE BY LICENSED MANUFACTURERS.[1]

"The act of Congress approved July 1, 1902, entitled "An act to regulate the sale of viruses, serums, toxins, and analogous products in the District of Columbia, to regulate interstate commerce in said articles, and for other purposes," and the regulations framed thereunder, approved Feb. 21, 1903, imposed upon the director of the Hygienic Laboratory the duty of examining vaccines and antitoxins for purity and potency.

"Accordingly purchases are made for the Hygienic Laboratory from time to time on the open market by officers of the Public Health and Marine-Hospital Service stationed in various parts of the country. The antitoxin is always bought from reliable druggists, who keep the product under proper conditions of light, temperature, etc. Several grades of diphtheria antitoxin made by each licensed manufacturer are bought and sent to the Hygienic Laboratory by mail for the purposes of these tests.

"The serums are tested not only for potency, but also to determine their freedom from contamination by foreign bacteria, and finally to insure the absence of chemical poisons, especially tetanus toxin. Note is made of the physical appearance of the serum, and tests are made to determine whether an excessive amount of preservative has been added.

"A careful memorandum is made of the facts given by the manufacturer, as stated on the label, as to the number of units contained in the package, and the date beyond which the contents can not be expected beyond a reasonable doubt to yield a specific result. Note is also made of the manufacturer's compliance with the law requiring that the product be plainly marked with the name of the article, and the name, address, and license number of the manufacturer.

"Delinquencies that occasionally come to light in these examinations are at once reported to the Surgeon General, U. S. Public Health and Marine-Hospital Service, who takes the necessary steps requiring the immediate withdrawal of the particular lot of serum from the market and institutes measures to prevent a repetition of similar errors."

"SERUM ANTIDIPHTHERICUM IN THE PHARMACOPEIA.

"The next edition of the United States Pharmacopeia, being the eighth decennial revision, 1900, which is to appear shortly, will contain an antitoxic serum for the first time. The serum will be known officially as antidiphtheric serum or *Serum antidiphthericum* and the unit will be recognized as that approved or established by the United States Public Health and Marine-Hospital Service.

"The official text, which has been kindly furnished by Professor Remington in advance, will be as follows:

"SERUM ANTIDIPHTHERICUM.

ANTIDIPHTHERIC SERUM. DIPHTHERIA ANTITOXIN.

"A fluid separated from the coagulated blood of a horse *Equus caballus,* Linné, immunized through the inoculation of a diphtheric toxin. It should be kept in sealed glass containers, in a dark place, at temperatures between 4.5° and 15° C. (40° and 59° F.).

> "A yellowish or yellowish-brown, transparent or slightly turbid liquid, odorless or having a slight odor, due to the presence of the antiseptic used as a preservative.
>
> "Specific gravity: 1,025 to 1,040 at 25° C. (77° F.).
>
> "Antidiphtheric serum gradually loses its power, the loss in one year varying between 10 per cent. and 30 per cent. Each container should be furnished with a label or statement, giving the strength of the antidiphtheric serum, expressed in antitoxic units, the name and percentage by volume of the antiseptic used for the preservation of the liquid (if such be used), the date when the antidiphtheric serum was last tested, and the date beyond which it will not have the strength indicated on the label or statement.
>
> "The standard of strength, expressed in units of antitoxic power, should be that approved or established by the United States Public Health and Marine-Hospital Service.
>
> "Average dose: 3,000 units.
>
> "Immunizing dose for well persons: 500 units."

Clinical Reports

PRIMARY TUBERCULOUS MENINGITIS.

WITH REPORT OF A CASE.

HENRY W. CHENEY, M.D.
CHICAGO.

The case which I here report illustrates the extreme difficulty of making a diagnosis in the early stages of tuberculous meningitis. As stated editorially in a recent issue of THE JOURNAL, it is perfectly possible to have a primary tuberculous meningitis, synovitis, or osteomyelitis, with no other tuberculous lesion existing in any other part of the body, and it is in support of this statement that I report the following case. This child was sick two weeks before the symptoms were clear enough to make a positive diagnosis.

PATIENT.—Alexander A., aged 3½ years, had never been sick previously and was the picture of health. One paternal grandmother and one paternal uncle had died of tuberculosis. His parents were both living and healthy and being intelligent people had taken particular care in regard to his diet, exercise in the open air, etc., so that he was apparently as normal and healthy as a child could be.

Present Illness.—I was summoned first on Feb. 3, 1904, when the parents complained of the child vomiting. One week previously he had indulged in some popcorn which caused a temporary gastroenteritis which cleared up in a day or two.

Examination.—When I saw him he was vomiting two or three times in twenty-four hours, mostly after taking food. Temperature and pulse were normal and further examination was negative, so I suggested a modification of his diet by giving him the more easily digested foods and drink and prescribed a laxative first, and then an intestinal antiseptic mixture.

Course of the Disease.—On the third day, there was little or no improvement, but the treatment was continued.

On the fourth day, vomiting was more pronounced and occurred each time after feeding. The mother also noticed a slight lassitude or disinclination to move about, manifesting itself more by his wanting to be held or by sitting by himself quietly or lying down more than usual. His reflexes and pupils were normal and as yet no other symptoms had appeared.

On the fifth day, ordinary food was withdrawn and he was fed a predigested beef preparation and the intestinal antiseptic and corrective continued. His temperature ranged from normal to 99 degrees and his pulse was about 80 with no irregularity.

By the seventh day, the vomiting was persistent. At times it occurred spontaneously and it did not always follow the taking of food. All nourishment by mouth was now stopped and feeding by the rectum begun. Regular enemas of peptonized milk were given and most of these were retained. Temperature now reached 99.5 at times, pulse still not affected. Pupils were normal and reflexes negative. Inactivity was slightly more pronounced and there was a greater inclination to sleep.

Dr. Frank Walls saw the patient with me on the seventh day and after a careful examination we were unable to make a positive diagnosis. The possibility of a meningitis was discussed but the symptoms were not definite enough at this time to confirm its presence. Dr. Walls advised an expectant and symptomatic line of treatment.

During the second week, the conditions continued the same, with the persistent vomiting and the inactivity of the child as the prominent features. There was no change in the reflexes or pupils. No headaches nor tenderness of the head or neck. The abdomen was not noticeably flat; pulse was regular; temperature was below 100. Examination of heart and lungs was negative. There were no twitchings of the muscles or convulsive movements. Toward the end of the second week, however, the drowsiness and lassitude had become marked.

On the thirteenth day, the case being still puzzling and doubtful, a well known neurologist of this city was called in consultation and, after examining thoroughly, stated that in his opinion there was no meningitis present. The vomiting he explained on the theory that it was cyclic in character and the weakness and lassitude of the child as being due to a lack of proper nourishment.

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[1] The material for this appendix is taken verbatim from Rosenau, "The Immunity Unit for Standardizing Diphtheria Antitoxin," Bulletin No. 21 of the Hygienic Laboratory of the Public Health and Marine-Hospital Service of the United States. M. J. Rosenau is Director of the Hygienic Laboratory.

On the fourteenth day, drowsiness had increased almost to coma. Pulse and heart action were slightly irregular; pupils at times were unequal. Occasionally there was a slight contraction of the cheek muscles hardly to be distinguished from a smile. The knee jerk was slightly increased.

By this time I was fairly well satisfied that the case was tuberculous meningitis and, on the fifteenth day, well-marked twitching of the face and hands was present and the first general convulsion occurred, so that the diagnosis was now quite clear. Dr. F. S. Churchill examined the case with me on that day and several times afterward and his notes have been of assistance in the subsequent history. Our examination at that time showed the child comatose—neck slightly rigid and tender; throat, lungs and abdomen negative; pupils irregular and unequal. Occasional nystagmus and slight strabismus were present. Heart action and pulse were irregular, varying from 72 to 82; temperature 99.5; respiration 12—somewhat irregular and yawning. The patellar reflex was increased; Kernig and Babinski sign absent. A blood count showed: Hemoglobin 50 per cent.; red cells 5,760,000, white cells 8,000.

From that time on, the history was typical; there was increasing weakness and coma and high temperature, and death occurred on the twenty-fourth day. A lumbar puncture was made four times altogether, on the sixteenth, eighteenth, twenty-first and twenty-fourth days and from one-half ounce to two ounces of fluid withdrawn each time. There seemed to be a slight temporary improvement after the first and third punctures and no change after the others. The first specimen of fluid was clear, the others increasingly cloudy. The first was sedimented and the precipitate was small in amount; no tubercle bacilli or other bacteria were found in this specimen. A few cells were present which were largely lymphocytes—thus agreeing with some recent French writers who claim that the cells present in the spinal fluid from this disease are largely lymphocytes as distinguished from other forms of meningitis in which polynuclear leucocytes predominate. A guinea-pig was inoculated with some of the first fluid and died in seven weeks from tuberculosis of the abdominal glands, liver and spleen. Tubercle bacilli were found, however, in the sediment of the fluid obtained from the third puncture.

Autopsy.—A careful autopsy was performed the day after death by Dr. H. G. Wells of the University of Chicago. On opening the abdomen, there were no peritoneal adhesions. The retroperitoneal glands were normal; the mesenteric glands were slightly enlarged, no caseation. Liver, spleen, kidneys and pancreas were all normal. In the gastrointestinal tract, there was no evidence of ulcers in the ileum. Heart and lungs were normal and there were no adhesions nor areas of consolidation on either side. The superficial lymph glands were not enlarged.

Brain and Meninges: There was an unusually large quantity of fluid at the base of the brain. From the optic commissures posteriorly along the medulla, there was a gelatinous yellowish-white material. This was very dense about the infundibulum, forming a solid mass 5 m.m. on each side. There was a dense mass around each anterior cerebral artery which seemed to invade the brain tissue. There was a slight granular exudate over the base of the frontal and temporo-sphenoidal lobes and cerebellum, but none over the upper portion of the brain. The fissures at the base and also the fissures of Sylvius were adherent. Along the arteries, the membranes were beaded and studded with minute white spots. A similar exudate was found between the cerebrum and the cerebellum and about all the fissures at the base. Both lateral ventricles contained a slightly turbid fluid. The membrane of the ventricles was finely granular but not thickened. The choroid plexus appeared normal. The bones at the base of the skull were perfectly normal. The fontanelles were closed and the rest of the skull was normal.

Histologically, the meninges showed all the changes of a typical tuberculous meningitis. The perivascular tuberculosis was very extensive and consisted chiefly of caseous areas. Tubercle bacilli were found in stained sections. All other organs seemed perfectly normal except for some congestion and edema in the posterior parts of the lungs. The mesenteric and peribronchial glands were normal.

In view, therefore, of the fact that the child had no symptoms of tuberculosis elsewhere in the body and that the other organs failed to show tuberculosis either macroscopically or microscopically, I believe we are justified in designating this a case of primary tuberculous meningitis.

369 East Sixty-third street.

GUN-SHOT WOUND OF THE STOMACH.*

R. L. MURDY, M.D.
ABERDEEN, S. D.

Although gun-shot wounds of the stomach are among the most serious which a physician or surgeon is called on to treat, modern surgery has done a great deal to place the treatment of these injuries of the stomach and of other abdominal viscera on a more scientific basis and to give more hope for recovery in a large class of these cases.

The tendency to pneumonia after the treatment of these injuries has been suggested by W. J. Mayo and is markedly demonstrated in this case.

History of Shooting.—On Feb. 3, 1905, at 5:30 p. m., a family fracas occurred in which the senior member of a family was used for a target by his stepdaughter, who used a 22-caliber revolver, shooting twice from in front. One shot took effect over the costal cartilages of the ribs about two inches to the left of the median line, taking a course downward, backward and to the right, and passing through all the structures of the abdomen. After striking the cartilage the bullet was deflected a little downward, thence through the stomach and into the muscles of the loin. The shooting occurred immediately after supper and the injured man had a full stomach at the time.

Examination.—When I arrived on the scene the patient was standing in the middle of the floor, bent forward, with his hands over his stomach and complaining of severe pain through the stomach and abdomen. He was nauseated and vomited quite freely, throwing up stomach contents and blood. His face was pinched looking and he had an extreme pallor. A slight examination was made of the wound and its course through the abdomen, and a diagnosis of perforation of the stomach was made, from the characteristic pain, the direction of the bullet and the vomiting of blood, the pallor and the pinched condition of the patient.

Treatment.—The patient was immediately sent to the hospital and after a hasty preparatory treatment he was anesthetized and a laparotomy was performed, the median incision being used.

The incision extended from an inch below the ensiform cartilage to the umbilicus. As soon as the peritoneum was opened, a free flow of blood and stomach contents were encountered. These were mopped out hastily and the injuries to the viscera sought for. An examination revealed a puncture of the anterior wall of the stomach midway between the cardiac and pyloric ends of the stomach and about the same distance between the greater and lesser curvatures.

As the bullet passed through the anterior wall of the stomach, it had severed one of the large arteries, and this had caused copious internal hemorrhage.

The wound in the anterior wall of the stomach was small, but very ragged. It was immediately closed by a double row of sutures, then the stomach was further raised up and retracted to one side and examined for other injuries.

The examination revealed a lacerated and punctured wound of the posterior wall large enough to admit of the tip of the index finger, which was discharging stomach contents freely. This wound was treated in the same manner as the anterior wound, after which the other viscera were inspected. No further injury being manifest, the abdomen was subjected to a thorough cleansing with sterile gauze wrung out of sterile salt solution and a free washing with hot sterile salt solution. Lamp-wick drainage was introduced under the bile ducts and under the posterior surface of the stomach and the wound was closed by through and through sutures and the usual sterile dressing applied.

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* Read at a meeting of the Aberdeen District Medical Society, 1905.

The operation lasted about one hour and fifteen minutes, being prolonged by such operative difficulties as tympany of the intestines and poor light.

In the search for injury to other viscera we were unable to trace the bullet after it left the stomach. After the operation was concluded, the patient was put to bed in fairly good condition.

Subsequent History.—Nothing eventful occurred until the second day, when the pulse became rapid, though the temperature was practically normal; a marked jaundice was manifest. At the end of the first twenty-four hours after the operation the first dressing was made. At this time the entire dressing was saturated with secretions carried out by our lamp-wick drainage. At the end of the second twenty-four hours, the second dressing was made and the lamp-wick drainage removed. This dressing was also fairly well saturated with secretions. On the third day the jaundice was more marked. On the fourth day, the jaundice began to fade and had about all disappeared at the end of the first week. During the first week, the patient was fed by nutritive enemata and the saline solution was continued through the first ten days, nothing being administered by the mouth, except occasional teaspoonsful of iced water. During the first ten days, the temperature ranged from 97 to 101 F. This temperature was largely accounted for by the infection of the abdominal stitches. These stitches were placed under more than ordinary tension, as the patient was very much bloated at the time of the operation and the abdominal cavity was further distended to its full capacity by saline solution.

After the tenth day the patient was fed with milk and lime water and predigested foods, plenty of liquids being administered at regular intervals. This form of nutrition was continued up to the fourteenth day, after which time he was allowed a liberal diet of light foods, both solid and liquid, and all the fluids that he desired.

During the second week the patient developed a marked dyspnea which was manifest by shortness of breath, a moderate cough and a pain in the right side on breathing and coughing. There was no spitting of blood or rusty sputum, but examination revealed consolidation of the lower lobe of the right lung and of the posterior surface of the middle lobe extending as high as the superior border of the scapula.

These conditions remained practically unchanged up to the twenty-first day, except that there was an increased temperature and pulse rate until the night of the twenty-first day, when he had a profuse sweat and the temperature fell to normal. Pain left and breathing became quite natural, this evidently being the crisis, which came suddenly and was very marked.

After this the lung conditions remained very obstinate as far as clearing and restitution of function were concerned, it being a very marked and stubborn case of delayed resolution. By the fifth week, however, the lungs were fairly clear and the patient steadily improving. This progress continued up to the forty-eighth day, at which time he was able to take short walks and to take care of himself very nicely, and was discharged from the hospital on this day.

Remarks.—I believe that drainage was of inestimable service in this case. The patient had comparatively thin abdominal wall and a moderately fat omentum, and this, together with the median incision, very much lessened the operative difficulties of seeing and treating the double rent in the stomach and gave ample room for inspecting other viscera and cleaning the wound.

The treatment of gun-shot wounds of the stomach as practiced by military surgeons in the field, which is shown to be uniformly unsuccessful, has led many physicians to believe that laparotomy is not indicated in these injuries, and probably some lives have been sacrificed by not treating them promptly by operation. This, however, should not be undertaken unless surroundings are favorable for clean and aseptic work.

I am indebted to Drs. Frank Miller and C. E. McCauley for valuable assistance and suggestions in the treatment and after-care of the patient. I am also indebted to the Sisters of St. Luke's Hospital for special care and preparation of the patient.

CHRONIC PURPURA HEMORRHAGICA.

H. H. LOVELAND, M.D.
SYRACUSE, N. Y.

The editorial statement in The Journal, June 10, that chronic forms of purpura hemorrhagica are so seldom mentioned in medical literature that we are apt to regard them as being exceedingly rare, leads me to report a case that came under my observation during the years 1896 to 1903, inclusive.

Patient.—C. D., male, was born May or June, 1895, date not certain. His parents were of German birth, and both of them exceptionally large people, each weighing over 200 pounds, but well proportioned and in vigorous health. This child was one of twelve, five of whom died in infancy, or in very early years, the others being in excellent health.

History.—I first saw him with the physician who had attended him from birth, in December, 1895, and the beginning of the following year he came under my care and remained so till October, 1903. He was a large, well-formed, fat baby of 6 or 7 months. He was somewhat anemic, but there was no discoloration, sponginess or hemorrhage of the gums, no swelling of the thighs, or any of the classical signs of scorbutus. The mother was nursing him. She had plenty of milk, of a good quality. He was nursed until 18 months of age, the last six or seven months potatoes and other foods also being used. As the child developed he ate bread and butter, meat, potatoes and other vegetables, fruit, etc., the same as the rest of the family, and as they kept a cow he had plenty of good cow's milk. I do not know when the purpura began, but it must have been in the very early months, for I was told that he had received nearly every known treatment, but to no purpose thus far. From that time I had frequent opportunity to witness the appearance, course and disappearance of the purpuric areas. From the first date given until some four years later the child was scarcely ever without the spots somewhere on his body, varying in size from that of a dime to that of a small orange. One of the latter I saw on his forehead once, and, if I had not known the cause I should have thought that he had received a severe blow with consequent ecchymosis, the disappearance of the spot being the same as that from a blow—gradually turning from red to dark blue, and then greenish yellow, etc., until it faded away entirely. After his fifth year the spots appeared at gradually lengthening intervals, and the rheumatic phase of the case became more prominent. The child had severe inflammatory reaction about the joints, especially the knee and shoulder. Salicylates were administered faithfully, but apparently with no effect. He had previously had Fowler's solution, syrup of hypophosphites comp., and other tonics.

The knee became partly flexed, and in spite of all that I could do to get him to use the leg and knee or his parents to manipulate them during the intervals, he continued to go about with a partly flexed knee and used a crutch or stick to assist him in walking. His blood was thin, lacking in color, not easily coagulated, and he bled excessively from the slightest wound, though I was generally able to check hemorrhage by the use of Monsel's solution and tightly applied bandage.

The case may be considered by some as one of scurvy, but from the fact that there was no emaciation, no spongy or bleeding gums, no swelling or deformity of the thigh, leg or other bones (at least for the first five years), and also because there was no apparent reason for such trouble in the food, either as regards quality or quantity, I have not been able so to classify it. My removal from the locality has taken from my observation what was to me a very interesting case.

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THE ETIOLOGY OF SYPHILIS.

If the causal agent concerned in the production of syphilis is still unknown, it is not from any lack of attempts to discover it. At a recent meeting of one of the German medical societies, Lassar of Berlin stated his belief that in the past twenty-five years twenty-five parasites of syphilis had been discovered. Those who remember Aesop's fable of "The Boy Who Cried Wolf" will readily appreciate the attitude of the general run of the medical profession toward anyone who comes forward with a new cause of syphilis. One is reminded, too, of the remark of the sage therapeutist, that the chance that we possessed a specific remedy for a given disease was in inverse ratio to the number of drugs which were claimed to be efficacious in its treatment. There is little doubt, however, reasoning from analogy, that syphilis is an infectious disease due to a parasite, the only point at issue being the exact nature of its cause. On account of the recent discoveries of protozoon-like bodies in certain of the exanthemata, several observers have hazarded a guess that syphilis is a protozoan infection, though one can not help suspecting that it might just as well be due to some ultramicroscopic parasite.

The latest champions to enter the lists of the parasitology of syphilis are Schaudinn and Hoffmann,[1] who claim to have discovered in various syphilitic lesions a spirochete, which, on account of its refractivity to stains, they call *Spirochœte pallida*. In their early communications, they described the organism on the surface and in the depths of primary lesions, later it was described in the juices from the indolent glands which characterize the disease. The organism was observed both in a living state and in smears stained by a modification of Giemsa's blood stain. In a living state, it appears as a very fine, slightly refractive, actively motile spirillum. It is thread-like, twisted in spirals like a corkscrew, and pointed at the ends. Schaudinn considers that it is not a true bacterium, but belongs in a class with the spirochete of relapsing fever. In stained preparations, its most prominent characteristic is its great refractivity to stains, and this probably explains why it has not been observed by previous investigators. Since the first descriptions of Schaudinn and Hoffmann several observers[2] have substantiated and extended their claims. The organism has been found by Buschke and Fischer in the internal organs of a child dead of congenital syphilis, and has been observed by Metchnikoff in the lesions of experimental syphilis in the ape. It has been noted also by several syphilologists in blood obtained by puncture of the skin lesions of the secondary stage of the disease.

One is impressed in the accounts of the various investigations with the conservative attitude assumed by the various observers. The presence of the organism is stated as an objective fact, but no one seems to have been in haste to state outright that it is the cause of syphilis. In the present state of our knowledge, this is an eminently proper attitude. It is, of course, not an impossibility that the *Spirochœte pallida* is merely a saprophyte. Many of us can remember Lustgarten's experience with his syphilis bacillus, which was shown later to be a normal inhabitant of the smegma. The fact that the organism is present in the internal organs does not necessarily militate against this view; nor must the fact be forgotten that it is particularly in the diseases which most closely resemble syphilis, the exanthemata, that secondary invaders are apt to follow close on the heels of a primary causal agent. The rôle played by the streptococcus in scarlet fever and smallpox strongly suggests that a similar process may occur in connection with syphilis. We have long been acquainted with the fact that spirochetes are normal inhabitants of the body. They have been described frequently both in the mouth and on the genitalia. While one can not but be impressed with the discoveries which have followed the work of Schaudinn and Hoffmann, all the above factors must be taken into account, and we must leaven our judgment of their achievements with a proper amount of that healthy scepticism without which permanent progress is impossible.

ENTEROGENOUS CYANOSIS.

The number of diseases marked by a severe grade of cyanosis is not large, and most of them come under two or three headings. If congenital heart disease be absent, then it is usually a case of emphysema, or the patient has been indulging indiscriminately in one of the coal tar products which, in the form of headache powders, can be purchased at any of the numerous soda water drug stores. Of late years, Osler and others have called attention to still another form of cyanosis, that which is accompanied by splenomegaly and polycythemia. In 1902, Stokvis of Amsterdam called attention to what he called autotoxic enterogenous cyanosis, and van den Bergh has recently reported two new cases of this rare condition.[1]

The symptom complex as described originally by Stokvis had as its three main features, enteritis, marked cyanosis, and a clubbed condition of the ends of the fingers. Examination of the blood, by illuminating the hands, showed the presence of methemoglobin, and as any of the various drugs which could produce this condition were excluded, Stokvis concluded that the cyanosis was associated with the intestinal disturbance and was probably due to toxic products formed in the intestine. The three cases of Talma had similar symptoms, and this observer was able to show that methemoglobin could be demonstrated not only in the patient's circulation, but also in blood withdrawn from it. The cases reported by van den Bergh add to our knowledge of the subject, inasmuch as they show that the cyanosis is not always due to methemoglobinemia, and also that there are cases which do not show all the three cardinal symptoms. In one of van den Bergh's cases with the classical symptoms of the disease, the spectrum analysis of the blood showed that the cause of the cyanosis was not a methemoglobinemia, but a sulphomethemoglobinemia. It was shown that in this particular case, a child with a rectovesical fistula and partial obstruction of the bowels, the feces in solution, if added to blood, would produce the spectrum band of sulphomethemoglobin, and it was further shown that the feces contained large quantities of sulphuretted hydrogen. An interesting fact in connection with this case was the disappearance of the cyanosis when the intestinal obstruction was removed and the bowels thoroughly cleaned out, and its subsequent reappearance on a recrudescence of the former condition.

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[1] Deut. med. Woch., Vol. xxxi, No. 18. The Journal A. M. A., June 3, 1905, p. 1790. Staining technic on page 1870.

[2] Ibid., July 1, 1905, p. 77.

[1] Deutsches Arch. f. klin. Med., 1905, Vol. lxxxiii, 86. The Journal A. M. A., page 79.

The pathogenesis of the condition still seems obscure. In cases where it is shown that gases like sulphuretted hydrogen are formed in the intestine this does not suffice to explain the disease, for the presence of large amounts of this gas is quite frequent in a number of pathologic conditions, and even under normal circumstances. The old Bergeon treatment of pulmonary tuberculosis by intestinal injections of sulphuretted hydrogen will be remembered by many, and it will be recalled that no cyanosis of the patient resulted from this treatment. In most of the reported cases of this condition, a true methemoglobinemia has been present, and so far attempts to explain the cause and origin of this have been unsuccessful. Knowing, as we do, that certain chemical substances have the power to produce cyanosis, it seems logical to suppose that similar substances can occasionally be formed in the body, but whether as the result of bacterial activity or not is hard to determine. Probably some abnormal condition of the intestinal wall must be present, as well as the mere presence of the poison, and probably certain kinds of food will favor the process. That this is the case was quite conclusively shown in one of van den Bergh's patients in whom the cyanosis disappeared as soon as he was put on a milk diet.

The subject is a fascinating one, but will be very hard to investigate if, as is supposed, it originates in the intestine. When we consider the vast number of chemical substances which are formed in the alimentary tube, and when we realize how inexact in some respects is our knowledge even of normal digestive processes, it seems almost like looking for a needle in a haystack to search for specific poisons in such a collection. For the present we must satisfy ourselves if we are able to recognize this symptom-complex clinically.

THE THERAPEUTIC VALUE OF SILENCE.

The effect of noise on those who are ill has long been recognized. Of course, from "noise" we exclude those rhythmical sounds that we call music, which are decidedly restful to most persons when tired. It is the unmusical sound that wearies. Tan bark is spread over city pavements in front of the dwellings of the critically ill, and patients are placed in quiet rooms. Hospitals are not always erected in quiet neighborhoods as they should be, but usually there is apparent some effort to protect the inmates from noises. When life hangs by a thread, absolute silence in and about the sick room often is enjoined. In fact, physicians have generally and consistently endeavored to diminish noises in the environment of the ill. Occasionally a voice is raised in protest against the multitudinous and seemingly unnecessary and steadily increasing noises that assail the ears of city dwellers. At such times the proposition has been laid down that excessive constant noises are inimical to the best state of health, and there is some demand for the protection of those who are not ill from the detrimental clatter of urban life.

While physicians have approved and practiced all these measures when applicable, and so far as circumstances permitted, it is to the neurologists who systematized the "rest cure" that we owe some appreciation of the real therapeutic value of silence in the treatment of neurasthenia and "brain-fag." Withal, however, little thought seems to have been given to the possibility of the existence of an "eartire," analogous in its reflex manifestations to "eyestrain." This conclusion, however, seems to follow naturally from the observations and methods of those experienced in the treatment of neurasthenia. Uniformly "quiet" is insisted on for these cases, and the worn out broker, as well as the weary "society" leader, is restored quickly to health by the quiet of an ocean voyage or of a remote mountain, forest, or lake resort. The elements of rest, change and air have in such cases heretofore been uppermost in our minds, but there is much ground for the belief that the relative absence of noise has been a potent factor in producing the good results of such therapeutic measures. Of course, the evil results of eyestrain, being due to abnormalities of function in a much more complex organ, are perhaps more readily demonstrable than are those due to "eartire." It has been a long and arduous task, however, to convince the world of the manifold ills resulting from unrelieved eyestrain, while physicians, as we have shown, have ever recognized some of the benefits of quiet. For certain troublesome neurasthenic cases, particularly in women, this discussion suggests a practical therapeutic measure. We see women utterly exhausted by a day of noisy shopping or nearly as noisy social duty, and they seek relief in many expedients. For them prescribe each day until relieved one or two or three hours spent in the quietest available spot, and insist on even the absence of conversation and of the sounds of their own voices, for there are many who wear out their nerves talking and listening to others talk.

Many trying "nervous" cases are amenable to the "silence cure," just as so many others have been entirely relieved by the correction of errors of refraction. Many educated persons and some famous ones long since found out for themselves, in empirical fashion, the physical pleasure and nerve restfulness of periods of quiet, and physicians can not do better than learn therefrom something of the therapeutic value of periods of silence.

THE PHYSICIAN AND THE FOURTH.

The Fourth of July has come and gone, half a hundred persons are dead and thousands injured and the count is not completed.[1] As usual, the accidents are in two classes, the immediate and the remote—in other words, the direct injuries from the explosives and the tetanus that develops later. The former are usually large wounds, the latter small and comparatively insignificant. On the other hand, the deaths caused by the former variety are few compared with those caused by the complications of tetanus in the latter. The physician's responsibility is also very different in the two classes. In the first—aside from the prompt and thorough care that the nearest medical man is expected to give in any accidental injury regardless of its relation to the Fourth—the physician's responsibility is that of any citizen in securing restrictive laws and their enforcement, and that of any other parent, adult or citizen in aiding the reckless youth to minimize carelessness and danger. As to the remote result, tetanus, however, the physician is in a particularly important position. Although tetanus may follow the most thorough treatment of a wound, the fact remains, as shown by the results of a compilation of many cases, that thorough, deep opening and cleansing of the insidious wounds prevent many cases of tetanus and that prophylactic injections of serum are of great value. Here is the physician's opportunity. Last year the following out of this principle saved many lives. Let no physician fail in his duty this year.

CONCERNING SNAPSHOT DIAGNOSIS.

One of the temptations which come to the clinician of even moderate experience is the tendency to make diagnoses on sight, the so-called "snapshot" diagnoses. The innate desire to play to the gallery which is present to some extent in most of us, as well as the wish to appear preternaturally brilliant in the eyes of the public or the student, is the cause of this temptation. Even the most conservative among us gets into the habit of making subconscious snapshots when he almost unconsciously sizes up a patient at his first visit. While such diagnoses are occasionally justified, they are, in the long run, severely to be condemned. Certain diseases are, in their well-marked forms, so characteristic that even the tyro can hardly fail to recognize them. A number might be mentioned, acromegaly, exophthalmic goiter, myxedema, and osteitis deformans among the rest. But it is in the fruste forms of just these diseases that diagnosis may be most difficult. The habit is one which, in the long run, leads to careless observation, and while it leads to a few brilliant diagnoses, causes many regrettable mistakes. The humorous side of the matter is well illustrated by a story recounted by Byrom Bramwell in a recent address.[1] A physician who was very great on physiognomonic diagnosis in going through the wards one day directed the attention of his students to the teeth of a patient, saying that they were splendid examples of gouty teeth. The patient, seeing that the professor was so much interested, took the teeth out and handed them to him, asking if he would like to examine them more closely. A word to the wise is sufficient.

Medical News

COLORADO.

Personal.—Dr. Peter O. Hanford, Colorado Springs, has been reappointed health commissioner of that city.——Dr. Thomas G. Horn, Colorado Springs, who has been seriously ill, is said to be out of danger.

Fined for Not Reporting Birth.—Dr. Wilson W. Bredin, Denver, was the first physician to be arrested for failing to turn in a monthly record of births to the health department. He was fined $10 and costs.

Physicians Cleared.—Dr. Roderick J. McDonald, Leadville, physician of Lake County, who was charged by the city authorities with having failed to notify them of the existence of smallpox cases and was fined $50 and costs, appealed the case, and after corroborative testimony from other physicians, was declared not guilty.——In the case of Dr. William H. Kendrick, Colorado Springs, charged with having performed a criminal operation, the judge instructed the jury to bring in a verdict of not guilty.

Hospitals and Sanatoria.—A permit has been issued to build an addition to Glockner Sanatorium, Colorado Springs, to cost $10,000.——Emergency Hospital, Denver, has secured new quarters in a 27-room house, pending the completion of its new building.——St. Mary's Hospital, Pueblo, dedicated its new building with impressive ceremonies June 17. The institution now has 152 rooms.——The Elks of Denver, at a social, raised $3,011 for the transfer of their hospital ward from St. Joseph's to St. Anthony's Hospital, and for other charitable work.——The $15,000 needed to build a woman's pavilion to be added to the National Jewish Hospital, Denver, is assured.

ILLINOIS.

Wholesale Poisoning at East St. Louis.—About 300 attendants at an East St. Louis Masonic picnic June 24 were attacked by symptoms of acute poisoning several hours later, it is supposed from salads which were kept in galvanized iron cans. Dr. Edward W. Cannady was one of those attacked. While many were seriously ill, no fatalities occurred.

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[1] At 2 a. m. July 5. the Chicago *Tribune*, which has carried on such a praiseworthy agitation on the subject, had collected reports of 42 persons dead and 2.431 injured. At the same hour in 1904 there had been gathered 25 deaths and 1,977 injuries; 1903. 48 deaths, 2,936 injuries; 1902, 21 deaths, 1,978 injuries. We call attention to the fact that these figures are only of the direct results. Unless 1905 is a remarkable exception, most of the deaths are yet to occur. The Journal will collect data as usual and will report after the returns from all tetanus cases are in.

[1] Clinical Studies, vol. iii, part 2.

Embalming and Disposal of Dead Bodies.—Under the act providing for the regulation of the embalming and disposal of dead bodies, for a system of examination, registration and licensing of embalmers, and imposing penalties for the violation of any of its provisions, which was approved May 13, and came in force July 1, no transportation company operating in the state after September 1 will accept a body dead of any contagious or infectious disease, unless it has been prepared by an embalmer holding a license issued by the State Board of Health. After Jan. 1, 1906, any person who shall embalm or hold himself as an embalmer without first having obtained a license from the State Board of Health shall be guilty of a misdemeanor.

Chicago.

Personal.—Dr. N. Senn started for Greenland July 3. He sails on the *Eric,* Lieut. Peary's supply ship, from Sydney, Cape Breton, July 12.——Dr. Vida A. Latham has been elected a fellow of the Linnean Society, London.

Dominant Death Causes.—The five principal death causes for the first half of 1905 were, in order, pneumonia, 2,352; consumption, 1,700; violence, 1,070; heart diseases, 1,071, and Bright's disease, 1,029. In June the order ran as follows: Consumption, 251; pneumonia, 224; violence, 187; Bright's disease, 171, and heart disease, 165. For the week ended July 1 the principal causes were: Consumption, 57; violence, 50; Bright's disease, 44; pneumonia, 41, and heart disease, 30.

Death Causes Compared.—As compared with June, 1904, among the important causes of death, Bright's disease, bronchitis, heart disease, measles, pneumonia, smallpox, typhoid fever and whooping cough show material increases. As compared with May, 1905, there were 99 fewer deaths under 5, and 47 fewer over 60 years of age. There were 12 fewer deaths from acute intestinal diseases; 8 fewer from Bright's disease; 14 from bronchitis; 11 from consumption; 12 from cancer; 14 from convulsions; 56 from heart disease; 5 from influenza; 6 from measles; 61 from nervous diseases; 47 from pneumonia; 20 fewer suicides and 37 fewer deaths from whooping cough.

Low Mortality for the Half Year.—At the close of the first six months of the year the Department of Health predicts that 1905 will establish a new record for the healthfulness of the city. This prediction is based on the fact that the average annual death rate of the first six months of each year during the ten years, 1895-1904 inclusive, was 15.51 per 1,000 of population. For the last six months of each year the average was 14.43, or 7.48 per cent. lower. The rate of the first six months of 1905 is 14.09—the total deaths being 13,918. If the second six months should be 7.48 per cent. lower than the first six months its rate will be 13.04, the total deaths for the year about 26,800, and the annual rate for 1905 will be 13.56—the lowest ever recorded for Chicago.

Much Smallpox.—Dr. Heman Spalding, chief medical inspector of the Department of Health, reports that during the first six months of 1905, 500 smallpox patients were removed to the Isolation Hospital. He remarks:

> The disease has been widely scattered over the city, and but for the fact that the population is better vaccinated than ever before in its history a serious and destructive epidemic would have been on us.
>
> The type of the disease this year has been severe, but the death rate has been kept down to about 10 per cent. This speaks well for the resident physician and the nurses.
>
> Of the 500 cases, 128 showed evidence of having been vaccinated somehow and sometime in early life. None had ever been revaccinated, however, and the shortest period between the early vaccination and the attack of smallpox was nineteen years; most of them were above 30 years of age.
>
> One hundred and nine were unvaccinated children under the school age of 6 years. Twenty-seven were children unvaccinated, but in school either with false certificates or in attendance in parochial schools without any certificates of vaccination. This makes a total of 138 unvaccinated children under the age of 10 years afflicted out of a total of 500 cases—nearly 28 per cent. of all cases.

KANSAS.

New Hospital for Newton.—The Bethel Hospital and Deaconess Society has been incorporated under the auspices of the Mennonites at Newton. The building to be erected will be ready for occupancy in the autumn.

University Medical School.—More than $6,000 of the $12,500 required for the temporary building of the Medical Department of the University of Kansas, at Rosadale, has already been subscribed, and the building will be ready for occupancy in September.

Contagious and Infectious Diseases for May.—During May there were reported to the Kansas State Board of Health 448 cases of smallpox, with 2 deaths; 98 cases of scarlet fever, with 6 deaths; 32 cases of measles; 30 case of diphtheria, with 5 deaths; 42 cases of typhoid fever, with 6 deaths, and 88 cases of, and 44 deaths from, consumption.

Personal.—Dr. Lot D. Mabie, Kansas City, has been appointed county physician of Wyandotte County, vice Dr. J. Frank Hassig, Kansas City, resigned.——Dr. Robert R. Teller, Arkansas City, who was recently operated on for cancer of the throat in Winfield, has been discharged from the hospital, recovered.——Dr. Lewis H. Munn, Topeka, has been appointed medical referee for the Kansas agency, and chief medical examiner for the Mutual Life Insurance Company of New York, at Topeka.——Dr. H. L. Cornell and family, who went to Burmah in October, 1903, have returned to Burlingame.——Dr. Orson F. Lewis, Garden City, has been reappointed a member of the State Board of Medical Registration and Examination.

Conference of Health Officers.—The second annual conference of the county and municipal health officers of the state was held in Topeka, June 27, Dr. T. D. Nichol, Topeka, health officer of Shawnee County, delivered the address of welcome; the secretary of the State Board of Health made his report on legislation; Dr. Sarah E. Greenfield, bacteriologist of the State Board of Health, described the new state laboratory, and in the absence of Dr. Samuel E. Reynolds, Clay Center, there was an informal discussion of disinfection. The afternoon session was devoted to papers on modern sanitation, to the legal status, relation to the community and relation to the profession to the health officer, and to quarantine versus vaccination in the control of smallpox.

MARYLAND.

Baltimore.

Personal.—Dr. James C. Morton is critically ill at the Maryland General Hospital with Bright's disease.——Dr. William H. Smith, late resident physician-in-chief at the Hebrew Hospital, has gone abroad to study.——Dr. Edward H. Richardson has been appointed surgical house officer at the Johns Hopkins Hospital.——Dr. Richard H. Follis, on the surgical staff of the Johns Hopkins Hospital Dispensary, who was married last week to one of the chief nurses of that institution, sailed with his bride to Europe July 1.——Dr. Lewellys F. Barker has leased for several years a house on Franklin Street, in the immediate vicinity of that formerly occupied by his predecessor, Dr. Osler. He will take possession in September.

MASSACHUSETTS.

Seventy-two, Not Twelve, Graduate.—In THE JOURNAL for July 1 it was erroneously announced that a class of 12 was graduated from Tufts Medical College. The number graduated was 72.

Harvard Commencement.—Harvard University Medical School graduated a class of 82, June 28. Nearly all of the class are college graduates and several have the degree of A.M. or Ph.D. The degree "cum laude" was conferred on 25.

Modified Milk for Sick Poor Babies.—With nearly $2,500 already in hand, the Boston Milk Fund has begun its work of furnishing Walker Gordon modified milk to sick poor babies. The parents pay something, but not nearly the full expense.

Children to Have Outing.—About 20,000 children are to be given an outing down Boston harbor this season through the co-operation of the city of Boston officials and the interest of the Randidge fund, which was not used last year, and, therefore, amounts to $4,000.

Park for Tuberculous.—Boston is to have a park for the use of tuberculous patients in an open space on Parker Hill. Here the Association for the Relief and Control of Tuberculosis will receive and care for patients. Steamer chairs to rest in, tents for shelter in case of rain, two luncheons and a hearty midday meal, nurses, constant attendance and a daily visit from a physician will do much to make this day sanitarium a success. The work began July 5.

Deaths and Disease.—For the ten weeks ended July 1 there were reported to the Boston Board of Health 2,028 deaths, an increase of 61 over the reports of the same period last year. There were recorded 259 cases of diphtheria, with 22 deaths; 250 of scarlet fever, with 15 deaths; 96 of typhoid fever, with 10 deaths; 248 of measles, with 3 deaths; 419 cases of tuberculosis, and 260 deaths; smallpox, 1 death; pneumonia, 226 deaths; whooping cough, 5 deaths; heart disease, 228 deaths; bronchitis, 48 deaths, and marasmus, 25 deaths. Of the total deaths 292 were in infants under 1 year old, 449 in children under 5, and 481 in individuals over 60 years of age.

MICHIGAN.

New Hospital for Port Huron.—The new Port Huron Hospital was thrown open to the public June 8. The building complete cost about $32,000 and has accommodations for 50 patients.

Illicit Practitioner Goes to Jail.—"Dr." Edward J. Bell, Detroit, was convicted of violating a medical law, and was sentenced to jail for ninety days in default of payment of a fine of $45 and $5 costs imposed.

Appropriation for Consumptive Hospital.—The bill appropriating $30,000 for a state sanatorium for consumptives, $15,000 for building and equipment, and $15,000 for maintenance for two years, has passed the legislature.

Convicted of Larceny.—"Dr." Irving E. Sanders, Detroit, who was charged with larceny by conversion of money belonging to Mrs. Rosa Jones of Tecumseh, was found guilty, and sentenced to imprisonment in the state penitentiary for not less than two and a half nor more than five years.

Fraud Order Issued.—The Postal Department has issued a fraud order against the Northwestern Medical Association, the Northwestern, the Lincoln Clinic and Prof. George W. Howard, in which four names a mail-order medical business has been carried on at Lincoln and Grand River avenues, Detroit.

Fee Bill of the County Society.—The Oakland County Medical Society has adopted a schedule of prices for coroner's cases as follows: Thirty dollars for each physician taking part in an autopsy; $25 a day for each physician giving expert testimony, while the minimum charge for viewing a dead body and testifying before a coroner's jury will be $10.

Medical Bill Sustained.—Dr. James D. Kennedy, Detroit, who filed a bill in the Circuit Court to restrain the State Board of Medical Registration from revoking his license to practice, has lost his case, as the circuit judge, in an opinion handed down June 2, holds constitutional the act of 1903 regulating the practice of medicine in the state, dismisses the bill filed by Dr. Kennedy, and dissolves the temporary injunction.

Smallpox.—By order of the Board of Health, all schools and churches in Grand Rapids were closed June 12, on account of smallpox, which has taken on the nature of a dangerous epidemic. There were at that time 75 cases in the city. Eight special physicians are conducting a vaccination campaign, but they report that a great many absolutely refuse to be vaccinated.

State Board of Medical Registration.—The governor has reappointed Drs. Joseph H. Cowell, Saginaw; William Bell, Belding; Henry B. Landon, Bay City; Beverly D. Harison, Sault Ste. Marie, and Albertus Nyland, Grand Rapids, members of the State Board of Medical Registration and Examination.——Dr. John L. Campbell, Birmingham has been appointed a member of the board, vice Dr. Henry B. Landon, Bay City, and will assume the duties of the office October 1.

May Mortality.—The total number of deaths reported for the month of May was 2,700, a decrease of 322 from April. The death rate was equivalent to an annual rate of 12.5 per 1,000, as compared with 14.4 for the preceding month. There were 456 deaths of infants under 1 year, 140 deaths of children aged 1 to 4 years, and 837 deaths of elderly persons aged 65 years and over. Important causes of death were as follows: Tuberculosis, 232; typhoid fever, 22; diphtheria, 28; scarlet fever, 5; measles, 20; whooping cough, 16; pneumonia, 171; meningitis, 43; cancer, 147; accidents and violence, 181, and smallpox, 18.

Personal.—Dr. Albert E. Bulson has been reappointed medical director of the Jackson City Hospital.——Dr. C. J. Sorsen, Laurium, sailed for Liverpool on the *Umbria*, June 10.——Dr. Margaret R. Otis has succeeded Dr. Millie E. Wilson as house physician of Emergency Hospital, Detroit.——Dr. C. Henri Leonard had conferred on him the honorary degree of LL.D. by Tufts College, June 21.——Dr. Theodore A. McGraw has been re-elected president, and Dr. Henry O. Walker, secretary of the faculty of the Detroit College of Medicine.——Dr. Alexander McMillan, Lansing, is now in a hospital at Chatham, Ont., as the result of injuries received by being struck by a train on the Canadian Pacific Railroad.—Drs. Howard B. Baker and Edmund Quandt have been appointed city physicians, and Dr. B. W. Pasternacki has been reappointed a city physician of Detroit.—Dr. James C. Rutledge, Detroit, has been appointed county physician of Wayne County.—Dr. Elliott K. Herdman, Ypsilanti, has been reappointed school physician.——Dr. Ernst A. Wittwer, Auburn, expects to study for a year in Europe.——Dr. Norman J. Pike has been made president of the Saginaw Board of Health.

MINNESOTA.

Commencement.—The Medical Department of Hamline University, Minneapolis, graduated a class of 14 at its twenty-second annual commencement, June 5. Rev. Fayette L. Thompson delivered the commencement address, and President George H. Bridgman conferred the degrees.

Charges Not Sustained.—In the suit for malpractice against Dr. Charles G. Shipman, Ely, in which it was claimed that the plaintiff had not received proper treatment in and after the amputation of a leg, and that his sufferings were valued at $10,000, the jury, after forty-five minutes' deliberation, returned a verdict for the defense.

Personal.—Dr. George E. Benson, Minneapolis, has returned after six months in Germany and Austria.——Dr. and Mrs. Carl Klemer, Faribault, have sailed for Europe.——Dr. Charles G. Weston, Minneapolis, has been appointed a member of the Board of Charities and Corrections, vice Dr. Francis R. Woodard.——Dr. Oskar L. Bertelson has been named as city physician of Crookston.

Hospital Notes.—The new I. O. O. F. Hospital, Northfield, was dedicated with impressive ceremonies June 16.——Anoka, by resolution of its city council, has admitted the State Hospital into the corporate limits of the city.——A field hospital was in operation at Fort Snelling throughout the month of June.——George B. Wright will give Fergus Falls a hospital to cost $25,000, in memory of his father, who founded the city.

Suit Settled.—In the trouble between Dr. Sherman S. Hesselgrave, St. Paul, and Howard T. Hughes, wherein the physician sued for $105 claimed to be due for professional services, and the civilian claimed that his wife had been damaged to the extent of $500 by a hysterectomy, the case has been settled by payment to Dr. Hesselgrave of a portion of his fee, all claims for damages being released.

NEW YORK.

New York City.

Aliens Have Trachoma.—Twenty-five immigrants who arrived on the *Madonna* were sent from Ellis Island to the Long Island College Hospital suffering with trachoma.

More Milkmen Fined.—Heavier penalties than usual were inflicted by the Court of Special Sessions on a number of dealers found guilty of selling adulterated milk. One grocer who was convicted of the fourth offence was fined $250.

To Fight Mosquitoes.—The Board of Health and Dr. Doty, health officer of the port, have joined forces to wage war on the mosquitoes of Staten Island. They have asked the city for $17,000, which they think sufficient to do effective work and to furnish an object lesson and useful data for further operations.

Contagious Diseases.—There were reported to the Sanitary Bureau, for the week ended June 24, 769 cases of measles, with 25 deaths; 462 cases of tuberculosis, with 148 deaths; 207 cases of diphtheria, with 24 deaths; 104 cases of scarlet fever, with 9 deaths; 50 cases of typhoid fever, with 6 deaths; 42 cases of cerebrospinal meningitis, with 34 deaths, and 115 cases of varicella.

Personal.—Dr. August Hoch, McLean Hospital, Waverly, Mass., has been appointed to succeed Dr. Charles E. Atwood at the Bloomingdale Hospital for the Insane.——Dr. William S. Bainbridge has been appointed consulting gynecologist to St. Mary's Hospital, Jamaica, L. I.——Dr. and Mrs. Glentworth R. Butler, Brooklyn, sailed on the *Prinzessen Alice* June 29.——Dr. and Mrs. George A. Dixon sailed on the *Kronprinz Wilhelm* June 26.——Dr. William Rink, of the Cumberland Street Hospital, Brooklyn, while answering an ambulance call, collided with a car and sustained severe internal injuries.

Hospital Patient Branded; House Physician Dismissed.—Considerable sensation was created by the statements of Isaac Chaves, an indigent Hebrew, who claimed that he had been branded with the word "faker" at Bellevue Hospital. Investigation showed that he had been treated with the thermocautery for neuralgic pains at Gouverneur Hospital, which is under Bellevue administration. The physician who treated him, Dr. Dubois Hunt, said that another physician who was watching him remarked, "That's a faker you have," and Dr. Hunt unconsciously traced the word on the chest of his patient. Dr. Hunt was dismissed from the service of the hospital.

PENNSYLVANIA.

Free Beds Endowed.—P. F. Kernan has endowed three beds in St. Mary's Hospital in memory of Harriet Richards. The beds will be under the patronage of the Sisters of St. Francis.

Personal.—Dr. Edwin I. Becker, Germantown, was thrown from his carriage in a runaway accident, June 25, and painfully injured.——Dr. Robert C. Moon, vice consul for Liberia, W. A., left for Europe on the *Cedric* June 16.

Dr. Packard Ill.—Dr. Francis R. Packard, editor of the *Journal of the American Medical Sciences*, was thrice operated on in the Pennsylvania Hospital for an infection of his left forearm and hand which resulted from opening a postpharyngeal abscess. He has been extremely ill, but is reported to be progressing toward recovery.

Health Report.—The total number of deaths from all causes reported during the week aggregated 441, as compared with 551 for last week and 533 for the corresponding period of last year. The principal causes of death were typhoid fever, 14; diphtheria, 10; pulmonary tuberculosis, 52; cancer, 16; apoplexy, 22; heart disease, 34; acute pulmonary disease, 29; enteritis (under 2 years), 58; enteritis (2 years and over), 9; cirrhosis of liver, 5; appendicitis, 5, and Bright's disease, 34. There were 158 cases of contagious disease reported, with 25 deaths, as compared with 227 cases and 17 deaths for the preceding week, thus showing a decrease of 69 cases.

TEXAS.

Personal.—Dr. John O. McReynolds and family, Dallas, have returned from Europe.——Dr. R. P. Harben, Richardson, has been made president of the local board of education.

Mourns for Mellish.—The El Paso County Medical Society at its last meeting adopted resolutions regarding the death of Dr. Ernest J. Mellish, which set forth his merits as a man and a physician, and deplored his loss.

Graduating Exercises.—The graduating exercises of the Medical Department, University of Texas, Galveston, were held May 31. The address to the graduating class was delivered by Professor R. R. D. Cline of the School of Pharmacy. Diplomas were conferred by President W. L. Prather on a class of 22.

In the Hands of the Law.—Paul J. Marks, an oculist of Houston, was fined $25 and costs for failure to pay occupation tax at Rosenberg.——In the case of W. W. Stone, Jackson County, who was fined $50 for practicing without a license and who appealed from the decision, the court of criminal appeals held that the law is constitutional.——"Dr." H. M. W. Smith, Lufkin, was fined $50 and costs at Shreveport, La., for carrying a pistol.

State Board Appointed and Organized.—The governor has appointed the following persons to constitute a state board of medical examiners: Drs. J. T. Wilson, Sherman; Sam R. Burroughs, Buffalo; Thomas J. Bell, Tyler; Stephen T. Turner, El Paso; Don J. Jenkins, Daingerfield; Matthew M. Smith, Austin; Thomas T. Jackson, San Antonio; Robert T. Morris, Houston, and Arthur C. Scott, Temple. At an executive session of the board June 13, Dr. Burroughs was elected president; Dr. Bell, vice-president, and Dr. Jackson, secretary-treasurer.

WISCONSIN.

Commencement.—A class of 37 was graduated from Milwaukee Medical College May 15. Dr. Walter H. Nielson delivered the address on behalf of the department of medicine, Rev. R. F. Corcoran the doctorate address, and the president, Dr. William H. Earles, conferred the degrees.

Found Not Guilty.—In the case of F. C. Thom, Sparta, "professor" of a new method of healing, charged with practicing medicine without a license, the jury found the defendant not guilty.——Dr. Axel E. Hedback, Barron, was accorded the verdict in the $10,000 damage suit, for alleged malpractice, brought against him by one Findlay.

Hospital News.—Sinai Hospital, Milwaukee, has been given $5,000 by the eccentric philanthropist of Waverly, Iowa, Abraham Slimmer.——Miss Elizabeth Plankinton has given a hospital building to Milwaukee-Downer College.——Luther Hospital, Eau Claire, without capital stock, has been incorporated.——The citizens of Bloomer have subscribed $3,000 to a hospital building fund.

State Board Denied Power to Revoke Licenses.—The physicians of the state were unsuccessful in their fight to secure the passage of a bill giving the State Board of Medical Examiners the power to revoke the licenses of practitioners claimed to be guilty of unprofessional conduct. As it became apparent that the senate would not consent to confer this power on the state board, the physicians offered of their own accord a bill which gives the medical board practically only the power of a complaining witness and gives a physician against whom proceedings are brought for the annulment of his license the right of a trial by jury.

GENERAL.

Leper Hospital in Hawaii.—Surgeon-General Wyman, who made a trip to Hawaii for the purpose, has selected a site for a leper hospital on Molokai. The site is about a mile square, near Kalawao, the eastern town on the settlement.

Plague and Smallpox in the Philippines.—*Public Health Reports* states that a case of plague was discovered in Cavite during the week ending May 26. Two cases of smallpox were reported in Manila during the week ending May 20.

Plague on the Isthmus.—No other cases of bubonic plague seem to have developed following the fatal case which was reported at La Boca. The companions of the dead man were isolated and all precautions taken to prevent the disease obtaining a foothold.

Cholera in Manila.—The residents of Mariquina Valley are to be indemnified for losses sustained during the cholera epidemic in Manila. The losses sustained were caused by the sanitary engineer ordering the removal of certain houses along the Mariquina River.

American Climatological Association.—At the annual meeting of this association, held at Detroit June 20, the following officers were elected: President, Dr. E. L. Shurly, Detroit; vice-presidents, Drs. Blackader, Montreal, and Sewall, Denver; secretary and treasurer, Dr. Guy Hinsdale, Hot Springs, Va. The next meeting will be held at Atlantic City.

Yellow Fever in Panama.--According to the report of Acting Assistant Surgeon Mohr, in *Public Health Reports*, yellow fever is widely disseminated both in Panama and Colon, and that in spite of extensive fumigation there still remain undiscovered foci of infection. He states that from June 12 to June 16 there have been officially reported in Panama 13 new cases of yellow fever and 4 deaths; in Colon, 1 new case and 1 death. These bring the total number of cases on the Isthmus from June 1 to June 15 to 24, with 7 deaths.

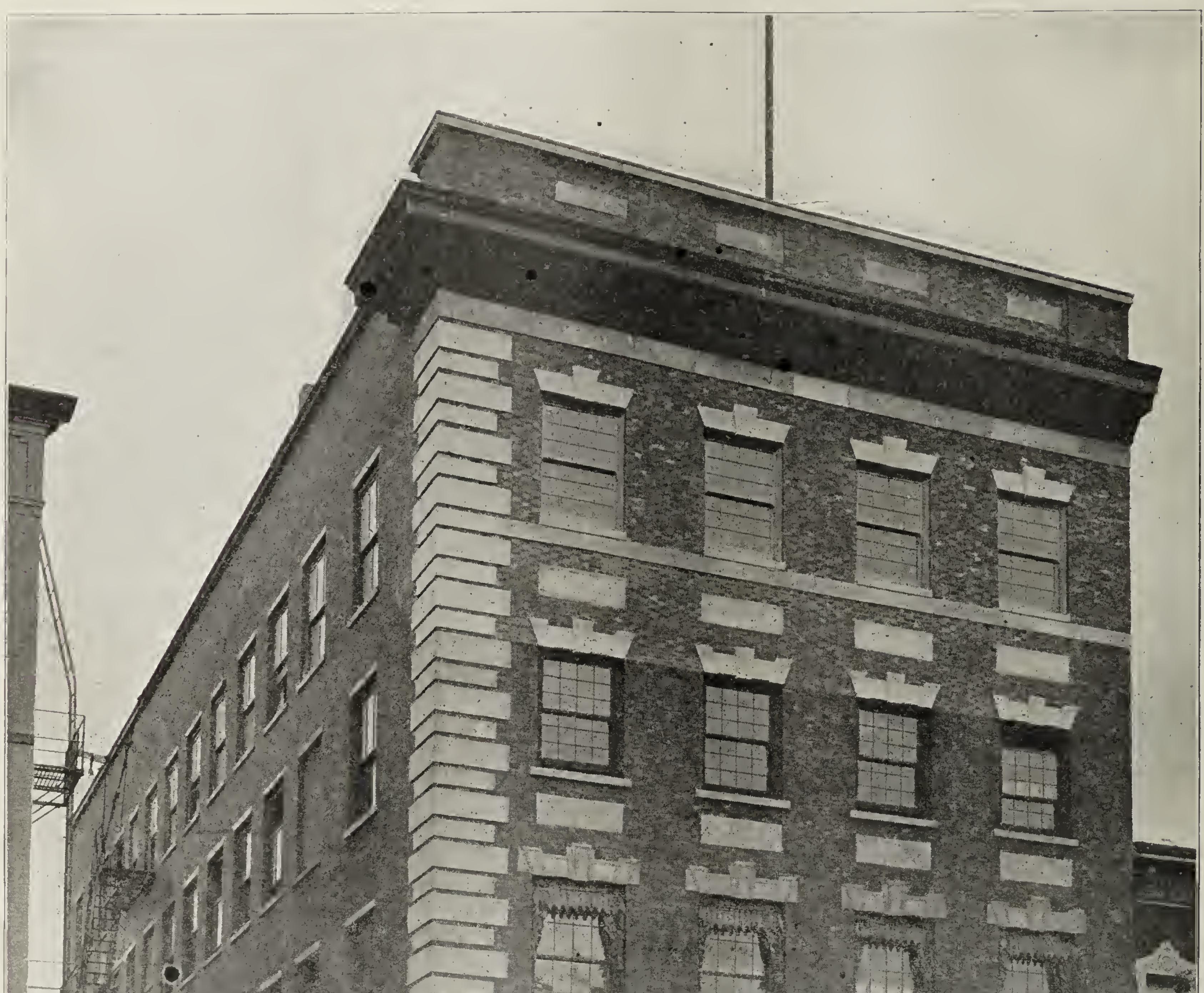
Mosquitoes on the Isthmus.—According to *Public Health Reports*, since the beginning of the rainy season, mosquitoes have been so abundant as to constitute a veritable plague. Even the north beach, which is generally free during the prevalence of the trade winds, is infested with swarms of them. The most prominent genus at present seen is the anopheles, although the stegomyia is also abundant. The hospital situated on the reef along the northern edge of the island, swarms with mosquitoes of all varieties, which are to be found in the nets in the screened wards. No sooner is a building opened after fumigation than it is again filled with mosquitoes. Considering the enormous area of standing water in and around the town, the problem of the extermination or even diminution in the number of mosquitoes presents almost insurmountable difficulties. Whatever has been done in the city of Colon in the way of mosquito extermination has thus far shown no results.

CANADA.

Personal.—Dr. W. D. Brydone-Jack, Vancouver, B. C., has returned home after a visit at the hospitals of New York, Montreal and Chicago.

Seek Sanitarium Site.—A number of medical men from Winnipeg recently inspected a site for a consumption sanitarium near Holland, Man. They went out on the invitation of Dr. Pennyfather of the latter place who is furthering the movement.

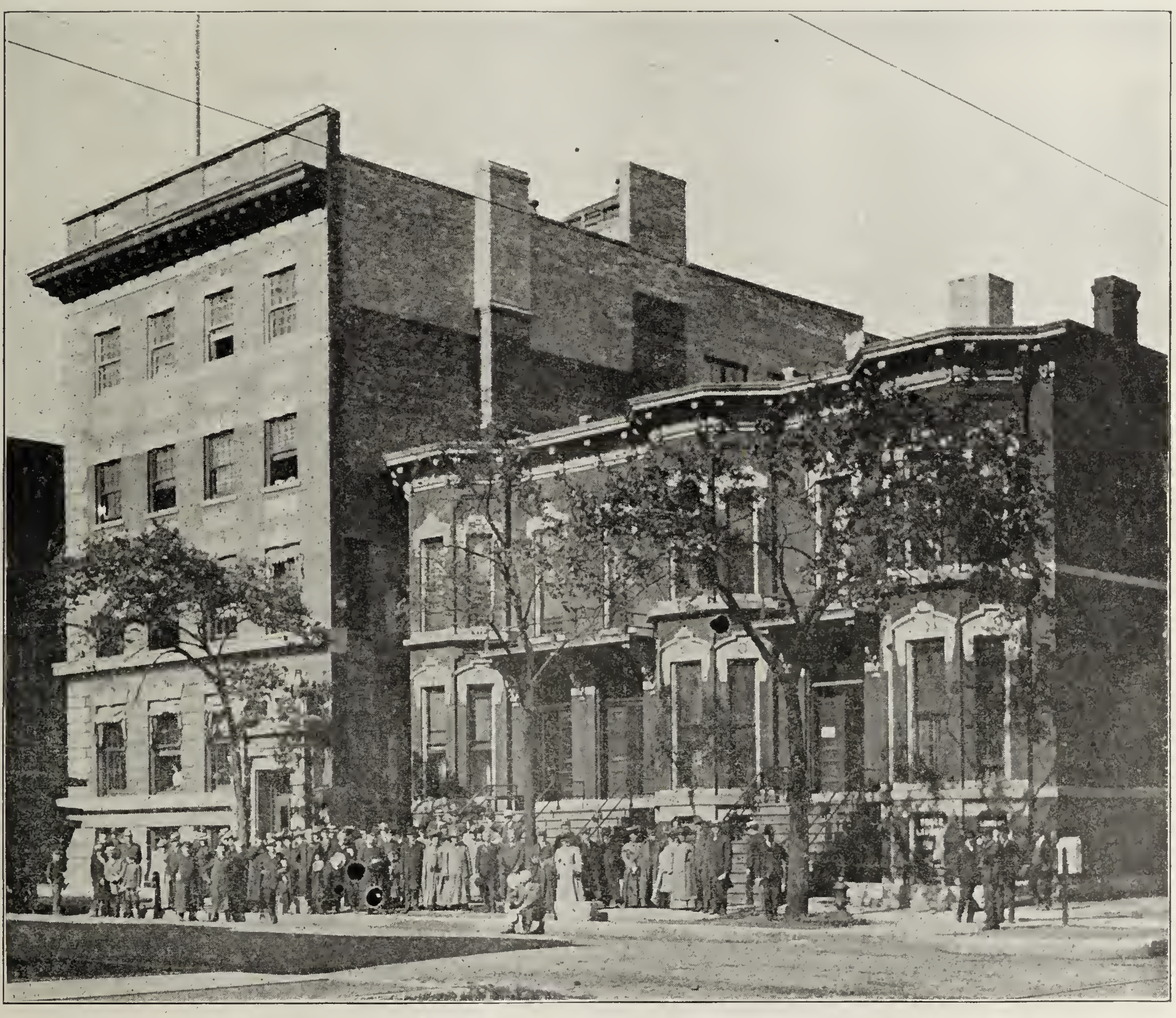
Hospital Merger Off.—The proposed merger of the Montreal General and Western Hospitals of Montreal, which is said to have originated at McGill University, is now said to be off. The board of management of the Western Hospital is opposed to any such amalgamation at the present.



AMERICAN MEDICAL ASSOCIATION BUILDING, CHICAGO.

Want Consumption Sanitarium.—A deputation from the five counties of Perth, Wellington, Waterloo, Brant and Oxford waited on the Ontario Government a few days ago asking that the $4,000 grant to each of these counties for the purpose of a consumption sanitarium be doubled, as the municipalities of these counties had decided to erect a sanitarium, the first instance where any municipality or group of municipalities had sought to undertake this work in the province of Ontario.

To Help Hospital.—The Board of Controllers of Toronto will recommend to the Toronto City Council that a grant of $200,000 be given to the Trustees of the Toronto General Hospital toward purchasing a building site. It is further stated in connection with this matter that as soon as the money is forthcoming from the city of Toronto that each of four gentlemen in Toronto will contribute $100,000, which, along with the $100,000 given by Mr. Cawthra Mulock and the $300,000 promised by the Ontario government, will enable the board of trustees to commence operations.



AMERICAN MEDICAL ASSOCIATION CHICAGO PROPERTY.

The above illustration shows the American Medical Association building and houses adjoining. The property is on the northeast corner of Dearborn Avenue and Indiana Street, extending 100 feet on the former and 120 feet on the latter. In front are members of the New York and Philadelphia special party, whose call en route to Portland was mentioned in THE JOURNAL last week.

Manitoba College Matters.—Many changes have been made in the medical faculty of the University of Manitoba at Winnipeg. Nine new professors have been appointed, and the college course has been extended to five years. The faculty as now constituted will number about thirty. Hereafter more attention will be paid to clinical work. The erection of the new medical building alongside the General Hospital, is being prosecuted vigorously, and if not completed in time for the beginning of the fall term, will be ready for occupation by the first of the year.——Alterations are proceeding at the Winnipeg General Hospital, especially in the administration portion of the old building, the entire front of which, when completed, will be taken up with offices.

FOREIGN.

Plague in Australia.—Seven cases of bubonic plague occurred at Ipswich, Queensland, during the week ending May 13. All these cases were directly traceable to one produce store, which was in a dirty and dilapidated condition.—*Public Health Reports.*

Beriberi in Nicaragua.—According to *Public Health Reports*, on June 10, a man was taken to Bluefields suffering from the dropsical form of beriberi. He had contracted the disease in the gold mines in the Piz-Piz district. He noticed alarming symptoms exactly a month previous to the date of his death, which occurred on June 10, the day of his arrival at Bluefields. Prior to this, beriberi had never occurred in Bluefields.

Plague in Siam.—According to Dr. H. C. Highet, chief medical officer of the sanitary department, Siam, Bangkok, the capital of the country has been visited for the first time by an outbreak of bubonic plague. In December, 1904, the health department received information that a number of suspicious deaths had occurred on the west side of the river. On investigation it was proved that they were due to plague. There was also a history of great mortality among the rats in the locality for a week or two previous to the outbreak. The cases were practically limited to a settlement of British Indians. It was not learned how the infection entered Bangkok. Of 29 patients 23 died, a death rate of 79 per cent., which Dr. Highet states agrees with epidemics in other places in the East.

Present Status of the Sanatorium Movement in Germany.—A letter from Berlin in the *Münch. Med. Wochft.* for June 20, states that Germany now has more than 9,000 beds in the various public and private sanatoria for persons with pulmonary tuberculosis. Some of the beds are unoccupied during the winter months, and the directors protest against this neglect of the opportunities offered. There are also 42 special antituberculosis dispensaries, and 40 more are already planned. The number of persons able to work longer than five years after completing their course at the sanatorium is constantly increasing. The lack of sanatorium accommodations for tuberculous persons belonging to the class above the wage-earners is seriously felt. The tuberculous wage-earner is taken care of by the official sickness insurance companies, but no provision has yet been made for impecunious members of other classes of society, unable to pay for a course in a private sanatorium. Another lack is the absence of asylums for the incurable tuberculous. The main idea followed in the Berlin antituberculosis dispensary is to provide better home accommodations for the tuberculous. Arrangements are made so that each one can have a room and bed to himself, the extra expense being met by private benevolence. The letter further states that in 67 cases of human tuberculosis examined by Weber, tubercle bacteria of the human type were found in 56, those of the bovine type in 9, and in 2 both types. The advantages of the tuberculosis museum for instructing the public in measures to prevent the disease and to avoid exaggerated fear of its transmission have recently been extolled by Kayserling, who advocates popular illustrated lectures on the subject as an aid in the crusade.

Last Illness of Mikulicz.—The Journal mentioned last February that von Eiselsberg of Vienna had operated on Mikulicz in January on account of an umbilical hernia, and that recovery had been uneventful. This incomplete report was from headquarters, but it now develops that it was intentionally given out to conceal the true state of the case. It seems that, just before Christmas, Mikulicz had noticed a lump in the region of the stomach, and von Eiselberg's laparotomy confirmed his assumption that the lump was the metastasis of an inoperable malignant tumor in the posterior wall of the stomach, invading the pancreas. After recovery from the laparotomy, he took up his work again with renewed energy and kept in harness till the very last. His death was mentioned last week. He was a pioneer in many branches of surgery and was much loved. His father was a lawyer, and wished to have him follow in his footsteps, but Mikulicz preferred medicine and music. He supported himself during his student life by teaching music, and nearly gave up the medical career at last for that of music. The list of his published works more than fills two large columns of small print in the last *Wien. med. Wochft.*, which contains a touching tribute from von Eiselsberg. He refers to Mikulicz's trip to this country two years ago as "a triumphal procession for German science; everywhere he met old pupils, and he was invited to operate in more than twenty different clinics." He was the first to introduce antisepsis into Austria, but later discarded it in favor of asepsis, remarking that absolute asepsis is like squaring the circle. It is theoretically impossible, but it can be done approximately by the mathematician, carrying the figures well into the decimals. Asepsis is theoretically impossible, but it can be approximated so closely by using plenty of decimals that the desired result can be practically attained. He added a number of decimals by his works on the relations of glycerin to the septic cocco-bacteria, the value of iodoform, injections of nucleinic acid to enhance the resisting power of the peritoneum, etc. Every theoretical progress realized he at once sought to apply to practical use in the clinic. The profession honors him particularly for his constant efforts to prevent the splitting up of surgery into small technical specialties. He regarded, taught and practiced it as a grand whole, and protested against mutilating it by ultra specialization. If he had any specialty himself, it was in the surgery of the stomach and pancreas, but even his trained perceptions were unable to detect the signs of malignant disease until too late for successful interference at the early age of 55. He leaves a wife and six children.

LONDON LETTER.

Glanders in London.

The dangers to man from glanders in horses and the liability of the disease to be unrecognized has been illustrated by the following case: A horsekeeper employed by an omnibus company, in whose stables cases of glanders had occurred from time to time, complained of pain in the left side and was feverish on May 1; he was supposed to be suffering from pleurisy. Two days later he was sweating profusely and complained of pain in various joints. On May 8, he was admitted to St. George's Hospital, delirious, with a high temperature and sweating profusely. He was first treated for rheumatic fever, but pustules soon developed on the face, wrists and left ankle, and the cervical glands became enlarged. The condition was then diagnosed as septicemia. Death occurred on May 15. On the day before death it was suspected that the case might be one of glanders, and cultures were taken, which later showed the bacillus mallei. A number of horses belonging to the omnibus company were clinically found to be suffering from glanders and were condemned. The test was applied to 11 other horses, of which 7 proved to be infected and were condemned to be destroyed. Prof. Hobday, one of the inspectors of the London County Council, who dealt with the outbreak of glanders, pointed out at the inquest which was held on the man the insidious character of the disease in the horse and its apparent latency in some cases. The jury recommended that "veterinary inspectors ought to have the power to compel the owners of horses to have the mallein test applied in suspected glanders." In the house of commons the government, in reply to a question, admitted the desirability of amending the glanders order in the direction of making the mallein test compulsory, but said that there were difficulties, both administrative and financial. The government is making inquiries with a view to deciding whether any action can be taken to control the importation of horses into the country. Twelve cases of glanders have been reported to the London County Council in the last five years, but it is doubtful whether this number represents the total. In one London hospital no fewer than seven cases have been diagnosed during the last two years and all were fatal.

Pharmacology

A CRITICISM WHICH IS A COMPLIMENT.

Criticism and opposition are signs of vitality. They are sometimes the sincerest flattery, especially when their source and motives are considered. We, therefore, take pleasure in calling attention to a criticism of the work of the Council on Pharmacy and Chemistry of a "chemical company" whose hearty indorsement was never expected and whose opposition is a compliment to the work undertaken by the Council. It is contained in a little pamphlet entitled "The Added Proof," published by the Od Chemical Company, New York, and is being widely circulated with the evident purpose of discrediting the Council among physicians, without whose support this "chemical company" could not exist. The contention seems to be that a proprietary medicine of secret composition is ethical. That is a matter about which the Od Chemical Company is entitled to hold its own opinion; and it ought to be willing to concede the same right to physicians.

The "criticism" is introduced with a biblical quotation: "——, where the evil spirit (sic) answered the seven sons of Sceva, and said 'Jesus I know, and Paul I know; but who are ye?'—and here is their patriotic answer, which they seem to think, settles the ethical status of their product: "In all seriousness, whence emanates all this matter? It comes not from liberty-loving Americans—the influence must come from abroad; from those raised and nurtured under monarchical or despotic institutions, accustomed to their every imagination, thought, word and act being gauged, guarded and governed by State Rule, and hence unable to live a free, self-moving-life, but rather longing for guardianship and restraint, and naturally wishing, under the pretense of Ethics, or what-not, to force a muzzle on every one else. Let us in America have none of it! 'Eternal vigilance is the price of liberty.'" [The latter sentiment we heartily indorse, although we do not see just where it applies in this case.]

We have received many letters and copies of the circular referred to from physicians, but this week can give space to the following only:

Dr. H. P. Mills, Sheridan, Mo., says:

> "We have often heard of Satan quoting scripture to prove his point; but this case is unique, in that it is one of admitted identity."

Dr. Hollingsworth of Brazil, Ind., sends in the following copy of a letter he wrote to the Od Chemical Company:

> "Your pamphlet, 'the Added Proof,' has just been received. I have been tempted to make your acquaintance on several occasions, but since reading the above pamphlet, am very glad to say that I did not bite. You might be surprised to know how many physicians will be likewise impressed. I am sorry to acknowledge that there is an unthinking class of so-called physicians who prescribe such preparations as you advertise, on the testimony of some deluded doctors and the positive assertion made by your advertisement writer. However, we take consolation in the fact that other lines of business have this same class with which to contend—even all manufacturing chemists (I judge by your literature) are not above reproach. Kindly drop my name from your advertising list and oblige."

Dr. John Dice McLaren, New York, says:

> "A circular named 'The Added Proof' is now being 'issued to physicians only.' One must consider the source of such a personal and professional affront. The 'Od Chemical Company' must have a private telephone, the number not being in the directories. In the Co-partnership and Corporation Directory 'Od Chemical Company' carries the legend that 'Further information "refused."' When the business world is thus treated, the professional world can not hope to be favored with enlightenment. 'Od Chemical Company, will not answer its own question, 'Who are ye' 'Let the galled jade wince.' We are in the right, so go ahead."

Had Dr. McLaren called at the office of Dr. J. J. Lawrence, we believe he might have obtained all the information he desired regarding the Od Chemical Company. While our correspondent is about it, we wish he would find out the exact relationship of the Dad Chemical Company to the Od Chemical Company; the Od Chemical Company to the Sultan Drug Company; the Sultan Drug Company to the Rio Chemical Company; the Rio Chemical Company to the Battle & Company; Battle & Company to the Peacock Chemical Company; the Peacock Chemical Company to the Dad Chemical Company, and all of them to that great representative monthly medical journal that was published for so many years in St. Louis and which now emanates from New York.

EXTRACTS FROM THE ADVERTISING LITERATURE.

A cursory glance through this pamphlet, "The Added Proof," "issued to physicians only," shows that there are back of its publication two purposes—one to ridicule the work of the American Medical Association in organizing the profession and its efforts through the work of the Council on Pharmacy and Chemistry, to get rid of the secret nostrum evil and the other to advertise sanmetto. Just what sanmetto is we do not know, but if we are to take the word of the Od Chemical Company it is "a scientific blending of true santal and saw palmetto in a pleasant, aromatic vehicle." We did not know that saw palmetto and santal were such valuable drugs—we do not find anything to indicate this in our text-books, but evidently these drugs have wonderful virtues if we are to judge by the claims made for them by the Od Chemical Company in their advertising literature.

Sanmetto is not only advertised as a positive cure in the diseases in which the drugs composing it used to be thought valuable, but also in la grippe and its sequelæ; but what physician with even a superficial knowledge of the physiologic and therapeutic action of drugs would prescribe either santal or saw palmetto in influence?

We are sure that the following testimonials from physicians—not from laymen, remember—will prove interesting reading. It should be understood that this is not "a patent medicine" and that the following is not an appeal to an ignorant public:

> "To whom it may concern: I have used Sanmetto * * * * also in prolapsus of bladder in women, where congestion of the ovaries and enlargement of the uterus was the cause, with very gratifying results. J. C. Maxwell, M.D.., Paw Paw, Mich."
>
> "Have used Sanmetto in my practice for a number of years. * * * * Would recommend its use in senile bronchial troubles. Orville Curtis, M.D., Buchanan, Mich."
>
> "I used Sanmetto in the case of a man 50 years of age who had suffered from la grippe, leaving him very nervous and weak, with deposits in his urine. Very great depression and almost entire impotence. One eight-ounce bottle of Sanmetto with one-sixtieth (1-60) grain of strychnia almost completely cured him. * * * * Elbert L. Fish, M.D., West Valley, N. Y."
>
> "I have found Sanmetto useful in several cases of neurasthenia from overwork in intellectual lines without being associated with sexual irritations or excesses. In those case where it seemed to do the most good there was depression of energy consequent upon exhaustion of the vital forces * * * *
> M. W. Van Denburg, M.D., Mount Vernon, N. Y."

The makers also state in their advertising literature:

> "In uterine atrophy, dependent on ovarian blight (What is ovarian blight?) its action is unexcelled. In gynecological practice it is much used to promote the growth of the mammæ."

Physicians who are so emphatic in their denunciations of the advertisements of patent medicines in the lay press are respectfully invited to compare those advertisements with the foregoing, which is only a sample of the "literature" sent to physicians by the Od Chemical Company.

Publishing Medical Journals for Private Profit or for the Profession.

American Medicine comments, July 1, as follows: "There is a splendid, and perhaps unexpected, result of the plan of the American Medical Association as to nonsecrecy in the drugs used by or advertised to the profession. It has forced into the open, or will inevitably do so, the concealed journalistic supporters of the nostrum traffic. By doing this, it will as certainly expose the so-called medical journals which do not care a fig for the medical profession they have so long deceived and exploited, and which have been published solely for the financial benefit of the owners and their compliant editors. One can never cease hammering that in the professional use and control, indeed in the professional ownership of its medical literature, lies a vast deal of the progress of medical ethics, art, and science. The action of the American Medical Association cuts sharp and clear with these pseudos, and says: "On this side the sheep, on that the goats." One of our contemporaries has come out frankly and says: "We are heart and soul with the goats, and for profits in the advertising business." Another gibes at the attempts of the "reformers," "the cackle of some young and eager reformers," criticises, charges with many innuendos that some of the American Medical Association council members are in the pay of manufacturing companies, and otherwise shows plainly its sympathies, "letting 'I dare not' wait on 'I would.'" Come now, gentlemen—journalists, editors, publishers, subscribers and contributors—no befogging will avail. Choose your party! Physicians must know where you stand, and writers of medical articles must know where to send them for publication."

Nostrums in New Zealand.—"In accordance with the terms of the public health act of 1900, the governor in council has proclaimed that all patent medicines on sale here must bear, legibly printed in English on the wrapper, a statement of their contents and the exact proportions in which these are compounded. When any of the medicines contain any of the poisons included in the sale of poisons act schedule the words 'This contains poison' must be clearly printed on the label. A penalty of $25 is attached to the offense of affixing to these medicines any but the genuine formula, and it is evidently the intention of the public health department to see that the new regulations are literally and strictly carried into effect."—From report of Consul-General Dillingham, Auckland, New Zealand.

Correspondence

Catholic Teaching as to Operations for Ectopic Pregnancy.

Columbus, Ohio, June 14, 1905.

To the Editor:—In The Journal, June 10, page 1868, appears a letter from W. P. Whelan, professor of medical jurisprudence, Creighton Medical College, on the subject of the doctrine of the Catholic Church as to Cesarean section for placenta prævia. In this he brings up, but does not make to my mind entirely clear, the teaching of the church as to operations for ectopic pregnancy. Professor Whelan—as I understand it—is himself a Catholic, the author of a book on this subject, and assumes to speak *ex cathedra*. His book, which I have, mentions this same subject, but in that also his language is not entirely clear.

It must, of course, be conceded that in any case of unruptured ectopic pregnancy, as it presents itself to the surgeon, it is possible that the tube may so rupture as to permit the fetus to live and develop to full term, so that it may be extracted after the period of viability, and thus both mother and child perhaps be saved. Even after rupture it is as a rule impossible to state that the mother in any particular case is necessarily doomed unless there is surgical intervention, and that the child may not possibly go on to the age of viability. That the surgeon will witness a vast number of fatal issues while waiting for a possible successful case is, of course, well known, but the possibility of a successful issue is conceded.

The questions, therefore, that I would like to have answered categorically are these:

1. Is the surgeon permitted by the Catholic Church to operate on a case of unruptured tubal pregnancy?

2. Is he permitted to operate after rupture until he is positively sure that the fetus is dead? And can he ever be thus positively sure?

3. If the Catholic surgeon is not permitted thus to operate, is not permissible for sisters in charge of hospitals to allow non-Catholic surgeons to operate in these cases?

I am especially interested in the matter because of my reading of Professor Whelan's book, and also because the subject has been a source of discussion between myself and a fellow-surgeon who is a Catholic. J. F. Baldwin.

Omaha, June 17, 1905.

To the Editor:—Before answering the queries propounded by J. F. Baldwin, M.D., I would like to inform him that there seems to be a case of mistaken identity in the introduction of his paper. He credits me with the authorship of Coppen's "Medical Jurisprudence," written by my esteemed predecessor in that chair at Creighton Medical College. The book referred to above contains in its last edition later decisions of the court decisions given on the fifth of March, 1902. In the light of these decisions, whatever haze there may have been heretofore with regard to ectopic operations has been dispelled.

This very decision is in fact an answer to the first query; before the period of viability he is not allowed; when the fetus is viable he may operate in a case of necessity, with the proviso that he looks after the life of the fetus as well as that of the mother.

With regard to the second query, he is not allowed to operate either before or after rupture unless the fetus is viable (see answer to first query). If he is positive that the fetus is dead he may remove it. Whether he can ever be thus positively sure or not is a question that pertains strictly to the physician's or surgeon's science alone, and therefore does not come within the province of medical jurisprudence.

In answer to the last question I think Dr. Baldwin will agree with me when I say that it is impossible for the sisters to take cognizance of every operation; on the supposition, however, that they do know of such operations, they are not allowed to tolerate them, because in their position, they would be morally responsible, and therefore culpable, since they would be co-operating in the crime.

The question of such operations, however, is not a specifically Catholic one. The Catholic Church does indeed condemn any action or operation which has for its object the destruction of the infant for the safety of the mother, and bases her position on the command, "Thou shalt not kill," a command that asserts God's inviolable dominion over life and death, a command that is as much applicable to the child *in utero* as to the child just born. And she is not alone in her view, but is supported to-day by the common judgment which ascribes to the physician no greater right over life than it does to any one else. W. P. Whelan.

Association News

The First Person Operated on for Gallstones.

An interesting feature at the Portland session will be the exhibition of probably the first patient operated on for gallstones, Mrs. Z. Burnsworth, McCordsville, Ind., who was operated on June 15, 1867, by Dr. John S. Bobbs. A reprint from the *Indiana Medical Journal*, July, which is to be distributed in the Scientific Exhibit at Portland, contains a history of this first operation and sketches of Dr. Bobbs, and is illustrated by portraits of Dr. Bobbs and the patient. There is also a photograph of the Medical College of Indiana, one of the institutions with which Dr. Bobbs was connected. Through the efforts of this college the patient is to be exhibited at Portland. The reprint bears the following dedication:

> "This reprint is dedicated to the American Medical Association in session at Portland, Oregon, June 11-14, 1905, in memory of Dr. John S. Bobbs of Indianapolis, the founder of the surgery of the gall bladder, by the Medical College of Indiana, the *Indiana Medical Journal*, and the Indianapolis and State Medical Societies which Dr. Bobbs assisted in organizing, and on behalf of the thousands of patients whose lives have been made happy and prolonged by this beneficent operation."

Dr. A. W. Brayton, editor of the *Indiana Medical Journal*, and Drs. W. N. Wishard and L. H. Dunning, who will present the case before the Section on Surgery and Anatomy, deserve much credit for this interesting historical presentation.

The General Reception.

The general reception to the members of the American Medical Association, to be given by the Portland City and County Medical Society and the state and district societies, will be held at The Oaks, and not at the Lewis and Clark Fair grounds. It will be a social function, at which the ladies as well as the gentlemen will be present, and it promises to be something to be long remembered by all who attend.

NEW MEMBERS.

List of new members of the American Medical Association during the month of June, 1905:

ALABAMA.

Gaines, T., Mobile.
Farish, L. B., Atmore.
Hitchcock, M. S., Brookwood.
Moore, D. S., Clarence.
Nabers, F. E., Birmingham.
Peters, U. J. W., Birmingham.
Shamblin, A. C., Gaylesville.

ARIZONA.

Hetherington, A. J., Phoenix.
Shattuck, H. P., Tucson.
Tarbell, Brent C., Naco.

ARKANSAS.

Simmons, W. H., Fordyce.

CALIFORNIA.

Blythe, T. M., Redlands.
Berry, A. J., Los Angeles.
Case, C. L., Oakland.
Cornwall, F., San Francisco.
Deering, W. E., Hollywood.
Hagadorn, J. L., Los Angeles.
Hewlett, A. W., San Francisco.
Hasson, D. W., Buena Park.
Ide, Chas. E., Redlands.
McLean, A. D., San Francisco.
Mattison, S. J., Pasadena.
Orella, F. R., San Francisco.
Shelton, A. H., Long Beach.
Smith, R. J., Milpitas.
Thompson, W., San Bernardino.
Thompson, J. E., San Francisco.

COLORADO.

Cooper, C. E., Denver.
Sheldon, J. E., Telluride.

CONNECTICUT.

Gill, M. H., Hartford.
Rising, H. B., So. Glastonbury.
Pierson, John C., Hartford.
Young, C. B., Middletown.

DIST. OF COLUMBIA.

Arnold, J. S., Washington.
Balloch, E. A., Washington.
De Vries, J. C., Washington.
French, Wm. B., Washington.
Marbury, C. C., Washington.

FLORIDA.

Barnes, B. F., Chattahoochee.
Bond, B. J., Tallahassee.
Diggett, E. W., Daytona.
Light, S. D. W., Key West.
Warren, E. W., Crescent City.

GEORGIA.

Gaines, L. M., Atlanta.
Wright, H. S., Atlanta.
Dexter, C. A., Columbus.
Kennedy, W. D., Metter.

IDAHO.

Aulguire, J. A., Pocatello.
Alexander, M. E., Mullan.
Bowers, L. C., Boise.
Boyd, T. O., Twin Falls.
Fairly, J. M., Oro Fino.
Hyde, Geo. Ed, Rexbury.
Lewis, J. B., Boise.
Neilson, A. F. O., Oakley.

ILLINOIS.

Foulon, J. J., French Village.
Foulon, Z. S., French Village.
Collins, M. V., Barry.
Cargill, C. W., Mason City.
Duncan, F., Chicago.
Ferguson, R. R., Chicago.
Hutchinson, E. B., Chicago.
King, O. A., Chicago.
Kaczorowski, J. P., Chicago.
Kerr, E. D., Westervelt.
Leahy, J. E., Chicago.
Livermore, W. H., Plattville.
Marquardt, E. W., Bensenville.
Manuel, W. S., Chicago.

Merki, E. J., Chicago.
Moserve, A. G., Robinson.
Napieralski, E. F., Chicago.
Potts, F. T., Toluca.
Pearce, Beatrice, Waukegan.
Rutledge, G. F., Chicago.
Rutledge, J. A., Elgin.
Ritter, John, Chicago.
Ruehl, M. C., Chicago.
Stol, S., Chicago.
Schurmeier, C., Chicago.
Studer, E., Peoria.
Stafford, T. J., Stockton.
Vanderhoof, D. A., Byron.
Way, H. J., Chicago.
Weisskopf, M. A., Chicago.

INDIANA.

Dryer, D. W., La Grange.
Ferguson, C. E., Indianapolis.
McEvoy, Jas. B., Ft. Wayne.
Sigmond, H. W., Crawfordsville.
Whitesides, Franklin.

INDIAN TERRITORY.

Callahan, Jas. O., Muskogee.

IOWA.

Agnew, F. F., Independence.
Chassell, J. L., Iowa Falls.
Downs, J. A., Glidden.
Dakin, C. E., Mason City.
Holmes, W. W., Keokuk.
Jennings, F. B., Drakeville.
Nye, H. W., Lovilia.
Rogers, E. B., Waterloo.
Sage, F. C., Waterloo.
Shively, —, Sheldah.
Sugg, H. R., Clinton.
Sheldon, B. L., Cedar Rapids.
Tinley, M. A., Council Bluffs.
Wade, Chas. M., Sioux City.

KANSAS.

Alexander, J. B., McPherson.
Cole, C. W., Norton.
Davis, O. P., Topkea.
Scott, T. W., Stafford.
Schoor, W. F., Hutchinson.

KENTUCKY.

Brook, G. S., Bush.
Bowman, Wm., Tolesboro.
Brown, F. M., Hopkinsville.
Coleman, J. S., Frankfort.
Hill, A. F., Vanceburg.

LOUISIANA.

Lafleur, A., Opelousas.
O'Connor, A. T., Neame.
Seebold, H. B., New Orleans.
Smith, M. F., Shreveport.

MAINE.

Cragin, D. B., Waterville.
Gehring, E. W., Portland.

MARYLAND.

Atkinson, A. D., Baltimore.
Bromwell, J. E., Mt. Airy.
Brotemarkle, C., Vienna.
Dyson, V. H., Laytonsville.
Eversfield, W. O., College Park.
Franklin, C. M., Towson.
Hendrix, J. O., Frederick.
Hammon, L. V., Baltimore.
Likes, S. H., Baltimore.
Lang, J. D., Baltimore.
Neale, L. E., Baltimore.
Whitridge, Wm., Baltimore.
Wagner, Wm. H., Woodsboro.

MASSACHUSETTS.

Aldrich, A. C., Somerville.
Amadon, A. F., Boston.
Birmingham, R. M., Lawrence.
Bennett, W. H., Hyde Park.
Butler, Wm. H., Fall River.
Briggs, F. M., Boston.
Broughton, H. W., Boston.
Bryson, A. A., Fall River.
Comey, P. P., Worcester.
Campbell, B. F., E. Boston.
Dame, F. R., Medford.
Dean, R. D., Taunton.
Draper, A. D., Boston.
Farr, E. L., Roxbury.
Fiske, E. L., Fitchburg.
Fisher, I. J., W. Newton.
Howe, W. C., Boston.
Howard, H. B., Boston.
Hurd, A. G., Millbury.
Hill, G. J., Beverly.
Hamilton, R. D., Newburyport.
Holmes, May S., Worcester.
Homans, John, Boston.
Hipkiss, George, Boston.
Jelly, A. C., Boston.
Jones, D. F., Boston.
Knight, Chas. L., Boston.
Keleher, Wm. H., Woburn.
Lindsey, J. H., Fall River.
Lambert, J. H., Lowell.
Lord, F. T., Boston.
Lovell, D. B., Worcester.
McLeod, J. S., Boston.
Morgau, L. E., Brookline.
Morse, E. G., Roxbury.
MacArthur, Geo. E., Ipswich.
Ott, Geo. J., Clinton.
Osgood, George, Boston.
O'Neill, R. F., Boston.
O'Sullivan, J. J., Lawrence.
Palfrey, F. W., Boston.
Parker, R. W., Lowell.
Rowen, H. S., Boston.
Sawyer, W. F., Fitchburg.
Smith, E. S., Westfield.
Stedman, J. C., Boston.
Sughrue, D. F., Roxbury.
Starbuck, J. C., North Easton.
Tolman, Julia, Arlington, Mass.
Townsend, David, Brookline.
Torbert, Jas. R., Boston.
Verhoeff, F. H., Boston, Mass.
Wadsworth, O. F., Boston.
Woodward, L. F., Worcester.
Walker, Wm., Boston.
Wentworth, A. H., Boston.
Williams, Harold, Boston.
Young, J. F., Newburyport.
Young, E. B., Boston.

MICHIGAN.

Allen, R. C., St. Joseph.
Baird, R. H., Howell.
Clarke, G. M., Detroit.
Drummond, C. A., Painesdale.
Ditmars, W. R., North Adams.
Kerry, F. M., Benton Harbor.
Lenhard, C. A., Detroit.
Olson, R. G., Muskegon Heights.
Niles, H. R., Flint.
Rutledge, Frances E., Newberry.
Sicott, R., Sparta.
Schwendner, Hattie A., St. Joseph.
Thomas, E. P., Scottsville.
Thomas, B., Jackson, Mich.
Witt, Edw. J., St. Joseph.

MINNESOTA.

Christie, G. R., Long Prairie.
Dutton, C. E., Minneapolis.
Foster, N. W., St. Paul.
Hulburd, H. L., Morris.
Lapierre, C. A., Minneapolis.
Oredson, O. A., Duluth, Minn.
Rishmiller, J. H., Minneapolis.
Roberts, C. B., Minneapolis.
Spratt, C. N., Minneapolis.
Smith, D. D., Mankato.
Theissen, Wm. N., Henderson.

MISSISSIPPI.

Buck, H. C., Friars Point.
Jackson, J. S., Belzani.
Marsalis, W. I., Centerville.
Smith, W. D., Franklin.
Washington, J. J., Pass Christian.

MISSOURI.

Goodson, E. N., Hopkins.
Laurazana, L., Kansas City.
Shotwell, C. B., Richmond.

MONTANA.

Blair, J. F., Bozeman.
Grigg, J. A., Butte.
Riddell, W. C., Helena.
Salvail, N., Helena.
Ward, A. L., Boulder.

NEBRASKA.

Loughridge, W. K., Milford.
Zerzan, G. F., Milligan.

NEVADA.

Morrison, S. K., Reno.

NEW HAMPSHIRE.

Day, H. C., Exeter.
Faulkner, H. K., Kene.
Stillings, F. A., Concord, N. H.

NEW JERSEY.

Dubell, J. E., Columbus.
Gorton, E., Summit.
Fewsmith, J. L., Newark.
Fewsmith, J., Newark.
Martland, W. H., Newark.
Robinson, B. A., Newark.

NEW MEXICO.

Leavel, R. V., Silver City.
McNeill, R. I., Mescalero.

NEW YORK.

Doty, A. H., Quarantine.
Gillette, A. A., Rome.
Gosney C. W., New York.
Dugan, John, Albion.
Hallock, L. R., New York.
Jarcho, J., New York.
Lesem, Wm. W., New York.
Miglionico, G., New York.
Pearce, R. M., Albany.
Pierce, L. R., Newburgh.
Thompson, E. C., Newburgh.
Wakeman, B. R., Hornellsville.
Williams, H. T., Rochester.

NORTH CAROLINA.

Boyles, J. H., Greensboro.
Burt, S. P., Louisburg.
Candler, Chas. Z., Dillsboro.
Davis, A. P., Winston-Salem.
Graham, G. A., Raeford.
Harrill, L. B., Caroleen.
Hicks, I. F., Dunn.
Liggett, N., Hobgood.
Lee, L. V., Lattimore.
Martiu, S. L., Leaksville.
Paddison, J. R., Oak Ridge.
Robinson, Frank, Lowell.
Royster, S. S., Mooresboro.
Steele, Wm. H., Rockingham.
Winchester, F. M., Charlotte.
Young, R. S., Concord.

OHIO.

Bliss, C. B., Sandusky.
Brown, H. J., Ironton.
Cameron, E., Lorain.
Cummins, G. M., Hamilton.
Dreyfoos, Max, Cincinnati.
Klaus, M. H., Cleveland.
Kurtz, C. D., New Philadelphia.
Lowry, A. C., Ironton.
Linn, F. W., Cleveland.
Lukens, Chas., Toledo.
Nash, A. C., Glenville.
Oliver, J. A., Steubenville.
Podlewski, S. J., Steubenville.
Robb, I. H., Newark.
Spence, A. D., So. Lebanon.
Tims, W. A., Cleveland.
Weeks, E. A., Akron.
Welch, A. J., Mt. Sterling.

OREGON.

Buck, Louis, Portland.
Chauce, A. W., Portland.
Fenton, H. C., Portland.
Fessler, Theo., Portland.
Gray, E. L., Portland.
Gray, K. P., Portland.
Gillespie, R. L., Portland.
Hamilton, L. H., Portland.
Hamilton, W. B., Portland.
Hill, C. E., Portland.
Hill, S. S., Portland.
Little, E. G., Portland.
Logan, R. W., Moro.
Loughridge, S., Grant's Pass.
Mount, H. S., Oregon City.
Parker, E. H., Portland.
Pohl, Emil, Portland.
Prinzing, J., Ontario.
Ricen, Leo, Portland.
Slocum, S. C., Portland.
Walker, R. C., Portland.
Wood, Wm. L., Portland.
Whiteside, Sarah, Portland.
Wetherbee, J. R., Portland.

PENNSYLVANIA.

Bacon, John, Philadelphia.
Berens, Conrad, Philadelphia.
Baker, Hugh, Leisenring.
Carey, R. B., Glen Luch.
Care, J. R., Norristown.
Doane, L. L., Butler.
Dunn, J. S., Pittsburg.
Davis, A. M., Philadelphia.
Ferguson, Albert, Philadelphia.
Findley, J. D., Altoona.
Fackler, L. H., York.
Frantz, G. B., Coal Center.
Furnee, C. H., Marshalsea.
Gundy, C. A., Lewisburg.
Heilman, R. P., Emporium.
Henderson, J. L., Osceola Mills.
Kress, F. C., Lilly.
King, I. K., Pittsburg.
Lindley, D. C., New Castle.
Logan, Orlando, Girard.
Lefever, E. K., Boiling Springs.
McGeagh, A. C., Pittsburg.
Missett, J. V., Philadelphia.
Maclay, D., Chambersburg.
McNeely, J. F., Munhall.
McGeary, W. J., Sharpsburg.
O'Neill, M. P., Philadelphia.
Price, A. D., Pittsburg.
Quiney, J. J., Easton.
Robinson, E. T., Philadelphia.
Roach, T. E., Renovo.
Rowles, J. F., Mahaffey.
Redeker, F. W., Bloomsburg.
Rice, N. S., Durham, Pa.
Runkle, S. C., Philadelphia.
Stanton, W. B., Philadelphia.
Stahlman, F. C., Charleroi.
Smith, R. S., Saegertown.
Schultz, J. Wm., Tremont.
Saylor, E. S., Philadelphia.
Shoemaker, Harlan, Philadelphia.
Trimbath, W. P., Everett.
Trout, N. C., Fairfield.
Taylor, H. F., Ridley Park.
Venus, C. H., Windsor.
Van Horne, T. C., Pittsburg.
Watson, S. S., Moosic.
Waters, D. C., Arnot.
Wickham, J. J., Rochester.
Zieg, John, Pittsburg.
Zulick, Thos. C., Easton.

PHILIPPINE ISLANDS.

Heiser, V. G., Manila.

RHODE ISLAND.

Blumer, G. A., Providence.
Fisher, P. E., Providence.
Peters, J. M., Providence.

SOUTH CAROLINA.

Bigger, I. A., Clover.
Browning, A. W., Elloree.
Cornell, W. P., Charleston.
Mitchell, J. C., Charleston.
Rutledge, Edward, Charleston.
Egleston, W., Hartsville.
Earle, J. B., Greenville.
Fike, A. R., Spartanburg.
Lindsay, S., Winnsboro.
Wideman, S. A., Woodruff.

SOUTH DAKOTA.

Ball, W. R., Mitchell.
Klaveness, E., Brookings.
Menser, E., Bridgewater.

TENNESSEE.

Ham, E. C., Memphis.
Simpson, Jas. A., Glen Mary.
Waters, A. C., Bodenham.

TEXAS.

Baird, Jas. C., Big Springs.
Brown, W. L., El Paso.
Balde-Sarelli, P., San Antonio.
Jameson, W. G., Palestine.
Lay, J. E., Hallettsville.
White, Jas. C., Paris.

UTAH.

Osgood, C. F., Morgan.
Robison, J. C., Fillmore.

VERMONT.

Johnson, R. T., Concord.
Nay, W. S., Underhill.
Perkins, H. B., Groton.
Phelps, F. C., Vergenner, Vt.

VIRGINIA.

Hirschler, D. L., Norfolk.
Kellam, C. D., Norfolk.
Jones, W. R., Richmond.
Ayler, J. W., Newport News.
Caldwell, B. R., New Castle.

WASHINGTON.

Bentley, Frederick, Seattle.
Bumgarner, C. S., Thornton.
Booth, J. R., Seattle.
Bailey, J. W., Seattle.
Bridgford, W. L., Olympia.
Chapman, W., Spokane.
Carpenter, D. N., Puget Sound.
Curran, T. B., Tacoma.
Cook, A. B., Colville.
Coleman, J. T., Chehalis.
Dumon, J. H., Centralia.
Dow, Geo. H., Chehalis, Wash.
Gove, R. A., Tacoma.
Heg, E. E., Seattle.
Hicks, G. S., Tacoma.
Hill, F. R., Tacoma.
Kinnear, C. H., Tacoma.
Knickern, E. L., Centralia.
Libby, G. A., Tacoma.
Libby, G. W., Spokane.
Loughary, J. B., Seattle.
McDowell, G. K., Spokane.
McKone, Jas., Tacoma.
McCulloch, Geo. B., Seattle.
Miles, W. T., Seattle.
McGreery, W. B., Tacoma.
O'Rourke, Wm. P., Georgetown.
Phillips, F. A., Seattle.
Perkins, L. M., Tacoma.
Perry, R. W., Seattle.
Primmer, T., Centralia.
Pearson, M. L., Aberdeen.
Pomeroy, F. A., Cheney.
Rose, Frank, Spokane.
Russell, C. H., Pullman.
Snow, A. G., Seattle.
Stevens, J. E., Seattle.
Stewart, S. J., Seattle.
Stewart, A. C., Tacoma.
Trommald, E. A., Tacoma.
Turner, W. K., Seattle.
Thomson, R. L., Spokane.
Van Winkle, J. O., Oakville.
Weichbrod, I. A., Tacoma.
Walston, John S., Montesano.
Wagner, G. C., Tacoma.

WEST VIRGINIA.

Brounfield, G. H., Scottdale.

WISCONSIN.

Ackley, S. B., Oshkosh.
Andrews, E. P., Portage.
Bowman, F. F., Madison.
Blachly, Hayward.
Foster, A. M., Kaukanna.
Fleek, J. L., Brodhead.
Felter, E., Plymouth.
Folsom, Wm. H., Markesan.
Hoermann, R. B., Watertown.
Ketterer, E. A., Montfort.
Lewis, S. M., Kenosha.
Monroe, W. H., Merrill.
Mann, H. E., Marinette.
McDougall, G. T., Fond-du-lac.
Noyes, G. B., Oshkosh.
Swarthout, E. C., La Crosse.
Smith, S. M. B., Crandon.

WYOMING.

Hawk, J. W., Green River.

Marriages

W. W. Conger, M.D., to Miss Helen Brigham, both of Toledo, June 28.

J. P. Gardiner, M. D., to Miss Antionette Sprague, both of Toledo, June 28.

Charles W. Crane, M.D., to Miss Annie Reab, both of Augusta, Ga., June 28.

William P. Harbin, M.D., to Miss Edith Lester, both of Rome, Ga., June 28.

George H. Willis, M. D., to Miss Ethel B. Fahr, both of Winslow, Ill., June 14.

Samuel C. Gurney, M.D., to Miss Marie H. Poillon, both of Detroit, Mich., June 28.

Logan M. Dickson, M.D., to Miss Leila F. Sherman, both of Revere, Mo., June 28.

Francis J. Kirby, M.D., Baltimore, to Mrs. Teresa J. Werts, of Washington, June 27.

James S. Billingslea, M.D., to Miss Katherine E. Bell, both of Baltimore, June 26.

Ellis Duncan, M.D., to Mrs. Anna Kinnaird Strother, both of Louisville, Ky., June 29.

Charles McCaw Wood, M.D., to Miss Mary Stroud Swan, both of Maroa, Ill., June 28.

Richard W. Follis, M.D., Baltimore, to Miss Louise Riggs, at Washington, June 27.

Orville M. Clay, M.D., Denver, Colo., to Miss Elizabeth Wise of Boulder, Colo., June 28.

William Huff Baldwin, M.D., to Miss Theodoci Rogers, both of Memphis, Tenn., June 28.

Glen Dean Gallup, M.D., River Falls, Wis., to Miss Frances Crippen of Roberts, Wis., June 21.

Gordon Chason, M.D., Bainbridge, Ga., to Miss Mary Estell Kornegay of Newberne, N. C., June 27.

Frank Banghart Walker, M.D., to Miss Kate Huntington Jacobs, both of Detroit, Mich., June 26.

H. Walton Wood, M.D., Taunton, Miss., to Miss Grace Elizabeth White, at Baltimore, June 28.

Arlington Cecil Jones, M.D., Covington, Va., to Miss Anne Shanahan of Tuckahoe, W. Va., June 28.

John Francis Stein, M.D., Oshkosh, Wis., to Miss Lilian Julia Groth of Milwaukee, Wis., June 14.

Charles H. Barksdale, M.D., to Miss Pattie Elizabeth Edmunds, both of Petersburg, Va., June 28.

Arthur D. Hirschfelder, M.D., San Francisco, to Miss Mary Strous, at Washington, D. C., June 26.

Lester William Bellows, M.D., Waterloo, N. Y., to Miss Josephine Duff of Seneca Falls, N. Y., June 21.

Albert Earle Boozer, M.D., Columbus, S. C., to Miss Grace Bland Walter, at Winchester, Va., June 28.

Charles James Wallace, M.D., Chippewa Falls, Wis., to Miss Renna Lee Keith of Minneapolis, Minn., June 7.

Edward Hall Richardson, M.D., Farmville, Va., to Miss Emily Gould, at Mt. Washington, Baltimore County, Md., June 27.

Sarah Edith Ives, M.D., Middletown, Conn., and Rev. James J. Cogan, rector of St. Luke's Church, Fall River, Mass., June 28.

Deaths

Benjamin J. Day, M.D. Pennsylvania Medical College, Philadelphia, 1856, said to have been the oldest practitioner in southern Indiana; for many years professor of surgical pathology in Evansville Medical College, died at the Evansville Sanitarium June 29, after an illness of a year, from senile debility, aged 83. At a special meeting of the Vanderburg County Medical Society June 30 resolutions of sympathy and condolence were adopted.

Walter Bryan, M.D. New York University, New York City, 1900, professor of physiology and toxicology and assistant professor of materia medica and pharmacology in the Brooklyn College of Pharmacy, was found dead in his apartments in New York City June 26, from heart disease, aged 38.

Stephen G. Hubbard, M.D. Dartmouth Medical School, Hanover, N. H., 1848, formerly a member of the faculty of Yale Medical School, New Haven, and secretary of the American Medical Association in 1859-1860, died at his home in New Haven June 30, from senile debility, aged 88.

Ubert Lee Holford, M.D. Rush Medical College, Chicago, 1892, for seven years a member of the village board of Cassville, Wis., and for the last two years its president, died at his home in Cassville from tuberculosis June 13, after an illness of a year, aged 33.

Hiram R. Fish, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1870, postmaster at Gravois Mills, Mo., for many years, died at his home in that place June 19, after an invalidism of several years, aged 71.

Robert S. Briscoe, M.D. St. Louis Medical College, 1857, a pioneer of Colorado City, Colo.; for many years city physician of El Paso County, died at St. Francis' Hospital, Colorado Springs, June 25, after a short illness, aged 71.

Joseph A. McKenzie, M.D. Kentucky School of Medicine, Louisville, 1879, died at his home in Eldorado, Kan., June 25, five days after an accident in which he was thrown out of an automobile and seriously injured, aged 65.

William Leavitt Jackson, M.D. Harvard University Medical School, Boston, Mass., 1896, of Roxbury, Boston, died at Bad Nauheim, Germany, June 22, after an illness of ten years, aged 52.

Franklin B. Nice, M.D. Jefferson Medical College, Philadelphia, 1851, died at his home in Hamburg, Pa., June 29, from cerebral hemorrhage, after an illness of four months, aged 75.

William Comerford, M.D. Rush Medical College, Chicago, 1890, died at his father's house in Appleton, Wis., June 27, after ten years of ill health, from hemorrhage of the stomach.

John F. Gilluly, M.D. University of Georgetown Medical Department, Washington, D. C., 1903, died at his home in Central Falls, R. I., June 21, after a long illness, aged 26.

Charles H. Hitchcock, M.D. Cincinnati, 1857, for many years a prominent practitioner of Aurora, Ill., died at his home in that city June 28, after an extended illness, aged 74.

Isaac J. Hopper, M.D. Cincinnati, Ohio, 1885, died from tuberculosis at his home in Blue River Township, Crawford County, Ind., June 25, after a long illness, aged 45.

Samuel P. Donnahoo, M.D. University of Louisville Medical Department, 1892, died at his home in Jefferson City, Tenn., June 20, after an illness of four weeks, aged 33.

Franklin B. Mainor, M.D. Vanderbilt University Medical Department, Nashvile, 1880, was shot and killed in a street duel with E. E. Griffin at Itasca, Texas, June 26.

Roger Q. Drake, M.D. Jefferson Medical College, Philadelphia, 1868, died at his home in Mount Sterling, Ky., June 29, after an illness of more than a year, aged 59.

J. H. Alexander, M.D. University of Louisville Medical Department, 1872, of Elizabethton, Tenn., died at Johns Hopkins Hospital, Baltimore, June 24.

William McBryar, M.D. New York University, New York City, 1853, died suddenly at his home in Apollo, Pa., June 25, from heart disease, aged 84.

Wesley Roberts Miller, M.D. Columbus (Ohio) Medical College, 1876, died at his home in Detroit, Mich., June 21, after a long invalidism, aged 75.

Eugene B. Perry, M.D. Rush Medical College, Chicago, 1880, died at his home in Melvin, Ill., June 22, from uremia, after a short illness, aged 61.

Willis A. Hammond, M.D. Columbus (Ohio) Medical College, 1881, died at his home in Madison, N. Y., June 21, after a long illness, aged 52.

James M. Kelly, M.D. Cincinnati College of Medicine and Surgery, 1849, died at his home in Steubenville, Ohio, June 23, aged 79.

Maurice M. Hampton, M.D. Ohio, 1876, died at his home in Sanford, Fla., June 16, after an illness of several weeks.

James F. Gary, M.D. St. Louis, 1878, died at his home in Delhi, Ill., June 19, after a lingering illness, aged 55.

Selina H. Miller, M.D. Missouri, 1886, died at her home in Lincoln, Ill., June 22, aged 73.

Book Notices

Manual of Serum Diagnosis. By Dr. O Rostoski, University of Wurzburg. Authorized Translation by Charles Bolduan. First Edition. First Thousand. Cloth. Pp. 86. New York: John Wiley & Sons. London: Chapman and Hall Ltd. 1904.

Rostoski uses the term "serum diagnosis" in its literal sense, including not only the phenomenon of agglutination for the identification of bacteria and for the recognition of disease, but also the action of the bacterial precipitins of Kraus, and the use of serum-precipitins and hemolysins as forensic blood tests. In harmony with the evident intention, however, of producing a manual which satisfies a need of practitioners, the author treats chiefly of the agglutination reaction as a means of recognizing the more common infections. Eleven pages of "general considerations" are devoted to a brief and clear description of the different kinds of antibodies which may be formed. The value and the application of the agglutination test in typhoid and paratyphoid occupy about one-half the book. Such subjects as the date of appearance of the reaction, the reaction in conditions other than typhoid, failure of the reaction, group agglutination, and tests as performed with killed micro-organisms are discussed with a clearness which is gratifying. The ease with which the practitioner in his own office may perform the agglutination test with formalin cultures or with some such preparation as Ficker's diagnostic, is illustrated. This feature is introduced by the translator who also inserts paragraphs on paratyphoid and paradysentery. Chapter III discusses agglutination in tuberculosis and Chapter IV "Agglutination in Other Diseases," as plague, cholera, dysentery, glanders and infections with the pyogenic cocci. Chapters V and VI treat of serum reactions which have a forensic value. An appendix includes several drawings from Wilson showing the microscopic appearances of a glutinated bacteria and illustrating some sources of error.

An Atlas of Dermatology, Showing the Appearances, Clinical and microscopical, Normal and Abnormal, of Conditions of the Skin. By M. Dockrell, M.A., M.D. Cloth. Pp. 264. Price, $17.00 net. New York: Longman's Green & Co. 1905.

This atlas is a new departure in that each case which is illustrated has below it a microscopic drawing showing the histologic findings. This plan of illustration is worthy of unqualified recommendation. We have seen no atlas which is so instructive as this because of this feature, and it is hard to imagine a method of illustrating cutaneous diseases which is more interesting or more instructive. The atlas contains forty plates, most of them illustrating the more familiar dermatoses; there are in addition several plates of rare conditions. The numerous illustrations of the commoner dermatoses make the atlas of great value to the general practitioner. It should also appeal strongly to the expert on account of the combination of histologic and clinical pictures and the excellent judgment used in the selection of cases for illustration. The text is confined, as it should be, to a description of the microscopic section and of the lesion from which it is taken. The work is an excellent example of book making. It is printed on highly glazed, thick paper, which gives the best effect to the illustrations. The coloring of the illustrations is fair; it is not as good as that of a few of the most recent French and German atlases, but it does not fail in this particularly; the coloring is not confined to a pink background to represent normal skin with casual dabs of color in spots to represent lesions. It is sufficiently well done to represent lesions with accuracy. On the whole, the work can be highly commended. It is to be hoped that it will have a large sale, so that its success may induce the production of other atlases on the same plan.

A Treatise on the Diagnosis of Diseases of Women. For Students and Practitioners. By Palmer Findley, B.S., M.D., Assistant Professor of Obstetrics and Gynecology, Rush Medical College in affiliation with the University of Chicago. 588 pages, 281 illustrations, 59 of them in Colors. Cloth. Price, $4.75 net. Lea Brothers & Co. Philadelphia. 1905.

The present—second—edition contains a number of new paragraphs and several new chapters. A chapter on the relation of the pathology of the blood to gynecologic diagnosis and another on the bacteriology of the female genital tract give clear ideas of these important subjects. A number of new plates and engravings have also been added, and some of the cuts of less useful instruments omitted. The paragraphs on "Cystic Disease of the Ovary" have been rewritten, the theory of the etiology of this disease introduced and the recent literature carefully reviewed. Valuable additions to the chapter on the urinary organs have been made. Exfoliative endometritis and abscess of the uterus, both omitted in the first edition, have been taken up here. This is an extremely practical book, and a very valuable one for the student and practitioner.

A Manual of acute Poisoning, Giving Classification, Varieties, and Individual Substances usually met with in Emergency Poisoning, etc. Together with methods for use in First Aid to the Injured, by J. W. Wainwright, M.D. Cloth. Pp. 96. Price, $0.75, net. New York: E. R. Pelton, 1905.

This book contains a brief outline of the symptoms, tests and treatment of acute poisoning from various substances. It makes a convenient ready-reference book for these emergency cases.

Miscellany

THE ETHICS OF CONSULTATION.

B. D. Bosworth, M.D.

KNOXVILLE, TENN.

Consultation is the rose in our flower-garden; it is the milk in our cocoanut; it is the cream on our milk. To be a worthy and popular consultant is the loftiest of all our ambitions, the most exalted of all our attainments and the richest in its results and rewards. To be an able consultant is to be "greater than a king." And yet it is the tendency of this age rather to discourage consultation; and many are the so-called independents, who, attaching some fledgling just from the nest as anesthetist and assistant, and equipping themselves with a few thousand yards of "red tape," deem themselves amply sufficient for all the mighty problems of life and death.

Many are the egotists who have become so thoroughly imbued with a sense of their own importance and so profoundly in love with their own opinions that the bare suggestion of a consultant is an insult. Many are the small-souled, jealous, envious, narrow-minded men among us who advise against consultations solely because their hearts contract and shrivel at the thought of another man receiving the justly increased honorarium. Others there are (and alas! their name is legion) who grope always in "the darkness of ignorance," and who everlastingly oppose consultation because they fear or, perhaps, can not bear to have the light turned on.

These and many other pernicious influences are at work to destroy this proudest of our tenets and ordinances. So that, first of all, I wish to enter a protest against them and a plea on behalf of both patient and physician for a wider and more generous view in reference to a matter of such vital import.

What poor, sick, suffering mortal ever existed but was refreshed and buoyed up and filled with renewed hope and good cheer by the opportune introduction of the new mind, brought to bear on his case, if only to assure him all was well? What honest and conscientious physician or surgeon can deny that some of the proudest moments of his career have come to him when, in the confidence of the consulting room, some able and distinguished confrère assures him that his work is approved and his duty well performed? Or where is the faithful practitioner, who, when long and continued effort on a given case has been unattended with success, will not gladly and with a heart free from guile take off his hat to the consultant, who puts him on the right track and places within his hands the material from which a cure is wrought? Did there ever live the obstetrician, worn by prolonged and assiduous attendance on protracted labor—or did there ever breathe the agonized parturient, fagged and forlorn from the pangs and suspense of inertia, but were both filled with new hope and new energy when the strong, fresh, wholesome presence of the honored consultant enters the room to give without stint from his cooler head and to lend without limit his steadier hand and nerve?

The mind must indeed be narrow and the soul infinitesimal that can fail in the full appreciation of such splendid help so modestly and so generously given. Aside from the benefits that accrue to the patient and to his attending physician out of consultation, there remains this other potent reason why it should be encouraged in every honorable way: The majority of us have swooped down on this community, red-handed from the dissecting room, and flung out to these soft southern breezes a banner (in the shape of the sign Dr. So and So), on whose magic folds is written the hidden inscription: "We own the earth;" unmindful of the fact that we are poachers on the preserves of other and perhaps better men; never for one instant admitting to ourselves that our patients and our incomes can only be derived from patrons we must beguile from the clientele of men grown gray in their service as family physicians. It becomes us, therefore, to treat these gentlemen kindly and to make them whatever reparation we can by calling them in consultation as often as possible and gladly helping them to secure the larger fee in return for their aid in saving the lives of men, women and children, whom they know so well; not waiting either until the patient be moribund, but let them share our triumphs as well as our responsibilities.

The question, "with whom shall we consult?" is to-day perhaps a more complex one than it has ever been in all the history of ethics, because the American Medical Association has in recent session thrown down the bars to those who have been homeopaths, eclectics, etc. There are reputable schools in which they should have been educated and can be still, and this action is as yet too young to be judged by its fruits; but I am greatly troubled over the prospect, for I love that clause in the time-honored Code (now the Principles of Ethics), which warns us against association with any man whose practice is based on an exclusive dogma; and I believe that much of the dignity of the regular profession has had its origin in its contempt for quackery.

I believe in exclusive consultation—an exclusiveness that will shut out the moral leper, the notably unworthy, the palpable imposter and that will forever bar the criminal abortionist. And I thank God that there is no law to prevent the exercise of individual judgment and discretion as to whether or not we shall meet Dr. Scoundrel in these sacred relations. Be an upright regular yourself, first, last and always, and see to it that you associate only with upright regulars.

But let us leave these painful thoughts and study—what I hope will appear to be—an ethical consultation between Dr. A, the attending or family physician, and Dr. B, the consultant. Dr. A has become dissatisfied with the condition of Mr. Smith and has asked for a consultation (and he feels all the better for having taken the initiative in the matter, rather than having waited until Mr. Smith or the family have awakened him with the bombshell that they would like a consensus of opinion).

In the choice of the consultants Mr. Smith and family should be allowed an unbiased selection, and when Dr. B has been agreed on, it is Dr. A's duty to call him up and ask for an appointment at as early a moment as the case requires and is convenient for him. The hour being set, the next point is punctuality; it is poor taste and bad form for either to keep the other waiting, and when this does occur unavoidably the amend honorable is always in order.

From the moment Dr. B enters the house he becomes Dr. A's welcome guest and is entitled to every possible courtesy and civility. Dr. A meets him at the door when practicable and extending to him the welcoming hand, leads him cordially into a private room and unfolds to him the nature of the malady and a full history of the case, emphasizing whatever features have seemed at all obscure.

Following this preliminary conference they repair at once to the sick room, where Dr. A quietly introduces any strangers who may be present, the nurse and the patient, and when, without any show of hurry, greetings have been exchanged and pleasantries passed, Dr. B is offered a comfortable chair near the fire or window and Dr. A takes his place at the bedside and carefully observes the patient's pulse and tongue and temperature, and further seeks for any possible change or hitherto unnoted circumstance. Having satisfied himself thoroughly, he passes the thermometer over to Dr. B and courteously invites him to proceed with his examination of the patient.

In conducting this examination Dr. B must in turn prove himself a gentleman (and there is no better opportunity for acting the dog than is presented right here, if he happens to be built that way). He must keep in mind that the attending physician is perhaps being weighed in the balance, and he must have great care to take no unfair advantage. I have known shrewd, villainous doctors to dash into this examination with an eye single to their own brilliancy and advancement, and to carry themselves throughout with a display and bombast which soon makes the attending physician feel and look like the far-famed "thirty cents." Ethics is opposed to everything like this. There must be no play to the grandstand. There must be no assumption of superiority, no display of red tape, no indulgence in extraordinary attentions or assiduities. There must be strict avoidance of anything which might humiliate your brother.

To illustrate this point: There were several of us, some years ago, engaged in searching for pus in a suspected pleural sac, and, after several days' fruitless endeavor and sundry plunges of the aspirating needles, it was determined to seek aid from "the noblest Roman of them all" (you will recognize him from a recital of the incident), and his first plunge filled the syringe with pus. He quickly covered it up so that neither patient nor bystander knew of his success, and when we next saw that syringe 'twas behind the closed doors of the consultation room. Here is the essence of ethics. On another occasion, when pressed by an eager, anxious sister of the patient for answer to important questions, I heard him reply with great dignity: "Your family physician is my mouthpiece I must refer you to him."

It is so easy to act the gentleman and so beautiful to all concerned. We can always maintain a scrupulous regard for the character and standing of the family physician and still not sacrifice the patient.

When Dr. B has completed his examination he signifies it by a nod to Dr. A and with an encouraging goodbye to the patient and others, a graceful exit is accomplished and they retire to the consultation room and shut the doors. Dr. A again states his case, his diagnosis and treatment and accords Dr. B the floor, at the same time taking out notebook and pencil. Dr. B proceeds modestly to deliver a short lecture, covering the case briefly yet fully, praising where he can, agreeing where possible, giving freely all he knows on the subject, keeping the patient's welfare uppermost, suggesting a line of procedure and treatment which in his judgment will yield the best results, and winding up by saying: "Now, my dear Dr. A, there's all I know about it. You have my ideas and suggestions; if you see fit to apply them or if you can find in any of them the help you seek, I shall be most happy." Dr. A thanks him cordially, adding the words of praise that are always so grateful and promising to keep him posted, bows him out with politeness. Returning at once to the bedside, he does Dr. B the justice to execute as many of his suggestions as will satisfy his conscience and his God, giving him a full measure of credit and fairness.

In the event that their conference fails in an agreement and the point of difference be one of special moment, they must ask the family for another consultant, and they must agree on a man whom both can trust with the burden of a decision. Or still others are often called in desperate straits—and the greater the number the greater the need for form and ceremony; and each new consultant is another honored guest of the attending physician. In rendering opinions, each is called on in their order of coming.

At this point I must enter a plea for conciseness and brevity. For the patient's sake first, because he is the one most concerned, and if your deliberations are prolonged unreasonably he will become uneasy and restless and alarmed. For the family's sake next, because they are, perhaps, awaiting your decision with breathless anxiety, and I have often found both patient and family worked up to the highest pitch of panic and excitement after protracted conference. Lastly, be brief for the sake of each other, for we are all supposed to be busy men, and any other view is an indignity. Other patients have their claims, and keeping these points in mind, it will be easy for each man to do justice to the case in hand without indulgence in matters entirely foreign. The consulting room is not the place for idle persiflage or boresome yarn-spinning and theoretical discussions should likewise be eliminated.

When a consultation is concluded and its results begin to tell, it sometimes occurs to the family and the patient that they would like that consultant to have full charge of the case—and I have known consultants to take full charge of the case and let the attending physician find out about it as best he may—this to the everlasting shame and disgrace of these consultants. The awkwardness of such a demand on the part of family or patient can only be met in one honorable way, and that is for the consultant to state to them firmly and positively that they can only have his help in connection with the attending physician.

Unless importuned by the family physician himself, offering abundant and sufficient reasons, no reputable physician is ever justified in assuming control of a case in which he has once served as a consultant. The attitude of associate counsel is always available—the retained physician and the family physician can always work together; and consideration for the patient's purse must never take precedence over a confrère's feelings. To solicit a consultation is as contemptible as to solicit a patient. No gentleman will ever be guilty of either of these grave offenses. "All discussions in consultation should be held as confidential. Neither by word nor by manner should any of the participants in a consultation assert or intimate that any part of the treatment pursued did not receive his assent." So reads verbatim Section 9 of Article III of the Principles of Medical Ethics of the American Medical Association—alas that so few of us should recognize it!

In my twenty years of study of questions ethical I have found the almost invariable excuse for flagrant violation of our Principles of Ethics to be ignorance. Ignorance is not admitted in our courts of justice—even in extenuation of the offenses of men who never professed intellectuality. Much less then should it ever be admitted to exonerate members of a learned profession.

If we be ignorant of these principles, then let us take a few days off and master them, and then make faithful endeavor to live up to them, or else take down our signs and return to the hoe and the plow. "There is no darkness but ignorance." Thus the immortal bard of Avon sounded the keynote of all civilization.

> "It is a common sentence that knowledge is power! but who hath duly considered or set forth the power of Ignorance? Knowledge slowly builds up what Ignorance in an hour pulls down.
>
> "Knowledge, through patient and frugal centuries, enlarges discovery and makes record of it: Ignorance, wanting its day's dinner, lights a fire with the record, and gives a flavor to its roast with the burned souls of many generations.
>
> "Knowledge, instructing the sense, refining and multiplying needs, transforms it into skill and makes life various with a new six day's work: come Ignorance drunk, on the seventh, with a firkin of oil and easy 'Let there not be'—and the many colored creation is shriveled up in blackness. Of a truth Knowledge is power, but it is a power reined by scruple, having a conscience of what must and what may be; whereas, Ignorance is a blind giant, who, let him but wax unbound, would make it a sport to seize the pillars that hold up the long wrought fabric of human good, and turn all the places of joy dark as a buried Babylon!"

MEDICAL PRACTICE IN PERSIA.

MIRZA SINORE MUZAFFAR RAFFIE.
KASHAN, PERSIA.

The physicians in Persia can conveniently be divided into three classes, namely, those who practice according to the old school exclusively, those who practice according to both the modern and the old schools, and those who practice according to the modern school exclusively.

Those who practice according to the old school may be again subdivided into two classes; those who can read and write, and those who can neither read nor write. The former are usually successful in the educated or partially educated communities. They have just about enough knowledge of their native tongue and also of Arabic to be able to read the medical text-books, written in both Persian and Arabic, and to follow very closely the directions and suggestions given in such books. They by no means prescribe drugs for their patients; for, aside from being totally ignorant of the application of drugs, they have a strong superstition that the use of such medicine is very harmful.

Those physicians of this class who can neither read nor write, however, are mostly "fakes" and "quacks," who, for some reason or other, have left the profession or business in which they were formerly engaged (for most of this class of physicians are those who take up the profession when they have failed in every other profession or enterprise), and have taken up the medical profession without knowing the first thing about the science of medicine. As there are no medical laws in Persia, these so-called "quacks" find a good chance to carry their own wishes through without there being anybody to suppress them. Fortunately, however, there are not very many of them to be found in cities, for they usually prefer the villages and small towns, and travel from place to place the year round.

Those who practice according to both the modern and the old schools are, as a rule, cultured Persians, who have a thorough knowledge of medicine according to Abu-Seena and Sadudie of the old Oriental school of medicine. In addition to this, they have a pretty fair knowledge of chemistry, of drugs, of physiology, and of anatomy, according to the modern school. They are, as a rule, intensely interested in the modern science of medical practice, and heartily welcome any knowledge or information from that source that they may be able to obtain. Physicians of this class are generally successful, because with this knowledge they are able to satisfy nearly all classes in the community in which they reside, with respect to medical practice. For instance, as the people of Persia are accustomed to the use of herbs as medicine; some of them are very superstitious as to the use of drugs. There are, on the other hand, others, mostly educated people, who prefer drugs and do not use herbs. Now, these physicians are so situated that they can satisfy both classes, a thing which naturally makes them very successful.

Those who practice according to the modern school exclusively are, for the most part, native doctors who have received their medical training in either France, England, Germany, Belgium, or Russia. A number of native students are being sent to foreign countries by the government every year, while there are other young men who go independently. Besides the native doctors, there are several European physicians who practice in the large cities, like Ispaham, Teheran, Tabriz, and Hammadan. Some of these are Christian missionaries who usually stay one in each city and give free medical aid to the poor.

For physicians of the last class there seems to be a great demand. Of late they have been greatly encouraged by the government in every possible way, so much so, in fact, that now most of the young men who graduate from the Royal Polytechnic College, or the "Dar-al-Funun," at Teheran, choose medicine as their profession. After studying in the college of medicine of the Royal Polytechnic for a few years, they go to Europe to finish their studies. I imagine that in no other country is there such a great field for the young medical practitioner as in Persia. Aside from the fact that he is well received and has as good a practice as he may desire, the physician of this class is looked on as a very distinguished person. The old system is gradually but surely losing its hold on the people of Persia, and the modern system is taking its place very rapidly. The ignorant class of physicians is being ignored more and more, while those who have had a modern medical education will find the government and the people ready and willing to encourage and aid them in every way.

Medical Men Deserving of Fame.—Among the great men who have influenced American life for good and who have advanced the cause of civilization, says *American Medicine*, there can be no doubt with the considerate that medicine has furnished as many as any other calling or profession.

Force Expended in Propelling a Bicycle.—Zuntz and others have been studying this subject by towing, with an automobile, a bicycle and its rider, with a dynamometer interposed on the tow-line. Among the points learned is that only about 28 per cent. of the total force expended in riding a bicycle is used in propelling it. Their report is published in the *Archiv. f. Physiologie*, 1904, supplement, summarized in the *Munch. med. Wochft.*, No. 22.

Pernicious Malaria.—C. M. Garcia of Vera Cruz reported at the recent first national medical congress at Havana a case diagnosed as pernicious malaria in a 9 months babe. The symptoms suggested meningitis or apoplexy and had developed suddenly. Respiration was rapid and superficial, but regular, and there were no convulsions, but there was total unconsciousness and insensibility, slightly subnormal temperature and filiform pulse of about 130. He injected 1 gm. (15 grains) of quinin dihydrochlorid subcutaneously, with two liters of hot physiologic salt solution, by the rectum. The child was further packed with cloths wrung out of hot water, with cold water to the head. Improvement was observed in a few minutes and recovery was complete in a few days.

Sleeping Sickness and Thyroid Treatment.—The *Berliner klin. Wochft.* for May 29 quotes Lorand of Carlsbad, calling attention to the many points of resemblance between sleeping sickness and myxedema. Both occur after a preceding infectious disease, and both exhibit symptoms indicating inadequate thyroid functioning. In sleeping sickness they are evidently the expression of pathologic changes in the thyroid gland resulting from the preceding trypanosomiasis, and, like those of myxedema, they may not become manifest until years afterward. His success with thyroid treatment in the case of an army officer returned from the Congo confirmed his assumption that sleeping sickness is due to defective thyroid function. With excessive functioning there is insomnia, but when the thyroid is insufficient the tendency is to drowsiness. The serum of thyroidectomized animals has a direct sleep-inducing action.

Standard of Robustness.—A French army surgeon named Pignet determines the comparative general health and resisting capacity by the relations between the height, chest measure and weight. The sum of the chest measure in centimeters added to the weight in kilograms is subtracted from the height in centimeters. For instance, a man 169 centimeters tall, with a chest measure of 73 centimeters and weighing 83 kilograms, would have a coefficient of robustness equivalent to $169 - (73 + 82) = 14$. The smaller the figure the more vigorous the constitution. When the subtrahend is from 10 to 20 the condition may be regarded as extremely vigorous to fair; from 21 to 25, moderate; from 26 to 30 as weak; from 31 to 35 as very weak, and over 35 as indicating an extremely weak constitution. The chest measure is taken along the upper margin of the pectoralis major during the pause in respiration, the arms relaxed and pendent. The application of this standard to recruits and in life insurance examinations has afforded very valuable information at times.

How a Cholera Epidemic Was Started.—Major Sykes, British consul at Kerman, Persia, in a letter to the London *Lancet*, gives an interesting account of the origin of an epidemic of cholera. A pilgrim returned from Meshed and died from cholera a few miles out of Kerman. His body was washed in running water (a Mohammedan custom) and his clothes were sent into Kerman and sold, thus starting the epidemic. The entire Persian official community ran away, followed by every one who could procure a mount, and as a result the villages were immediately affected. Business was at an utter standstill, and the only bright side, Major Sykes states, was the heroic labors of the medical men of the Church Missionary Society who fought the epidemic single-handed. Fortunately, the cold weather was near, and by the end of December, after having run its course for about two months, with a loss of life aggregating perhaps 500, the epidemic ceased. Two salient points were brought out—viz., the necessity of providing properly trained Persian physicians and the equal necessity of training the people to obey a few simple regulations for the preservation of their health.

New Way of Protecting Against X-Ray Injury.—J. Bergonié presented a communication to the Paris *Académie des Sciences*, at the meeting of June 5, in which he described his method of protecting the operator and aids against injury in *x*-ray work. The ordinary protective measures modify the electric field or incommode the movements of the operator. These drawbacks can be avoided and perfect protection be accorded by keeping the operator above the plane corresponding to the extension of the anti-cathode, while the patient is below this plane. The space is in reality divided into two strata, the upper one being entirely free from the action of the *x*-rays. Sensitized plates can even be handled openly in the upper stratum without feeling the effects of the rays. The method is not applicable to radioscopy, but for radiography or radiotherapy, it has proved very satisfactory in six months' experience. All that is necessary is to have the plane of the bed or table on which the patient lies very low, scarcely raised at all above the floor.

Mechanism of Digestion in Stomach.—P. Grützner has an article on this subject in the last volume of *Pflüger's Archiv.*, cvi, page 463, epitomized in the *Münch. med. Wochft.*, No. 22. Frogs and crabs, rats, guinea-pigs, rabbits and dogs were fed with variously stained food, the different portions being stained different colors. A few hours afterward the stomach was taken out whole, frozen and then cut in sections. The variously colored portions of the food were not mixed together, but were found in sharply defined strata, the portion last taken being in the center of the stomach content. This allows the digestion of starch to continue, as there has been no contact with the secretions of the gastric wall. The central portion does not feel the influence of these secretions until the portions below it have been mixed with gastric juice and evacuated. Ingested fluid is rapidly passed along through the lesser curvature and out of the stomach. These facts deserve consideration in examining portions of stomach content obtained with the stomach tube.

New Journals.—*Surgery, Gynecology and Obstetrics* is a new international monthly magazine, edited by Drs. Franklin H. Martin and Allen B. Kanavel, Chicago. The list of men on the editorial staff and among the collaborators leaves nothing to be desired as far as standing is concerned. The first issue is well illustrated, contains several interesting articles, many well-selected abstracts and representative society reports. The editors in their salutatory recognize the fact that they are entering a field of medical journalism in which there are already many creditable journals, and take the radical stand that not one of the members of the editorial staff "will be satisfied if the journal does not take immediately a prominent place in the world of medical journalism and ultimately a leading position. They each realize that there is no call for another ordinary surgical journal, and that if they do not succeed in making this a journal far beyond the ordinary, there is no reason for its existence." It is gratifying to have the assurance that another mediocre journal is not intended, and we wish the new journal success. Its first number presents an excellent appearance in style and arrangement. The magazine ought to succeed. We regret to see in the advertising pages some of the worst nostrums that are being exploited to our profession. Is it possible that the publishers can not get along without the support of nostrum mongers? ——The *Wyandotte County Medical Journal* makes its first appearance as the official organ of the Wyandotte County Medical Society, and is issued at Kansas City, Kan. It contains several original articles, some pointed brief editorials and some news matter. Its aim is a modest one, as expressed by the editors. They propose simply to supply a medical publication which they feel is needed, and announce their willingness to retire when that need ceases. The typographical appearance is very good.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

POWER OF THE COUNTY SOCIETY.

Port Richmond, N. Y., June 23, 1905.

To the Editor: Can our local society dismiss us from the society for doing lodge or contract work? If we were dismissed from our local society what would be the effect in other societies, such as New York State Medical Association, or the American Medical Association? Has it been settled that contract lodge work or family work is non-ethical?

N. A. Chapman, M.D.

Answer.—Each county society has the right to determine what, within its jurisdiction, constitutes or does not constitute "unprofessional conduct." Of course, then, each county society has the power to decide who may or who may not be elected or remain members. These autonomous rights, however, under the general organization, are qualified by restrictions in the interest of justice and of comprehensive organization. A physician may not be debarred from the organization except it be shown that in some respect he is unfit for association with his fellows. In determining the facts of an individual case, the physician who is refused membership or who is expelled has the right of appeal, so that mere local prejudices alone may never suffice to place on him the ban of ostracism. It is clear that a county society has the right to declare that contract or lodge practice constitutes unprofessional conduct, but its action in so doing, as well as in carrying into effect such a provision, is subject to review and adjudication by the state association of which it forms a component part. As to whether contract practice in every form is unprofessional conduct is a problem that the profession yet regards as sub-judice. In a case such as mentioned by our correspondent, the aggrieved party has a right to ask a full hearing by the state association. Dismissal from the county medical society of the county in which one lives, under the present generally adopted mode of organization, carries with it disability for membership in the state medical association and in the American Medical Association. The definition, limits, and ethics of lodge and contract practice have yet to be decided by the profession, though in most forms now existent such practice is regarded by the best professional opinion as decidedly reprehensible.

FORMIC ACID AND THE FORMATES IN THERAPEUTICS.

Arrington, Va., June 21, 1905.

To the Editor:—Can you tell me through your columns the results of the experiments made with formic acid, the therapeutic use of the formates or where they may be secured.

John W. Crongan.

Answer.—We know little of which we can speak with authority, although we have seen many sensational reports in the newspapers, purporting to be cablegrams from Europe. Dr. Clement, of Lyons, France, called attention last year to the stimulating action of formic acid on the muscular system. The drug is an old one, and Huchard, in a later communication to the Paris Académie de Médecine, March 14, 1905, traced its history through various pharmacopeias of past centuries, and related a number of experiences in regard to what he called its remarkable tonic action on the muscular system. He asserted that persons taking it are said to feel invigorated and to be able to perform feats of endurance without fatigue, the effect being felt for even a week afterward, and fatigued muscles rapidly recuperating under its influence. Huchard claimed to have used it in various forms of debility, with good effect, as he related in detail. He said that his experiences confirmed those reported by Clement. He declared that after taking 15 gm. of sodium formate in five days the ergograph showed that his muscular force had increased from 8 kilograms, 750, to 30 kilograms, 650, almost quadrupling in less than six days. He said further that the drug has also a diuretic action, while it is not toxic. As much as 60 gm. of sodium formate were required to kill a dog of medium size. Clement has been taking the drug himself for twenty months, without ill effects. The formic acid is usually given in the form of a formate, made by saturating the acid with carbonates or oxids. Sodium formate is soluble and deliquescent. It is given in 2 or 3 gm. doses daily for a week. The dose of formic acid is about 2 gm., diluted and neutralized with 4 gm. of sodium bicarbonate. The taste is rather disagreeable, and sodium formate is preferable. The other formates are less soluble. Sodium formate is made by Merck & Co., and may be purchased from any wholesale drug house.

NEW TECHNIC FOR CIRCUMCISION.

Birmingham, Ala., June 26, 1905.

To the Editor: In The Journal, June 17, 1905, p. 1949, Dr. M. E. Gardner, writing from Ancon, Canal Zone, describes a method of circumcision and asks whether or not it has been described before. What is practically the same operation was described by Dr. Walter C. Klotz, at that time, October, 1902, assistant surgeon to Roosevelt Hospital, New York City, in the *New York Medical Journal*, Vol. LXXVI., No. 14, p. 575. The operation described by Dr. Klotz, however, is a better one than that described by Dr. Gardner, for this reason: The cuff of skin is removed nearer the corona, and thus is formed of the very tissue which we are endeavoring to be rid of, viz., the constricting prepuce. It thus meets, also, the objection you cited in your reply to Dr. Gardner.

As stated, both by you and by Dr. Klotz, the operation is not adapted to children.

J. M. Lowery, M.D.

State Boards of Registration

COMING EXAMINATIONS.

State Medical Board of the Arkansas Medical Society, Little Rock, July 11. Secretary, J. P. Runyan, Little Rock.

Rhode Island State Board of Health, State House at Providence, commencing at 9 a. m., July 11. Secretary, G. T. Swarts, State House, Providence.

Wisconsin Board of Medical Examiners, Park Hotel, Madison, Wis., July 11. Secretary, F. A. Forsbeck, Milwaukee.

State of Connecticut Medical Examining Board, City Hall, New Haven, Conn., July 11-12. Secretary, C. A. Tuttle, New Haven.

Maine Board of Registration of Medicine, State House, Augusta, Maine, July 11-12. Secretary, Wm. J. Maybury, Saco.

Board of Registration in Medicine, State House, Boston, Mass., July 11-12. Secretary, E. B. Harvey, Boston.

Vermont State Board of Medical Registration, Y. M. C. A. Hall, Burlington, Vt., July 11-12-13. Secretary, W. Scott May, Underhill.

Kansas State Board of Medical Registration and Examiners, State House, Topeka, Kan., July 12-13. Secretary, G. F. Johnston, Lakin.

South Dakota Board of Medical Examiners, Sioux Falls, S. Dak., July 12-13. Secretary, H. E. McNutt, Aberdeen.

Board of Medical Supervisors, Washington, D. C., July 13. Secretary, Wm. C. Woodward, Health Department, Washington.

California State Board of Medical Examiners, San Francisco and Los Angeles, Cal., July 19. Secretary, C. L. Tisdale, San Francisco.

State Board of Health of West Virginia, Charleston, W. Va., July 18-20. Secretary, H. A. Barbee, Point Pleasant.

State Board of Health of Illinois, the Great Northern Hotel, Chicago, July 19-21. Secretary, J. A. Eagan, Springfield.

Indiana May Report.—Dr. W. T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports the written examination held at Indianapolis, May 2-4, 1905. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, equivalent to 75. The total number examined was 182, of whom 138 passed, including 30 osteopaths, and 44 failed, including 8 osteopaths. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Medical College of Indiana	(1905)	78.28, 82.69, 81.98, 81.1, 80. 78, 77.94, 83.41. 87,21, 84.91, 75.04, 83.59, 82.7, 75.2, 86.6, 79.35, 78.56, 84.44, 87.85, 83.09, 85.76, 80.62, 80.25, 81.6, 76.86, 89.48, 83.16, 77.46, 75.23, 79.21, 83.05, 84.94, 75.85, 86.99, 84.61, 77.16, 75.56, 78.6,, 83.04, 78.61, 83.55, 87.37, 79.11, 80.93, 79.2, 78.21, 79.73, 82.57, 82.51, 85.2, 77.13, 85.5, 81.38, 75.6, 82.58, 83.19, 84.22, 85.1, 81.45, 86.35. 75.93, 80.1, 82.12, 80.76, 79.15.
Central College of P. & S., Indianapolis	(1905)	70.87, 63.47, 72.3, 84.2, 76.3, 83.92, 85.84, 79.84, 79.29, 80.92, 83.48, 76.02, 86.5, 79.98, 79.93, 78.29, 86.55, 80.94, 84.15
Eclectic Med. Coll. of Indiana	(1905)	75.1 80.46
Physio-Medical Coll. of Indiana	(1905)	75.22
Fort Wayne Coll. of Med.	(1905)	75.84, 81.42, 81.93, 82.13, 77.65, 79.24, 80.57, 79.5
Tulane University	(1892)	84.17
Louisville Med. Coll.	(1898)	76.96
Illinois Med. Coll	(1905)	83.85
Eclectic Med. Inst., Cincinnati	(1905)	75.32
Kentucky School of Med	(1904)	77.83
Univ. and Bellevue Hosp. Med. Coll	(1903)	86.7
University of Louisville	(1905)	79.55
University of Michigan	(1904)	85.65
Rush Med. Coll	(1900) (1903)	85.02; 89.4
College of P. & S., Chicago	(1902) (1903)	85.06; 77.17
Univ. of Michigan Homeo. Med Dept	(1902)	76.9
Cornell University	(1904)	86.45

FAILED.

College.	Year Grad.	Per Cent.
Medical College of Indiana	(1904) (1905)	68.69*; 74.5, 74.07, 73.95, 60.55, 73.7, 68.67, 72.29, 65.28, 70.68, 73.88, 73.5
Central College of P. & S., Indianapolis	(1905)	70.87, 63.47, 72.3, 64.14
Physio-Medical Coll. of Indiana	(1905)	69.3, 67.43, 67.13
Eclectic Med Inst., Cincinnati	(1905) (1903)	73.85, 69.15, 73.35; 59.48**
Hospital Coll. of Med., Louisville	(1904)	47.6†, 67.09*, 66.25*

Louisville Med. Coll.	(1905)	67.5, 73.69
University of Louisville	(1905)	72.65
Tennessee Med. Coll.	(1899)	65.72
Columbia Univ., New York	(1900)	72.46
Illinois Med. Coll.	(1905)	74.85
University of Kentucky	(1904)	61.5*
Eclectic Med. Coll. of Indiana	(1905)	68.5
Fort Wayne Coll. of Med.	(1905)	65.33, 74.65

The general average attained by all representatives of the Medical College of Indiana who passed was 79.92; of the Central College of P. & S. of Indianapolis, 81.05; of Fort Wayne College of Medicine, 78.61.

* Third examination.

** Fourth examination.

† Second examination.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medcial officers, U. S. Army, week ending July 1, 1905.

Bratton, Thos. S., asst.-surgeon, since June 22, 1905, in temporary charge of C. S. O., Department of the Lakes, Chicago.

Heizmann, C. L., asst.-surgeon general,granted two months' leave of absence.

Girard, Jos. B., asst.-surgeon general, on arrival at San Francisco, will report to commanding officer, Army General Hospital, Presidio of San Francisco, for observation and treatment.

Darnall, Carl R., asst. surgeon, granted thirty days' leave of absence.

Gibson, Robert J., surgeon, left Fort Logan, Colo., on thirty days' leave, with permission to apply for three months' extension.

LeWald, Leon T., asst.-surgeon, leave of absence extended fourteen days.

Ford, Clyde S., asst.-surgeon, granted two months' leave of absence, to take effect July 1, 1905.

Smart, Robert, asst.-surgeon, ordered to proceed from Fort Myer, Va., to Fort Washington, Md., for temporary duty.

Jones, Percy L., asst.-surgeon, granted twenty days' leave of absence.

Ruffner, E. L., asst.-surgeon, left Columbus Barracks, Ohio, with reecruits to Fort Lawton, Wash.

Jones, Percy L., asst.-surgeon, advanced to rank of captain.

Krebs, Lloyd LeRoy, asst.-surgeon, reported for temporary duty at Presidio of Monterey, Cal.

Greenleaf, H. S., asst.-surgeon, left from temporary duty at Fort Armistead, Md., on ten days' leave of absence.

Wall, Francis M., contract surgeon, returned to Fort Oglethorpe, Ga., from leave of absence.

Gardner, Fletcher, contract surgeon, recently arrived at San Francisco, from the Philippines, ordered to accompany the Twenty-third Infantry to Madison Barracks, N. Y., before availing himself of three months' leave of absence.

de Quevedo, Luis G., contract surgeon, relieved from duty at Henry Barracks, P. R., and ordered to San Juan, P. R., for duty.

George, William R. S., contract surgeon, relieved from duty in Porto Rico, and ordered to New York City for instructions.

Thorp, Charles W., contract surgeon, ordered from Fort Ethan Allen, Vt., to Plattsburg Barracks, N. Y., for temporary duty with the Fifth Infantry.

Sievers, Robert E., contract surgeon, arrived at Fort Yellowstone, Wyo., for temporary duty in the Yellowstone National Park.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending June 28, 1905.

Carrington, P. M., surgeon, department letter of April 13, 1905, granting leave of absence from May 2, 1905, amended to read one month and nine days.

Clark, Taliaferro, P. A. surgeon, granted leave of absence for one month, from July 7.

Goldberger, Jos., P. A. surgeon, to proceed to Grafton and Morgantown, W. Va., for special temporary duty.

Earle, B. H., asst. surgeon, granted leave of absence for seven days from June 25.

Steger, E. M., asst.-surgeon, relieved from duty at New Orleans, and directed to proceed to Philadelphia for temporary duty.

Gray, R. H., acting asst.-surgeon, granted leave of absence for thirty days, from July 6.

Keatley, H. W., acting asst.-surgeon, granted leave of absence for seven days, from June 14, under paragraph 210 of the regulations.

Owen, H., acting asst.-surgeon, granted leave of absence for thirty days, from July 3.

Sinks, E. D., acting asst.-surgeon, granted leave of absence for twenty-one days, from July 7.

Ryder, L. W., pharmacist, granted leave of absence for seven days, from June 26.

Hall, L. P., pharmacist, granted leave of absence for thirty days from July 10.

Stier, C., pharmacist, to report to chairman, board of examiners, to determine his fitness for promotion to the grade of pharmacist of the second class.

BOARDS CONVENED.

Board to meet at Washington, D. C., June 27, 1905, for the physical examination of candidates for cadets in the Revenue Cutter Service. Detail for the board: Assistant Surgeon, J. W. Trask, chairman; Assistant Surgeon H. McG., Robertson, recorder.

Board to meet on the Revenue Steamer *McCulloch*, Portland, Ore., July 8, 1905, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Assistant Surgeon B. H. Earle, chairman; Acting Assistant Surgeon C. H. Wheeler, recorder.

Board to meet at Key West, Fla., July 3, 1905, for the examination of Pharmacist C. Stier to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the board: Surgeon C. E. Banks, chairman; Acting Assistant Surgeon, S. D. W. Light, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the period from June 24 to June 30, 1905:

SMALLPOX—UNITED STATES.

Illinois: Danville, June 17-26, 2 cases.

Indiana: Southbend, June 17-24, 4 cases, 2 deaths.

Louisiana: New Orleans, June 17-24, 6 cases, 2 imported.

Michigan: Grand Rapids, June 17-24, 7 cases, 4 deaths.

Missouri: St. Joseph, June 17-24, 6 cases; St. Louis, 2 cases, 1 death.

New Jersey: Newark, June 18-25, 1 case.

South Carolina: Charleston, June 10-17, 2 cases.

Wisconsin: Appleton, June 17-24, 6 cases; La Crosse, 1 case; Milwaukee, June 10-17, 1 case.

SMALLPOX—INSULAR.

Philippine Islands: Manila: May 13-20, 2 cases.

SMALLPOX—FOREIGN.

Brazil: Pernambuco, May 8-16, 223 deaths.

Canada: Winnipeg, June 10-17, 2 cases.

China: Hongkong, April 22-29, 8 cases, 2 deaths; Shanghai, May 6-13, 1 case.

Colombia: Cartagena, June 3-10, 1 case 1 death.

Denmark: Copenhagen, June 3-10, 1 case.

Ecuador: Guayaquil, May 31-June 6, 1 death.

France: Paris, May 27-June 10, 46 cases, 4 deaths.

Germany: Bremen, June 3-10, 2 cases.

Great Britain: Bristol, June 3-10, 1 case; Edinburgh, 1 case; London, 3 cases; New Castle-on-Tyne, 1 case; Nottingham, May 27-June 3, 1 case; South Shields, June 3-10, 1 case.

India: Bombay, May 16-23, 34 deaths; Calcutta, May 13-27, 14 deaths; Karachi, May 14-21, 2 cases, 2 deaths; Madras, May 13-19, 2 deaths.

Italy: Catania, June 8-15, 3 cases.

Mexico: Mexico City, June 10-17, 6 cases, 4 deaths.

Russia: Odessa, June 3-10, 8 cases, 3 deaths; St. Petersurg, May 27-June 3, 10 cases, 3 deaths.

Turkey: Constantinople, May 20-June 10, 6 deaths.

Uruguay: Montevideo, April 1-31, 4 deaths.

YELLOW FEVER—FOREIGN.

British Honduras: Belize, May 25-June 15, 5 cases, 4 deaths.

Ecuador: Guayaquil, May 31-June 6, 12 deaths.

Guatemala: Livingston, June 10, 1 case.

Honduras: Puerto Cortez, May 25-June 15, 18 cases, 8 deaths.

Mexico: Coatzacoalcos, June 11-17, 1 death; Sierra Blanca, 2 cases, 3 deaths.

Panama: Colon, Jan. 23-June 16, 28 cases, 8 deaths; Panama, Jan. 1-June 16, 91 cases, 29 deaths.

CHOLERA—FOREIGN.

India: Calcutta, May 13-27, 42 deaths.

PLAGUE—INSULAR.

Hawaii: Hilo, June 24, 1 death; Honolulu, June 25, 1 death.

Philippine Islands: Cavite, May 13-20, 1 death.

PLAGUE—FOREIGN.

Arabia: Aden, May 12-26, 2 cases, 1 death.

Australia: New South Wales, Newcastle, April 22-May 6, 4 cases, 2 deaths.

Northern Rivers District: Ballina, April 25-May 6, 2 cases, 1 death; Lismore, April 29-May 6, 2 cases, 2 deaths.

India: April 29-May 6, 60,674 cases, 59,253 deaths; Bombay, May 16-23, 577 deaths; Calcutta, May 13-27, 318 deaths; Karachi, May 14-21, 119 cases, 116 deaths.

Japan: Tokyo, May 6-20, 3 cases, 3 deaths.

Panama, Panama, June 26, 1 death.

Peru: Chiclayo, May 11-31, 12 cases, 4 deaths; Lima, 5 cases, 2 deaths; Mollendo, May 11-31, 6 cases, 7 deaths.

Society Proceedings

COMING MEETINGS.

American Medical Association, Portland, Ore., July 11-14, 1905.

Amer. Assn. of Life Ins. Exam. Surgeons, Portland, Ore., July 10.
American Medical Editors' Assn., Portland, Ore., July 10.
American Urological Association, Portland, Ore., July 12-13.

CHICAGO SURGICAL AND CHICAGO MEDICAL SOCIETIES.

Joint Meeting, held June 7, 1905.

Dr. L. L. McArthur, President of the Chicago Medical Society, in the Chair.

The Biologic Aspect of Carcinoma.

Professor G. N. Calkins of Columbia University, New York City, and biologist to the State Cancer Laboratory, Buffalo, after discussing at length the nature of the various stimuli which cause abnormal proliferation in differentiated cells, mentioned studies of his own that were undertaken relative to the nature of division energy of the cells, to find out what it is that will control it, what will increase or decrease its activity, what stimuli are necessary, and what conditions of metabolism and morbidity have their effects on it. He mentioned two of the theories which have to do with the explanation of the stimulus of division energy of the carcinoma cells. First, Marchand's, which is analogous to the stimulus of the gall-producing insect poison on plant cells; and, second, the parasite hypothesis. At the State Cancer Laboratory at Buffalo they have some two hundred mice with carcinoma. The original tumor mice, which Dr. Gaylord brought from Professor Jensen's laboratory in Copenhagen, in February, 1904, died on the way from New York to Buffalo. The tumors were removed and put on ice. In three days, when mice were obtained, the tumors were transplanted into normal mice. About 40 per cent. of the transplantations took, and a large number of mice developed carcinoma. These make their appearance in from three to five or six weeks after inoculation, the tumor mice ultimately developing symptoms of cachexia, followed by death. The tumors that developed varied in size from one-third the weight of the mouse, plus the tumor to one-fifth. These tumors were transplanted from mouse to mouse nine successive times. Professor Jensen had similarly transplanted the tumors from mouse to mouse for a period of two and a half years before Dr. Gaylord brought them from his laboratory to Buffalo, so that altogether there have been, in all probability, about thirty to thirty-five generations or trasplantations of this tumor. These tumors are merely metastases from the original growth. The cells of the old tumor in each successive new environment were stimulated to grow and develop into a new tumor. According to the Marchand hypothesis, the primary stimulus which the first mouse received was a poison which originated from deranged metabolism, from malnutrition or from some other product of morbidity in the organization of the mouse. Calkins asks whether we are to assume that there is formed in every mouse morbid products which carry on the stimulus to the dividing energy of the cells. In other words, can the organism produce a toxin which acts as a continued cumulative disease factor? On the other hand, according to the parasite hypothesis, the primary tumor of the original mouse was caused by poison from some parasite. Some advocates may argue that it is an initial parasite invasion: others a continued parasite infection which carries on the primary stimulus through generations of tumors, and causing the production of a large mass of cells which represents ten to twenty times the actual weight or size of the mouse. If the latter view is correct, every epithelial cell has within itself parasites which keep on producing a stimulus to the division energy. There is absolutely no morphologic element in cancer cells, which can be interpreted as parasites, and no morphologic evidence of such parasitism. The advocates of the parasite hypothesis are forced to the conclusion that the parasite must be ultramicroscopic. Calkins does not advocate that view, which, he said, is gaining ground throughout the scientific world. Schaudinn, a very eminent parasitologist, believes in the possibility of ultramicroscopic organisms. The Pasteur Institute has practically accepted this explanation for certain diseases.

In November, 1904, the mouse tumor began to deteriorate; and the mice showed signs of natural immunity and ability to throw off disease. A great many mice spontaneously recovered. They have had altogether over a hundred and fifty cases of spontaneous recovery from true carcinoma in mice. They think the tumor material was growing physiologically old, and that it would die out and their means of experimentation would be lost. A tumor, however, was transplanted to a new strain of mice, and the virulence of the cells was restored, so that the mice died in from three to five weeks after inoculation. Dr. Clowes, chemist of the laboratory, conceived the idea that the blood from such a spontaneously cured mouse might carry immunity. He inoculated some mice having tumors of small size with the immune blood from a mouse that had spontaneously recovered. This was done in a number of cases, and six tumors disappeared by this immune serum. Experiments have shown that immunity thus acquired has been efficient up to the present time, and has carried with it protection to the mice against reinfection. The experiments have been tried subsequently in a slightly different form. In one such experiment, for example, forty-five mice from the same source were taken; twenty-three of them were treated with cancer mush plus the immune serum from the mice which had spontaneously recovered; and twenty-two of them were treated with cancer mush plus the normal blood of normal mice. The only difference between them, apparently, was the immune factor from cases in which the mice had spontaneously recovered. In the twenty-three mice treated with this immune serum, three developed tumors. In the twenty-two mice that were treated with normal blood, plus the serum, ten tumors developed, or about the proportion of tumors successfully produced by the inoculation method.

This, in brief, he stated, is the proposition, from a biologic point of view, of the cancer problem to-day. It is not known what causes the stimulus. It is not known that there is a parasite in cancer. It is not known that a specific poison produced in any way is the cause of carcinoma; nor is there sufficient evidence on biologic and cytologic grounds to justify the hypothesis of Farmer, Moore, Walker and Bashford. Progress, however, is being made.

DR. E. WYLLYS ANDREWS read a paper in which he discussed the past and future surgery of carcinoma.

The X-Ray Treatment of Carcinoma.

DR. WILLIAM ALLEN PUSEY emphasized the point that carcinoma tissue on the surface can with practically unvarying regularity be destroyed with *x*-rays and be replaced by healthy scar tissue. But when we come to carcinomas more deeply situated, we are not in possession of many authentic facts. He has had two cases from which he can furnish definite postmortem data. These two cases were primary carcinomas of the breast. One of these, an old woman, had a large primary carcinoma of the breast without involvement of the skin, with enlarged axillary glands, and with spinal metastasis when the treatment was begun. The patient received vigorous *x*-ray exposures, lasting about a month, with the production of a dermatitis which subsided completely before her death, about three months after the treatment began. At the postmortem examination it was found that the breast was a mass of connective tissue, without any carcinoma tissue remaining. The same is true of the axillary contents. They were converted into a mass of connective tissue without the remains of carcinoma.

In the second case there was a large primary carcinoma of the breast without involvement of the skin, and with enlargement of the axillary glands. She received vigorous treatment for six weeks, with the production of only a mild reaction. About three weeks afterward she developed an acute gastritis, from which she died. On postmortem it was found that the tumor of the breast had been converted into a small fibrous mass about the diameter of, and two-thirds the length of, an index finger. The carcinoma had been destroyed, and there remained in its place a small mass of scar tissue. In this case the axillary glands had not been affected. He believes that any epithelioma which has not metastases, and which has not deeply involved the subcutaneous tissue, may be symptomatically cured by *x*-rays. As to *x*-rays stimulating the growth of carcinoma, which they can not cure, he has seen no cases which would lend weight to this hypothesis. On the contrary, he has had many cases in which the amelioration of the condition during *x*-ray exposures was explained away by calling attention to how frequently these cases do better than is to be expected.

DISCUSSION.

DR. ARTHUR DEAN BEVAN said the first thing that impresses him in the clinical study of carcinoma is that it is primarily a local disease, limited to one point, sometimes to a few points. One sees clinically occasionally epithelioma, for instance, which, when examined carefully, shows three or four points of invasion very close together. Clinically, we see carcinoma involving occasionally both breasts. These exceptions do not, however, disprove the statement that carcinoma is primarily a local disease. A second point that impresses him clinically is, that whether carcinoma is a parasitic disease or not, its history is that of a parasitic disease. Whether the researches of the future show that it is a peculiar chemical stimulus that acts on the cells and produces these changes, or whether it is a parasite, whether it is purely chemical and independent of any low form of life, or the result of some low form of life, made no difference, as the clinical history of carcinoma remains that of a parasitic disease.

In regard to the present results of surgical treatment of carcinoma, these vary in different regions of the body, and the reports from different clinics vary widely. For instance, some surgeons who have made several hundred operations for epithelioma of the cervix, state that possibly less than 5 per cent. of these cases are permanently cured. Some men even have gone so far as to say that less than 1 per cent. of such cases are permanently cured by surgery. On the other hand, cancer of the body of the uterus furnishes a far greater proportion of permanent cures. Carcinoma of the larynx furnishes a comparatively large proportion of permanent cures; while carcinoma of the breast occupies a rather mid-position between extremely fatal carcinoma of the cervix and more favorable carcinoma of the larynx. An analysis of the different statistics of carcinoma of the breast shows that surgical treatment furnishes somewhere between 20 and possibly 30 per cent. of permanent cures.

Another point that has impressed him very much is the three-year limit. It has been taught for some time that if a patient lives beyond three years without recurrence there is little danger of such recurrence. A careful analysis of statistics will show that this is not so. Cases of carcinoma recur three and a half, four, six and even ten years after operation. There is a gradual diminution in the percentage of recurrences as the time period increases from the date of the operation.

He agrees with Dr. Pusey as to the value of the *x*-ray in epithelioma. He thinks it should not be used in cases of thick epithelioma, whether the lymphatics are involved or not. Superficial epithelioma is the form in which the *x*-ray is particularly of value.

There are two great dangers from the use of the *x*-ray. One is that it will produce serious burns in the hands of men who are not experienced in its use. The other is that it will do positive damage when it is used in a case where a surgical operation, if employed sufficiently early, will hold out a good hope of permanent cure, but where delay produced by the use of the *x*-ray wastes valuable opportunity and lessens the chances of permanent cure.

AMERICAN PROCTOLOGIC SOCIETY.

Seventh Annual Meeting, held at Pittsburg, May 5, 1905.

The President, Dr. J. R. Pennington, Chicago, in the Chair.

The Prevalent Neglect of Proctology.

Dr. Pennington, in his address as president, referred to the adverse criticism which the organization and continued prosperity of this society had provoked in certain quarters. He showed that its existence was a logical and necessary step of progress. Special societies arise by a process of natural differentiation. This differentiation, which is unavoidable, by organization of the resulting groups, makes possible a greater definiteness of structure and function of the medical profession. Special organizations have multiplied more rapidly in the past thirty years than during any previous period, and likewise the advancement in the science of medicine has been greater during the same period. The subject of proctology had been neglected in the past until the charlatan claimed it as his special field, and the profession seems still to be doing much to support the claim. Of the sixty-six institutions belonging to the Association of American Medical Colleges, only eight make any provision for teaching proctology. This association adopted a curriculum consisting of 27 subjects. This extensive course provides for thirty hours to be given each to medical jurisprudence, dietetics, hygiene and public health; sixty hours each to nose and throat and genito-urinary diseases, and one hundred and sixty hours to gynecology. No reference whatever is made to the subject of rectal diseases.

It may be claimed by schools that do not include proctology in their curricula that the chair of general surgery devotes a certain number of hours to these diseases. If so, why are there so many reputable physicians in this country who have never heard a lecture on rectal diseases nor witnessed an ano-rectal examination or operation? Dr. Pennington concluded that there is a distinct need for this society, viz., the reclamation of this specialty for ethical medicine, and that the society will exist, prosper and grow in influence in proportion as it meets this need.

Malignant Disease of the Rectum and Its Treatment.

Dr. G. B. Evans, Dayton, Ohio, prefaced his remarks with a plea for thorough examination of all cases complaining of rectal symptoms. Many cases of uterine cancer have been termed "change of life," and very many cases of rectal cancer "piles," because of neglect of this precaution. It is the consensus of opinion that cancer is at first purely local and that early recognition and thorough extirpation will cure a large proportion of all cases. Formerly Evans was an advocate of colostomy in these cases, but he now believes that this procedure should be reserved for these cases which have advanced so far as to render the radical operation hopeless. The only contraindication he would recognize as absolute is fixation of the rectum by extension of the growth to adjacent structures. The perineal and combined abdominal and perineal routes were recommended.

"The Ambulant Treatment of Internal Hemorrhoids."

Dr. F. C. Martin, Philadelphia, strongly defended the injection method. His technic consists of the injection of 7 to 10 minims of a 50 per cent. solution of phenol into each pile tumor at intervals of from two to seven days, depending on the effect produced. As a preliminary to beginning the injection, he recommends divulsion of the sphincters under nitrous oxid anesthesia, much of his success with the method being attributed to this procedure. He concluded that there are not more than 15 per cent. of recurrences, and that accidents and complications are by no means so frequent as after the ligature and clamp and cautery operations. In addition, the method is practically painless and the patient is not detained from business.

Fecal Impaction of the Rectum.

Dr. T. C. Martin, Cleveland, emphasized the value of the proctoscope for treatment as well as diagnosis. One of the cases reported was of special interest in that the cause was found to have been a ventral fixation of the uterus in which the rectum, by means of the utero-sacral ligaments, had been anchored so immovably that the patient could no longer "bear down" effectually.

Urethro-Rectal Fistula.

Dr. W. M. Beach, Pittsburg, after citing a number of cases and describing his method of treatment, drew the following conclusions: 1. Urethro-rectal fistula is comparatively rare and very easily overlooked. When in doubt, use the permanganate test. 2. It generally follows prostatic abscess of gonorrheal origin. 3. It may result from traumatism—faulty use of sound, lithotomy, etc. 4. This is one type of fistula which demands suturing. The suture material should be No. 3 forty-day catgut. 5. The care of the wound should never be left to an assistant; no one can possibly know as much about it as he who made it. 6. A certain number of cases of recent urethral origin will heal spontaneously where the stricture is relieved.

Pruritus Ani and Its Local Treatment.

Dr. Lewis H. Adler, Philadelphia, said the male sex is affected in about 95 per cent. of cases. In nearly all the cases the patients are more or less neurotic and of a decidedly bilious temperament. The cases demand the removal of all exciting causes, and regulation of habits of life should precede and attend local treatment. The latter consists in the daily injection into the cavity of the rectum of from 1 to 2½ drams of the following mixture:

℞.	Ext. hamamelis fld.	℥j	32
	Ext. ergot fld	ʒii	8
	Ext. of hydrastis fld	ʒii	8
	Tr. benzoin comp	ʒii	8

If the peri-anal skin is dry and tough, the entire surface should be painted with a concentrated solution of silver nitrate (960 grains to the ounce). This may require repetition several times at intervals of a few days to restore the skin to normal. After this is accomplished, full strength citrine ointment is to be applied and renewed daily for the first two or three weeks, and thereafter on alternate days or twice a week. This method of treatment may extend over a period of six months, or even longer.

The Operative Treatment of Tuberculous Rectal Fistula in the Tuberculous.

Dr. J. Coles Brick, Philadelphia, said that the frequent association of rectal fistula and phthisis has long been recognized. Some authors claim that 5 per cent. of consumptives develop fistula, and Hartman found that of 48 cases of fistula 23 were positively tuberculous. In Brick's opinion the irritating effects of the ether are often responsible for the onset of pulmonary symptoms. For this reason he employs nitrous oxid and oxygen when a general anesthetic is demanded. All raw surfaces are seared with the hot iron. When the case is extensive it is better to perform the operation in stages so as to minimize the period of confinement to bed. Special stress was laid on the after-mangement of these cases. The patient should be kept in bed as little time as possible, but no active exercise is allowed until weight has returned to normal. Forced feeding and out-door air are recommended, and daily sponging with tepid or, if the patient's vitality is sufficient, with cold water, is of great value. A weekly gain of weight is the only standard of favorable progress. Brick advised that all fistula patients be carefully examined for local and pulmonary tuberculosis, and even though the examination be negative, that every case be treated as though tuberculosis were likely to develop.

Personal Experience in the Employment of Mechanical Vibration in the Treatment of Rectal Diseases.

Dr. W. L. Dickinson, Saginaw, concluded that this is a valuable method of treatment and deserving of more general use by the proctologist. A number of instances were recounted in which it has been successfully used for the relief of fissures and to accomplish dilatation of the sphincters. But the author thought that its greatest field of usefulness was in the treatment of chronic constipation. He gave the technic of its application in such cases.

The Office Treatment of Rectal Diseases and Its Limitations.

Dr. James P. Tuttle, New York, said the trend of practice in rectal diseases at the present day is threefold: (1) Toward a more general resort to operative measures. (2) Toward a wider application of local anesthesia. (3) Toward a great increase in office treatment. These tendencies are due to the following facts: First, the public as well as the profession has learned that non-operative measures can not be relied on for permanent cures. Second, dread of general anesthesia has greatly diminished, due chiefly to improved methods in the use of ethyl chlorid and nitrous oxid, alone or as adjuvants to ether. Third, dissemination of the knowledge that most of the minor rectal surgery can be done under cocain or other local anesthetic with as little pain and almost as little detention from business as is occasioned by the non-operative measures which give only temporary and uncertain relief. Fourth, local anesthesia is being more generally adopted because it is safer, can be quickly applied, simplifies the work, and at the same time, if properly used, permits of as thorough work as general anesthesia. Cocain, eucain, stovain, in 1 per cent. solution, and sterile water, are all reliable local anesthetic agents. Stretching of the sphincter has heretofore been the most difficult thing to accomplish under local anesthesia, but Tuttle referred to a method he had devised, making it possible to operate painlessly on hemorrhoids, fissures, small fistulas, ulcerations, tumors low down and even low strictures. He considers certain conditions requisite: (1) Asepsis; (2) careful selection of cases; (3) complicated and plastic operations not to be undertaken; (4) when general anesthesia is necessary it is better to have patient at home or in the hospital, even though it may be possible to do the work in the office.

A Contribution to the Pathology of External Piles.

An abstract of the paper of Dr. J. L. Krouse, Cincinnati, is published in this issues of The Journal, page 134.

Summary of Twenty-five Radical Operations on the Rectum Under Local (Sterile Water) Anesthesia.

Dr. A. B. Cooke, Nashville, cited 25 operations: Internal hemorrhoids, 15; prolapsus ani, 2; anal fissure, 2; external hemorrhoids, 6. From this series of cases he drew the following conclusions: The method is simple, safe and effective. Pain at the time of operation is exceptional. Postoperative pain is far less than after the old methods. Time of detention from business is reduced more than half. It offers a reliable means of extending the benefits of surgery to a large class of cases which would otherwise be unsuitable for operation. It robs these operations of their terrors.

Officers Elected.

President, Dr. Lewis H. Adler, Jr., Philadelphia; vice-president, Dr. George B. Evans, Dayton; secretary-treasurer, Dr. A. B. Cooke, Nashville. Executive Council, Drs. J. R. Pennington, Chicago, chairman; T. C. Martin, Cleveland, W. M. Beach, Pittsburg.

Time and place of meeting for 1906 were left to be determined by the council later.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Treatment of Dyspepsia of Functional Origin.

All cases of functional dyspepsia may be placed under two heads, according to Dr. Williams in the *Clinical Jour.*, London—those in which the hydrochloric acid is deficient and those in which it is excessive. The cause is the same in both, that is, the retention of food in the stomach long after that organ should have finished with it. The line of treatment which, if successful at all, is equally successful in both, is the practice of giving alkalies before meals. The author refutes the old theory that alkalies given before meals tend to increase the flow of gastric juice, and states that instead of promoting its flow the secretion of hydrochloric acid and pepsin is retarded by the use of alkalies before meals. He explains the action and efficacy of alkalies before meals in that they remove the sticky mucus which has been thrown out and which has occluded the secreting glands, and thus, after the fashion of lavage, they cleanse the stomach and permit it to get rid of the residue that has been left from the last meal and makes it a better receptacle for the next. Consequently, from this standpoint of reasoning, it matters not which of the forms of dyspepsia be present, because in both undesirable matters will be removed. If it is desirable to perform lavage in these cases it should be done with an alkaline solution containing 30 grains of sodium bicarbonate (2.00) to a half pint of water as hot as can be borne.

In one other respect, according to this author, is it unnecessary from the viewpoint of treatment to distinguish between these two forms of dyspepsia, and that is by promoting proper elimination by the bowels. Constipation will nullify every therapeutic effort. The best initial treatment is undoubtedly calomel, as it is both a purgative and an antiseptic. The skin must be properly cared for by hot baths or hot wet pack at the beginning of the treatment. In the further treatment of these two forms of dyspepsia it should be kept in mind that medicines given before meals have the effect of washing out the stomach but exercise no influence on the secretion of gastric juice or on the digestion of food. Therefore, to treat either form of dyspepsia effectually, it is necessary to rely absolutely on the action of the medicines administered after meals.

In the treatment of that form of dyspepsia accompanied by an excess of hydrochloric acid the first thing to be done is to administer a dose of calomel—remembering that brunettes bear this preparation better than blondes—order the patient a Turkish bath, an electric light bath or an ordinary hot bath, and instruct him to take some open-air exercise daily. Warn him against wearing wool or flannel next to the skin and insist on the proper mastication of the food. The great and urgent need in such a case is an antacid, to be taken either as soon as the symptoms appear or, if possible, immediately before their onset. The most efficient antacid is the bicarbonate of sodium which is a pure and simple antacid and possesses no sedative properties. It also tends to increase the amount of gas in the stomach, and this author, therefore, prefers some preparation which is free from this objection and which is at the same time possessed of sedative properties, and he regards bismuth as capable of meeting these requirements. In answering the objections brought against this preparation he states that the disappointment has been in not using it in sufficiently large doses. The minimum dose employed by Dr. Williams is 25 grains (1.65) of subnitrate of bismuth, or the liquor bismuth ammon. citras (B. P.) in 2-dram (8.00) doses. In the administration of either some sedative should be combined with it, such as cerium oxalate or with hydrocyanic acid as is contained in the syrup of wild cherry. The subnitrate may be given in the cachet form or suspended in a mixture. In the cachet form he combines it as follows:

℞. Bismuthi subnit. ....gr. xxv 1|65
Cerii oxalatis.......................gr. x |65

M. Ft. cachet No. i. Sig.: Three times a day, as indicated, after meals.

In some cases the patient is gouty, under such circumstances 5 grains (.30) of pulverized resin of guaiac should be added to each cachet. Sodium bicarbonate may also be added. The subnitrate of bismuth should never be combined with the soda in a mixture, as decomposition takes place and carbon dioxid is evolved. If it is desirable, as stated, to give the bismuth in a liquid form, the following combination is recommended by the author:

℞. Liq. bismuthi ammon. cit. (B. P.)
Syr. pruni virg., āā...................ʒii 8|
Aquæ q. s. ad.........................℥i 30|

M. Sig.: At one dose and repeated after meals.

The syrup of wild cherry is added for its sedative effect. In order to correct a gouty condition, if present, the tincture of guaiac•ammon. dram one-half (2.00) may be added, which must be suspended in mucilage of acacia. Whether giving bismuth in liquid or in powder form, it must always be given after meals, and the length of time after the meal must depend on the size of the meal. A full meal will use up more of the acid secretion than a light meal, therefore, patients frequently suffer more after the light meal, as there is left more free acid in the stomach. It must also be remembered that the pain may not occur after a full meal, taken at night, until 4 or 5 o'clock in the morning. The sucking of alkaline lozenges is spoken of favorably on account of the combined action of the alkali and the antacid effect of the saliva. Sir William Roberts recommends the following combination:

R. Trochisci bismuthi (B. P.)

Sig.: Two or three to be dissolved in the mouth after meals.

[The foregoing lozenge contains chalk, grains three and a half (.20), and magnesium carbonate, grains two and a half (.15).]

The source of the muriatic acid present is thought to be due to the sodium chlorid, therefore, these patients should be instructed to avoid salted meats and should cut down on the amount of sodium chlorid in the food generally.

To relieve the constipation the author recommends the following:

℞. Sodii sulph........................gr. xx 1|30
Sodii bicarb.........................gr. x |65
Essentiæ menth. pip.................m. xx 1|30
Inf. gent. co. q. s. ad..................℥i 30|

M. Sig.: At one dose and repeat three times daily before meals.

The foregoing also serves as a proper cleanser of the stomach by dissolving the mucus present.

In the treatment of the asthenic form, in which there is a deficient amount of hydrochloric acid secreted by the stomach, the first indication, as stated by the author, is to supply the deficiency. Large doses must be given in order to supply this deficiency. The ordinary dose of minims 10 (.65) B. P. is not sufficiently large. The author employs as the minimum dose 25 minims (1.65) combined as follows:

℞. Acidi mur, dil....................m. xxv 2|65
Liq. strychninæ, 1 per cent..........m. v |30
Glycerol. pepsini ....ʒi 4|
Aquæ menth, pip. q. s. ad.............℥ss 15|

M. Sig.: At one dose, and repeated three times a day after food.

If necessary other preparations may be added as may be demanded, such as quinin hydrochlorate, liquor ferri chloridi, morphin muriate and liquor arsenicalis. In cases of long standing in which the element of irritation is present, the addition of 10 minims (.65) of liquor morphin hydrochlorate (B. P.) is of great value as it soothes the mucosa and enables it to tolerate the stimulating effects of the hydrochloric acid and strychnia, and in its absence in some cases causes the patient to complain of sufferings with each dose of the acid and strychnia on account of their stimulating effects. For the relief of the constipation, which is so constant in these cases, the use of the natural mineral waters is indicated. The presence of sodium chlorid is indicated in this form of dyspepsia.

The author is emphatic in saying that if the dyspepsia does not yield to one or the other of these forms of treatment then the assumption that the trouble is functional and not organic is incorrect.

Rhinitis in Infants.

The following outline of treatment, according to an abstract in *Med. News*, is recommended by M. Malherbe in the treatment of rhinitis in children: In the newborn, introduce by means of a syringe or a dropper a few drops of the following mixture:

℞. Menthol ....gr. v |30
Olei olivæ ster........................ʒx 40|

M. Sig.: A few drops to be instilled into each naris. Or:

℞. Menthol
Resorcin, āā ....gr. v |30
Olei olivæ steril.......................ʒx 40|

M. Sig.: To be dropped into the nares.

In older children emollient fumigations are of service or the following ointment:

℞. Menthol
Salol, āā ....gr. viii |50
Cocainæ hydrochlor.................gr. v |30
Lanolini
Liq. petrolati, āā.....................℥ss 15|

M. Sig. To be inserted into the nares on a small swab.

With an atomizer spray the nose with the following:

℞. Sodii bicarb.
Sodii biboratis, āā.................gr. viii |50
Aquæ dest ....℥i 30|

M. Sig.: To be used in the form of a spray.

In smaller infants all carbolic solutions must be carefully avoided.

Medicolegal

Entitled to Rebuttal Physical Examination.—The Court of Civil Appeals of Texas says, in St. Louis Southwestern Railway Co. of Texas vs. Smith, a personal injury case brought by the latter party, that it is inclined to the opinion that if the plaintiff exhibited his eye to the jury, and his physician then and there undertook, while testifying, to point out the injury to his eye, the defendant company was entitled in rebuttal thereof to call medical experts of its own selection to in like manner examine the eye, and to give in testimony their opinion as a result of such examination.

Possession of X-Ray Machines—Defenses of Physicians.—The Supreme Court of Oregon says that in the malpractice case of Beadle vs. Paine, brought to recover for the alleged negligent treatment of a fractured arm, a physician was asked on his examination in chief if there was not an *x*-ray machine in the city where the treatment was given, to which he answered that a certain physician had one. To push the inquiry on cross-examination to the extent of ascertaining whether it was usual in that locality for every surgeon to have a machine of the kind, or whether the one possessed by the physician referred to was the only one to be found in that locality, the court says, was not without the scope of reasonable inquiry. It was germane to the subject entered on by the plaintiff and altogether relevant. It is a good defense in an action for malpractice, where the physician or suregon is charged with negligence or the non-observance of proper care or the want of skill in performing the services undertaken, the court says, that the patient was negligent at the time, which conduced or contributed to produce the injury complained of; but it will not suffice to defeat the action that the injured party was subsequently negligent, and thereby conduced to the aggravation of the injury primarily sustained at the hands of the physician or surgeon, and such conduct on the part of the patient is pertinent to be shown in mitigation of damages only where enhanced thereby, but not to relieve against the primary liability. Of course, if the patient refused or failed to follow the directions given him, he could not complain, the court says, if his negligence in that respect conduced to the injury. That is to say, if it prevented or retarded union or healing of the parts, for the directions were a part of the treatment prescribed, and a want of observance of them on the patient's part would defeat the action. The want of ordinary prudence on the part of the patient would be tantamount to negligence, and, if it was a contributing cause to the injury, the case would be within the rule.

A Certificate Indispensable.—The Court of Criminal Appeals of Texas says, in the case of Stone vs. State, where the plaintiff had a diploma from an institution in another state, that it appeared from a reading of Section 8 of the act of the Twenty-seventh Legislature, although one may have a diploma "issued by a *bona fide* medical college of respectable standing," still he must receive a certificate to practice medicine from one of the duly constituted boards of medical examiners of the State of Texas, which shall be recorded, before he would be authorized to practice. The court takes it, however, that it would not be necessary for the plaintiff to be examined by said board, if he had complied with the other provisions of the statute, to-wit, filed his diploma, with satisfactory evidence that his diploma was issued by a *bona fide* medical college of respectable standing, and certificate issued by the board, and properly recorded, as required by the statute. But he did not secure a certificate. Whether he should be examined or not was immaterial, in the absence of the certificate. It was true, the statement of facts showed that the board refused to examine him or issue a certificate. This was a matter that might be reached through the civil courts. But the certificate was the *sine qua non* to his practicing medicine. Having received no certificate, he could not practice. As to whether the board arbitrarily refused to examine him, or not, was a matter with which this court had nothing to do. If the board arbitrarily refused him a certificate, it was no defense to a prosecution for practicing medicine, since he must have the certificate from a board of medical examiners before he could practice. The court would not be understood as holding that he had not complied with the requirements of the statute in order to secure his license, but does hold that he had not secured the certificate to practice, and this must be done before he could practice medicine. Again, it says that it does hold that the act is constitutional, and that, if the boards of medical examiners had arbitrarily refused to give the plaintiff a certificate or license, still he must get such certificate from one of said boards before he could practice. Failing in this, he was subject to prosecution under the terms and conditions of the law. It was contended that the act was unconstitutional on account of giving preference to the allopathic, homeopathic and eclectic schools of medicine, to the exclusion of all other schools, but the court does not think it repugnant to the constitutional provision that "no preference shall ever be given by law to any schools of medicine."

Morphin Poisoning, Prescriptions and Substitutions.—Justice Gaynor, delivering the opinion of the Supreme Court of New York, Trial Term, Kings County, for the case of Laturen vs. Bolton Drug Co., says that the charge in the complaint was negligence by the defendant's pharmacist in filling a prescription of one Dr. Cruikshank for the plaintiff, by which she was poisoned by an overdose of morphin or opium, as was claimed. The prescription was: "Elixir Pinus Comp. cum heroin—ounces 4—M—'s. One teaspoonful in water every four hours." The pharmacist saw that it only called for a patent medicine and less than an original bottle. From a pamphlet he had he also found that M. put up "Elixir Pinus Compositus" in the same bottles with the same name on the label, but with the additional two words, "with Heroin," the pamphlet giving a formula showing that the proportion of heroin was 1/24 of a grain to the dram. The pharmacist therefore, in order to fill the requirement of the words "cum Heroin" in the prescription, added 1/24 of a grain of Heroin to the dose to the "Elixir Pinus Compositus," of which he had a bottle in stock. Justice Gaynor holds that there was plainly no negligence in this. But it appeared that the "Elixir Pinus Compositus," according to the printed formula, consisted of nine separate drugs, one of which was "morphin acetate, 1/16 gr.," while the "Elixir Pinus Compositus, with Heroin," omitted the morphin acetate. However, conceding that it was a negligent oversight of the pharmacist to add 1/24 grain of heroin to a dose containing 1/16 of a grain of morphin acetate. Justice Gaynor does not think that the plaintiff could have been poisoned by it. He says that it did not seem to him that there was any evidence on which the jury could be permitted to find that the plaintiff was poisoned by an overdose of morphin, and he therefore dismissed the case. It was not for the jury to guess; the fact had to be proved. Moreover, he believes that a court may take judicial notice of the scientific fact that 1/10 of a grain of morphin taken every four hours could not have poisoned the plaintiff. He says, too, that it was very evident that the names on the two bottles were, taken together, very misleading, and for this reason the prescription was negligent. It should have unmistakably distinguished between the two bottles since the names on their labels did not. Finally, Justice Gaynor says: "My attention is called to the fact that the doctor has published in a medical journal and otherwise the false and invented statement that it was decided in this case that a pharmacist may change a doctor's prescription, or substitute some other medicine than that it calls for, without liability. I regret to feel obliged to say that he is so well known in our courts, where he has been for many years connected with litigations of unsavory character, to say the least, that no notice needs to be taken of his false statement so far as the legal profession is concerned, and I understand that to be so of the medical profession also. But lest any drug clerk may be misled by such false statement to the danger of others, it seems proper that I say that not only was no such thing said or decided, but it was not presented or even mooted. Where would counsel be found to present and argue such an absurd proposition?"

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

June 24.

1 *Treatment of Inoperable Cases of Malignant Diseases of the Orbit by the X-ray. C. S. Bull, New York.
2 *Treatment of Renal Inadequacy Complicated by an Apparent Nephritis. W. J. Pulley, New York.
3 *Prophylaxis and Treatment of Pyosalpinx. J. N. West, New York.
4 *Formic Acid in Rheumatic Conditions. L. B. Couch, Nyack, N. Y.

1. **X-Ray in Malignant Disease of the Orbit.**—Bull is satisfied that the pain so constantly complained of by patients affected with malignant disease of the orbit has been speedily, sometimes immediately, removed by exposure to the *x*-rays, and that if this is repeated a number of times the pain does not return. In operable cases, whether from extensive spread of the disease or for other reasons, Bull recommends this treatment, because it relieves suffering and may prolong life. He has not observed any of the dangerous or evil effects of the *x*-rays in any of his own cases, such as infiltration and opacity of the cornea, optic neuritis, conjunctivitis and cellulitis of the eyelids. Bull presents detailed reports of ten cases from his own private practice in which the *x*-ray treatment was employed after excision by the knife. Of these ten cases, two were very much improved, if not apparently cured, and of these two one was an epithelioma and the other a carcinoma. The remaining eight cases in which no demonstrable effect was produced by the *x*-rays, were all sarcomata. In the two favorable cases showing entire disappearance of the growth under the influence of radiotherapy, Bull did not observe any evidence of the marked cachexia so frequently recorded in cases of malignant disease treated by this method.

2. **Treatment of Renal Inadequacy Complicated by Apparent Nephritis.**—Pulley draws a sharp line between true nephritis and functional inefficiency of the kidney dependent on other causes. Two instances of the latter and four cases of the former are cited in which improvement followed lavage of the pelvis of the kidney. He believes (1) that chronic nephritis is never cured by purely surgical procedures or any kind of local treatment; (2) that many symptoms of chronic nephritis which are due to an increase of internal pressure can be relieved by decapsulation; (3) that many so-called cases of chronic nephritis are simply mechanical interferences with the normal kidney function, and that the inflammatory process, if any, is of secondary importance; (4) that lavage of the kidney pelvis is limited in its good effects to two conditions only—pyelitis from any cause which affects the functions of the kidneys by increasing their internal pressure, and in parenchymatous and diffuse nephritis when there is a great deal of cellular débris, a concentrated urine, increased kidney pressure and tension of the capsules. Pulley says that the good results by pelvic lavage are obtained in pyelitis by clearing the pelvis and ureters of irritating substances, and in the parenchymatous and diffuse nephritis principally by reflexly influencing the blood supply of the kidney, accelerating the sluggish current, expelling the more or less stagnant blood, thereby bringing to the organ fresh blood, which, in turn, stimulates the kidney epithelia to more vigorous action, and reducing the internal kidney pressure and capsular tension, thus tending to re-establish the normal conditions. The treatment consisted simply in passing catheters, by means of the cystoscope, into each ureter once or twice a week, after which collecting about four c.c. of urine from each kidney for purposes of examination, then washing out the pelves with a warm aqueous solution of nitrate of silver of the strength of from 1 to 5,000 or 10,000. Further treatment was to cut off all proteids from the diet and to keep the patient at rest as far as possible. The only medication given was cathartic, when necessary, and Bashams' solution three times daily.

3. **Treatment of Pyosalpinx.**—West summarizes his paper as follows: 1. In all cases of abortion the patient should be operated on. 2. Gonorrheal invasions should be fought from their start to their finish. 3. The greatest possible aseptic precautions should be used whenever the uterus is entered either by instruments or fingers. 4. In all cases of pyosalpinx the patient should be operated on. 5. In certain cases, the patients may be relieved by a proper form of drainage. 6. An operator should not enter on a case with a fixed determination to do a radical operation. 7. The vaginal route is unsuitable for a radical operation. 8. Vaginal gauze drainage is the best and has its definite indications and use.

4. **Formic Acid in Rheumatic Conditions.**—As the result of four and one-half years of study and chemical analysis of the excretions in endeavoring to elucidate the cause of rheumatism, Couch states that all rheumatism, acute or chronic, muscular or articular, is due to self-generative systematic poison. This poison is chemical and not bacterial. It is a sub-oxidation product, but is not uric acid, which is a product and not the cause of rheumatic condition. Rheumatism is produced by fermentation. It is caused by carbonic acid gas generated in the stomach and bowels, and is due to drinking at meals and to washing the food into the stomach without proper mastication and thorough mixing with the saliva. He was led to study the action of formic acid in the treatment of rheumatic disorders by the experience of a farmer who was cured of the disease after being stung by bees. The histories are given of a number of cases in which remarkable results were obtained. Couch's directions for using the formic acid are as follows: 1. Always cleanse the parts thoroughly before injecting formic acid solution. 2. Never use a stronger solution than 3 per cent.; a 2.5 per cent. solution is better. 3. Never use it without injecting from 5 to 8 drops of a 1 per cent. solution of cocain or other local anesthetic as a preliminary to the formic-acid treatment. 4. Always choose extensor or outer parts of a limb for injecting the remedy and inject it just beneath the skin, though deep injections may be used when occasion demands. 5. Never use more than 8 drops in any one place of either cocain, 1 per cent. solution, or of the formic-acid solution. Use a similar amount of the cocain and of the formic-acid solution. 6. If large doses are used of formic-acid solutions, hard, painful lumps are formed which are slow of absorption and painful; whereas if smaller doses are used no destruction of tissue results and no painful growths supervene. 7. Inject the most painful points and make the injections not less than two inches apart. 8. Couch never has used more than 30 injections at a time, and it is far better to use only from 12 to 15 and to repeat the following day in another place. Avoid all nerve trunks, if possible, since injections involving nerves are apt to be followed by severe pains lasting twenty-four hours. Injections may be given every day, or every other day, till the pain has ceased. It will not be apt to return unless gross carelessness or wilful disregard of plain directions exist.

American Medicine, Philadelphia.

June 24.

5 *Bromids in Epilepsy. F. Peterson, New York.
6 *Practical Points Concerning the Technic of Colostomy. S. G. Gant, New York.
7 *Treatment of Incontinence of Urine in Children. N. P. Barnes, Washington, D. C.
8 *Treatment of Appendicitis in the Precarious Stage. J. G. Sheldon, Telluride, Colo.
9 *Therapeutic Value of Ergot in Labor. J. C. Applegate, Philadelphia.
10 *Gunshot Wounds of the Stomach: Report of Two Cases. W. M. Jordan, Birmingham, Ala.

5. **Bromids in Epilepsy.**—Peterson's object in bringing this subject before the profession is to rouse a general antipathy to the indiscriminate use of this drug in epilepsy. He believes that, as a rule, this drug is worse than the disease. The sum total of comfort, happiness and well being of the epileptic would have been greater if the bromids had never been discovered. When the drug is to be employed, it should be used in small doses, combined with some of the harmless remedial agents, like antipyrin and horse nettle, or prescribe, instead of the bromin salts, some preparation of brominized oil, which is less powerful and less noxious.

6. **Technic of Colostomy.**—Gant says that it is not important to select a definite point for the incision, provided it is made below the umbilical level and between the outer edge of the rectus muscle and at least an inch internal to the anterior superior spine of the ileum. Neither is it important that the peritoneum be attached to the skin, since a quick and firm union takes place between the gut and abdominal parts. In cases of elongated mesentery, it is best to amputate several inches of the gut to avoid subsequent prolapse, and it should be removed in from three to seven days after its attachment to the skin, except in cases of complete obstruction, when the intestine should be opened immediately. Artificial ani are closed by the aid of the Gant fenestrated clamp. One blade is placed in each opening and pushed down sufficiently to in-

clude the entire spur when it is released. The clamp divides the spur in from four to seven days; the abdominal edges about the opening are then freshened and sutured under local anesthesia.

7. **Treatment of Incontinence of Urine in Children.**—Barnes says that successful treatment is determined by etiologic factors. Close attention must be given to diet, hygiene, habit and training. Medical, mechanical, and mental treatment are discussed.

8. **Treatment of Appendicitis in Precarious Stage.**—Sheldon believes that operation, not through an interior incision, but through Pettit's triangle, should be the method of choice in treating appendicitis in which the inflammatory process has invaded structures beyond the appendix and is not localized. This operation offers little risk of contaminating the small intestine; it provides efficient drainage, and is not liable to be followed by hernia.

9. **Therapeutic Value of Ergot in Labor.**—Applegate does not regard ergot as an appropriate or safe remedy at any period during labor until the presentation or expulsion of the placenta. He regards ergot as a safeguard and valuable at the end of the third stage of delayed labor or when uterine inertia has been a factor, also after placenta prævia and reposition of an inverted uterus. With a uterus normally contracted, he considers it valueless and rather detrimental when used for the prevention of septic infection, since its tendency is to disturb the venous thrombi and to lock too completely within the uterus excreta that would otherwise be liberated. For the control of hemorrhage, better results are obtained by hypodermic administration.

10. **Gunshot Wounds of Stomach.**—Jordan advocates immediate operation in cases of suspected wound of the stomach. If the stomach is full at the time of operation, he advises syphoning its contents by means of a tube passed through the bullet wound. For closing the perforations, he recommends a purse-string suture of silk, which is reinforced by a second one in order to add strength as well as to increase the approximated area. Nothing whatever should be given by the mouth during the first week, the patient being sustained by nutrient enemas, and water being given by subcutaneous and rectal injections of normal salt solution. Morphin is given for a few days to limit peristalsis and check gastric secretion. A wound of the posterior surface of the stomach constitutes a positive indication for drainage of the lesser cavity of the peritoneum, the presence of such a wound being taken as presumptive evidence of injury to the underlying pancreas or left kidney. Two cases are reported, the first having a single perforation on the anterior surface, with subsequent recovery, and the second presenting two perforations on the anterior surface; death from shock occurred four hours after operation.

New York Medical Journal.

June 24.

11 *Two Cases of Rare Congenital Malformation. H. Fischer, New York.
12 *Demonstration of Flagella of Motile Bacteria and a Simple Metbod of Making Photomicrographs. E. W. Duckwall, Pittsburg, Pa.
13 Clinical Experience with Antitoxin and the Advantages of Large Doses. L. Fischer, New York.
14 Treatment of Disease with the Roentgen Rays. W. P. Goff. Clarksburg, W. Va.
15 *Anesthesia in Throat Surgery. H. Wallace, Glen Ridge, N. J.

11. **Rare Congenital Malformation.**—The two cases reported by Fischer are a case of meningoencephalocele of unusual size and one of perobranchius and perodactylism.

12. **Demonstration of Flagella of Motile Bacteria.**—The fixing agent used by Duckwall is mordant, and the stain is carbol-gentian-violet or preferably carbol-fuchsin. The mordant requires for its preparation 2 grams of desiccated tannic acid, 5 grams of cold, saturated solution ferrous sulphate (aqueous), 15 c.c. of distilled water, and 1 c.c. of saturated alcoholic solution of fuchsin. The tannic acid is dissolved in the water first by the application of gentle heat; then the ferrous sulphate and then the alcoholic solution of fuchsin are added. To these ingredients, Duckwall adds a certain amount of sodium hydroxid, a 1 per cent. solution, varying from 0.5 to 1 c.c. The best grade of filter paper is used for filtering the mordant, and there should be left a heavy precipitate. After filtering, the color of the preparation should be of a reddish-brown hue, not clear, but somewhat cloudy, and this mordant must be used within five hours after it is made; after that time it loses its staining power. This is indicated by its gradual clarification and darkened color. It gives the best results when strictly fresh and accomplishes its work in a much shorter time, so that very little, if any, heating is required when it is placed on the coverglass preparation. Carbol-fuchsin: Take about 1 gram of granulated fuchsin (not the acid fuchsin), put it in a bottle, and pour over it about 25 c.c. of warm, absolute alcohol. Shake vigorously and let it stand for several hours before using. The carbol-fuchsin is made by diluting the saturated alcoholic solution four or five times with a 5 per cent. solution of carbolic acid. Carbol-fuchsin should be freshly made, heated and filtered before using. A small loop, full of sterile water containing the bacterium, is transferred to the coverglass and gently spread over as large a surface as possible. Carry the drop around the surface without touching the glass with the loop. In this way the surface is moistened, and the loop does not tear off the flagella. The spreading must be done rapidly, because evaporation takes place very soon. After evaporation takes place, there should appear very thin films along the track of the loop. The fixing must not be accompanied by too much heating, because the delicate organs of locomotion are easily burned off. The mordant is poured on, just enough to cover the surface without flowing over the edges. During the steaming of the mordant, it is advisable to keep up a rotary motion in order to avoid too much precipitation. When the mordant is fresh, it requires only from one-half to one minute to get sufficient staining. The mordant is completely washed off under the tap, and a small quantity of absolute alcohol is poured on the surface and instantly washed off. If the alcohol is thoroughly washed off, the water is removed by holding the glass edgeways to a piece of filter paper. Then cover the surface with carbol-fuchsin or carbol-gentian-violet. Allow the fuchsin to stand on the coverglass for about one-half minute, being heated just sufficiently for a thin vapor to be visible; then heat it so that steam is given off quite freely, but never until ebullition takes place. Care must be used when heating the stain, because it is not unusual to find that there is entirely too much precipitation and that the flagella are burned off. Clear with xylol and mount in xylol balsam immediately after staining. The culture used must be made on 2 per cent. agar from young growth in bouillon.

15. **Anesthesia in Throat Surgery.**—Wallace says that for the operator of average skill, the gas-ether sequence, with narcosis pushed well to palatal relaxation, the patient being in the dorsal position, with moderately lowered head, secures the best results as regards least danger to the patient and the greatest facility of operative technic.

Boston Medical and Surgical Journal.

June 22.

16 *Eyestrain, Its Importance and Its Limitations. G. L. Walton, Boston.
17 *Preservation of the Urine. J. B. Ogden, New York.
18 Impetigo Contagiosa: Cutaneous Abscesses Caused by Pyogenic Micro-organisms. J. T. Bowen, Boston.
19 Scabies. J. S. Howe, Boston.
20 Vegetable Parasites of the Skin and Modern Methods of Culture. C. J. White, Boston.
21 Use of X-Rays in Some Skin Affections. F. S. Burns, Boston.

16. **Importance and Limitations of Eye Strain.**—By way of establishing a control, Walton has questioned, regarding headache, 100 healthy individuals with sight, and 42 patients were examined who were either partially blind (whether the blindness was acquired or congenital), or who suffered from acquired blindness coming on at an age after the habit of fixation and convergence was well established. The third class examined contained individuals totally blind since infancy. From a study of these cases, Walton draws the following conclusions:

1. Among individuals totally blind since infancy, 66 per cent. were free from tendency to headache, as contrasted with 31 per cent. of those having sight, and 29 per cent. of those with partial or with acquired blindness.

2. If these figures should prove constant the inference would seem justifiable that half the headaches in health are due to eyestrain. 3. The headache, when present among those totally blind since infancy, partook sufficiently often of the migranoid character to preclude the supposition that all migraine is due to eyestrain. 4. The results of this study would indicate that while migraine and migrainoid headaches have a constitutional basis, and while other factors than eyestrain may act as exciting causes, still eyestrain is one of the most, if not the most, important of these exciting causes, and steps for its relief are imperative.

5. In no case has correction of refraction been given a thorough trial until (a) the glasses are properly centered, (b) their continued readjustment is practiced, (c) the patient looks as much as possible through their centers instead of from side to side, (d) efforts are avoided at straining the eyes to see distant objects with the glasses, (e) spectacles instead of eyeglasses are used, and (f) the use of spectacles is constant, not intermittent.

6 The constitutional headache of the deviate is probably allied to the headache of "brain fag," but is out of all proportion to the sources of fag. Little can here be expected of spectacles.

7. In the proportion in which obsessive tendencies and other signs of constitutional peculiarity accompany errors of refraction, efforts at the correction of refraction will prove unavailing for the relief of nervous symptoms.

17. **Preservation of Urine.**—Ogden's paper is based on 140 experiments with various preservatives, in urines of varying composition: (1) Those with a normal, a high, and a low specific gravity; (2) those with albumin and without albumin; (3) those with sugar and free from sugar; (4) those with a variety of casts and without casts; (5) those containing pus and blood, and (6) those containing crystalline elements. Each experiment was accompanied by a control of the same urine. The control and preserved specimens were allowed to stand in stoppered bottles at room temperature until they had either undergone ammoniacal decomposition or become so changed by the presence of bacteria or deposits that chemical tests could not be satisfactorily applied or the elements in the sediment detected. The susbtances used were boracic acid, formaldehyd, salicylic acid, benzoic acid, corrosive sublimate, chloroform, chloral, camphor, and thymol. Ogden found boracic acid to be the most practical urinary preservative, when used in the proportion of five grains to four ounces of urine. Formaldehyd solution should be used only by the physician or a responsible person. One drop will preserve a pint of urine for about a week. One drop can be used in four ounces of urine without harm.

Medical News, New York.

June 24.

22 Education Within the Medical Profession. P. A. Morrow, New York.
23 Best Way to Treat the Social Evil. H. A. Kelly, Baltimore, Md.
24 Prophylactic Value of Normal Marriage. A. H. Smith, New York.
25 Need of Sexual Education. E. L. Keyes, Jr., New York.
26 Report of Gall-Bladder Surgery, with Especial Reference to Early Diagnosis and Early Operative Interference in Cholecystectomies. (Continued.) F. Martin, Baltimore, Md.

Lancet-Clinic, Cincinnati, Ohio.

June 24.

27 *Pathology of External Piles. L. J. Krouse, Cincinnati.
28 Mesenteric Cysts. O. G. Pfaff, Indianapolis, Ind.

27. **Pathology of External Piles.**—From observation and investigation, Krouse concludes as follows: First, that the walls of the hemorrhoidal veins must undergo some pathologic alterations before an external hemorrhoid can develop; second, that these pathologic changes being present, any undue pressure may cause an aneurismal dilatation of the vein; third, that the internal coat of the vessel being altered, there is more tendency for coagulation of blood with the formation of a clot; fourth, the sexual activity of an individual increases the intravenous pressure and favors the development of the sanguineous tumor. It is, therefore, a disease of adult life; fifth, that the clot is always found in the diseased vessel and never in the connective tissue outside of the vessel.

St. Louis Medical Review.

June 17.

29 *Appendicitis in Its Relation to Pregnancy. H. C. Coe, New York.
30 *Sudden Death During or Immediately After the Termination of Pregnancy or Operation on the Pelvic Organs in Women. E. P. Davis, Philadelphia.
31 Rupture of the Gall Bladder (Spontaneous and Traumatic, with and without operation), an Historical Review of 273 Cases. B. M. Ricketts, Cincinnati, Ohio.

29.—See abstract in The Journal, June 10, 1905, page 1878.

30.—See abstract in The Journal, June 17, 1905, page 1957.

The Post-Graduate, New York.

May.

32 Comparative Anatomy of the Anterior Cerebral Artery. W. W. Lesem.
33 Case of Cortical Cerebral Arteriosclerosis with Distinct Focal Symptoms. J. Collins.
34 *Exophthalmic Goiter. J. Collins and F. Robbins.
35 *Hereditary Progressive Muscular Atrophy, Spinal and Bulbar. J. Collins.
36 *Case of Myotonia. J. Collins.
37 Facial Hemiatrophy. J. Collins.
38 Trigeminal Neuralgia. E. G. Zabriskie.
39 Paralysis of the Left Platysma. E. G. Zabriskie.
40 Some of the Changes Found in the Cord After Amputation. E. G. Zabriskie.
41 Commoner Varieties of Alcoholic Insanity. J. Collins.
42 Report of Neurological Clinic of Professor Collins. H. Hoefle.

34. **Exophthalmic Goiter.**—Collins and Robbins present a brief historical review of exophthalmic goiter and a résumé of theories concerning its etiology, with deductions based on the observation and study of 100 consecutive cases.

35. **Hereditary Progressive Muscular Atrophy.**—Collins records the history of a girl, aged 13, in whose ancestory a similar disease was seen extending through several generations. In five generations, ten individuals have been afflicted. The disease developed at any age, and the beginning symptoms indicate an involvement of the spinal cord in one case, and of the medulla oblongata in another, but the latter was eventually affected in all of them.

36. **Myotonia.**—The case of myotonia reported by Collins differs in every particular from previously reported cases. There was no history of a similar disorder in the patient's family; the myotonia occurred only on purposeful movements and tended to increase so long as these movements were kept up, and there is an absence of the myotonic reaction, although what it has in common with congenital myotonia is the hypertrophy of the muscles and the absence of symptoms pointing to gross disease of the nervous system. When the patient first came under his observation, Collins was inclined to look on it as an intention spasm of the nature of an occupation neurosis, but the continuance of it, now about five years, its gradual increase in severity, the absence of an adequate cause, and associated symptoms, lead him to disregard that diagnosis.

Bulletin of the Johns Hopkins Hospital, Baltimore.

May.

43 *Hyperplasia of the Chromophile Cells of the Hypophysis as the Cause of Acromegaly, with Report of a Case. D. D. Lewis.
44 History of the Circulation of the Blood. Contributions of the Italian Anatomists and Physiologists—their Bearing on the Discovery by Harvey. J. C. Hemmeter.
45 Comparative Surgery. C. M. Faris, H. C. Tracher, and others, and an Introduction by Harvey Cushing.
46 Two Cases of Hemorrhagic Cyst of the Thyroid Gland. C. M. Faris.
47 Report of Two Cases of Uterovaginal Prolapse. H. C. Thacher.
48 Report of Eight Cases of Canine Neoplasm. J. F. Ortschild.
49 Cases of Hernia in Dogs. F. C. Beall.

43. **Cause of Acromegaly.**—Lewis' case is noteworthy in that it came to autopsy at an unusually early stage of the disease, the usual clinical course of a benign or chronic case having been interrupted by death due to cerebral embolism and secondary hemorrhage. The hypophysis appeared normal on gross examination, but microscopic examination revealed a high hyperplasia, especially of the chromophile cells, which is confirmation of the theory that acromegaly is caused by excessive function of the glandular elements of the anterior lobe of the hypophysis.

Denver Medical Times.

May.

50 *Intracerebral Injections of Antitetanic Serum in Traumatic Tetanus. S. D. Hopkins, Denver, Colo.
51 Recurrent Perinephritic Abscess, of Twenty-six Years' Standing, Presenting a Clinical Picture of Addison's Disease. G. A. Mollen, Denver, Colo.
52 A Supplementary Report. R. C. Coffey, Portland, Ore.
53 Treatment of Gastrointestinal Diseases in Children. D. T. Quigley, North Platte, Nebraska.
54 Normal Obstetrics. The Diagnosis and Management of Labor. T. M. Burns, Denver, Colo.

50. **Intracerebral Injections of Antitetanic Serum.**—In the three cases of traumatic tetanus reported by Hopkins, a small trephine opening was made in the right frontal bone half way between the outer angle of the orbit and a point on the vertix at the juncture of the line crossing between the two auditory canals. A small slit was made in the membranes and the needle introduced two inches into the substance of the frontal lobe of the brain, this lobe being selected for the injection because the patients were right-handed. The needle is directed forward and slightly downward. In three cases 20 c.c. were injected into the cerebral substance at once, and Hopkins believes that the success of this method of treatment depends on the use of large quantities of the serum. The serum treatment was followed up with sodium bromid and chloral hydrate, given by enema, at varying intervals, for several days, and then small doses by mouth, a sufficient quantity being used to keep the patient asleep most of the time.

Journal of Cutaneous Diseases, New York.

May.

55 *Effect of the Roentgen Ray on Paget's Disease of the Gluteal Region. J. A. Fordyce, New York.
56 *Staphylococcic Infection of the Tonsil Simulating a Chancre. D. W. Montgomery, San Francisco.
57 Mulberry-Colored Spots on the Skin of the Lower Spine of Japanese and Other Dark Races: A Sign of Negro Descent. A. S. Ashmead, New York.

55. **Roentgen Ray in Paget's Disease.**—Fordyce reports the case of a woman 60 years old who received an injury on the left gluteal region, at which site there developed, about a year later, a dark red spot which slowly increased in size, at times was somewhat painful, but never gave rise to a discharge which was at all pronounced. In its color, general and microscopic appearance, and slow eccentric progression, it was strikingly similar to the usual type of Paget's disease of the nipple. The center of the lesion showed the structure of a small-celled epithelioma of the rodent ulcer type. The patient received ten *x*-ray exposures at intervals of a week, each averaging about ten minutes. The target was held at a distance of from four to six inches from the affected area. A pronounced reaction was observed after six or seven sittings. The lesion apparently became much larger, was painful, discharged pus freely, and apparently extended at the margins. The use of the *x*-ray was discontinued under the impression that it was doing harm. After a week or two the discharging surface healed rapidly under local treatment, and after a month, the sore had completely cicatrized, leaving a smooth scar. An examination of the patient twelve months after the cessation of all treatments showed no evidence of a recurrence. Fordyce concludes that until the ultimate cause of Paget's disease is revealed, cases similar to the one reported must be classed as of doubtful nature or as transitional forms between some of the less common types of superficial epitheliomas and the well-known pre-cancerous condition of the breast.

56. **Staphylococcic Infection of Tonsil.**—Montgomery describes the appearance of the tonsil as follows: "There was a circular 'crateriform' ulcer, or what appeared to be an ulcer, the size of a nickel on the left tonsil. The floor of this ulcer had a yellow covering and its edges were rounded and raised. The left anterior pillar of the fauces was bulged forward, rounded and smooth, and of a deep red color. There was a small extension of the ulcer downward, but its general outline was circular. On looking into the mouth, the observer looked right straight down on the floor of the ulcer, and it gave the impression of being a chancre. On palpating the sore, it was not found to be very hard, only fairly firm. The ulcer was not painful, but the patient expectorated a good deal, and it evidently irritated him. There was one enlarged lymphatic nodule behind the left ramus of the jaw, which was smooth and firm, but not hard. This lymphatic nodule was tender, and there was also some pain and discomfort on the left side of the neck from the ear downward, which had been present for several days. The left epitrochlear lymphatic nodule was enlarged, but soft. The only micro-organisms found were staphylococci. There was no fever, and the patient had good general health. Such history as was given was corroborative of the view that the lesion was a chancre, or at least syphilitic. Against this was the fact that there were no concomitant symptoms. The present case reversed the usual errors, and was a comparatively insignificant affection, that bore a striking resemblance to a chancre, and was thought by well-trained men to be either a chancre or an epithelioma, a mistake that was not the result of ignorance, as the clinical type here represented is very rarely seen, and no one, on first seeing it, could be blamed for not recognizing its true character, that of a staphylococcic infection of the tonsil.

Archives of Pediatrics, New York.

May.

58 *Congenital Tuberculosis. M. Wollstein, New York.
59 Intrauterine Amputations and Amniotic Bands. W. L. Stowell, New York.
60 Gonococci Infection of the Eye in Infants. J. E. Weeks.

58. **Congenital Tuberculosis.**—Wollstein reports the pathologic findings in a case of advanced tuberculosis, the patient dying six days after the birth of the child, in the eighth month of pregnancy. Considering the advanced stage of the tuberculous lesion in the endometrium, Wollstein assumes that the basal decidua was first affected, the tubercle bacilli traveling from the decidual sinuses to the covering of the villi, localizing there and causing thrombi in the adjacent intervillous spaces, with destruction of the syncytium, entering the villous stroma, and finally reaching the chorionic villi. Thus all four varieties of placental tuberculosis are illustrated in this case. That the fetus was infected comparatively late (just before birth) might be argued from the early stage of the tubercles in the child, which had lived for nineteen days.

Colorado Medicine, Denver.

May.

61 Use of the Anesthetic Somnoforme. W. L. Hess, Denver.
62 Mastoid Operation—Reported Cases. R. G. Davenport, Trinidad.
63 Operative Cases of Converging Strabismus, with Photographic Illustrations. W. C. Bane, Denver.
64 *Advantages of a Simple Surgical Equipment and Technic. H. C. Wetherill, Denver.

64. **Simple Equipment and Technic.**—Wetherill says that the essentials of a good operating room and equipment are simplicity and facility for scrupulous cleanliness. The room should be flooded with a soft, diffuse light; it should be well warmed, well ventilated, without draughts, and not too large. The equipment should be simple and readily cleaned, and the basins or sinks accessible for disinfection of sterilization of every part. Plain white enameled sinks with portable basins are clean, are easily washed and boiled, and promote the free use of soap and water. The armamentarium should be simple and easily sterilized. It promotes rapidity and dexterity, and materially lessens the risk of contact infections. The suture and ligature material must also be simple in its preparation, and soft and strong and of no greater caliber than is absolutely necessary, particularly if it be of silk or catgut. The sterilization of the hands of the operator and his assistants, and of the skin of the patient should be as simple as possible, compatible with safety. Wetherill's method consists in a thorough scrubbing with soap and hot water for twenty minutes or more, rinsing in a 1 per cent. formaldehyd solution, and washing with 95 per cent. of alcohol. In the performance of round ligament or hernia operations and in certain celiotomies, he uses rubber gloves. The soap Wetherill uses is easily made, is inexpensive and is an excellent cleanser. It leaves the hands soft and smooth. It is called the Denver Woman's Hospital Soap, and is made as follows: Life Buoy Soap, 2 bars; water 2 quarts; turpentine, 4 ounces; alcohol, 8 ounces. Cut the soap into fine shavings and boil with water until it is dissolved. When cool, add the turpentine and alcohol and shake well in a jar or flask. The turpentine and alcohol dissolve the fats and empty the pores, and if very hot water is used, so that the hands and arms are made to perspire, and the water is frequently changed, the sweat glands are stimulated and the germs are washed out of their mouths. The elaborate preliminary preparation of the patient also is unnecessary. Purging is also injurious and ordinarily quite unnecessary. Instead of stimu-

lating peristalsis, aim to promote peristaltic arrest by prohibiting food and drink and administering opium or morphin, if absolutely necessary, to encourage these conservative agents, as well as for the relief of the pain which the inflammatory reaction produces. The number of assistants should be limited to those actually indispensable, and irrigation and drainage should be restricted.

Journal of Nervous and Mental Diseases, New York.

May.

65 Arteriosclerosis in Its Relation to Diseases of the Nervous System. E. D. Fisher and H. Brooks.
66 Treatment of Cerebral Palsies and Athetosis by Nerve Anastomosis and Transplantation. W. G. Spiller and C. H. Frazier.
67 Location Within the Spinal Cord of the Fibers for Temperature and Pain Sensations. W. G. Spiller.
68 *Curability of Epilepsy. J. W. Wherry.

68. **Curability of Epilepsy.**—Wherry is of the opinion that the ideal treatment of epilepsy is practically impossible under ordinary circumstances. The tendency of modern medicine is to systematize and to classify, and then to formulate a general treatment which is to apply to all cases of each class. The individual is frequently forgotten and always overlooked. When a patient fails to respond to the prescribed drug, he is said to possess an idiosyncrasy. The study of epilepsy must be individual in its character, because the fundamental element of the disease is its individuality. Each patient is a case in himself, and no two patients can be treated successfully from the same formula. One of the chief characteristics of the epileptic is his mental, moral and physical instability, and this feature must receive serious consideration, if a recovery is hoped for. The convulsion is not all there is to epilepsy. To suppress the convulsion with drugs is accomplishing not real good, if the patient is to become an imbecile or a dement as a result. The treatment of epilepsy must embrace the whole individual, mentally, morally and physically. Wherry suggests as the treatment of epilepsy: A study of each case individually; special adaptation of drugs to individual conditions; personal supervision and individualization of diet; absolute change of environment. The treatment must not be postponed until the disease becomes well established. Epilepsy, instead of being an incurable disease, under the most favorable circumstances, has shown a schedule of recoveries in excess of some other diseases, and which in the future will be made much larger.

Annals of Ophthalmology, St. Louis.

April.

69 *Conjunctivitis Petrificans. W. C. Posey, Philadelphia.
70 Gonorrheal Ophthalmia—with Involvement of the Anterior Ethmoidal Cells; Report of a Case. G. F. Suker, Akron, Ohio.
71 Unusual Effects of Iodid of Potassium. H. Gifford, Omaha, Neb.
72 Latent Hypermetropia, the Cause of the Difficulties Attending Refraction Work. L. S. Dixon, Boston.
73 Case of Adenoma of the Meibomian Glands. G. Pause.
74 *Treatment of Infection After Cataract Extraction. H. F. Hansell, Philadelphia.
75 Alterations Following Extirpation of the Superior Cervical Sympathetic Ganglion. E. Gasparrini, Torino, Italy.
76 Constitutional Aspect of Sympathetic Ophthalmia. C. Schulin, Billings, Mont.
77 Injury Resulting in Cutting of the External Rectus Muscle, and Probably Laceration of the Optic Nerve. F. Vinsonhaler, Little Rock, Ark.
78 Practical Application and the Relative Value of the Tests Used in Examining the Eye Muscles. A. Duane, New York City.
79 Contribution to Serum Therapy, Especially of Ulcus Cornea. L. Paul, Breslau.
80 Facts Versus Fancies Concerning Heterophoria. F. C. Hotz, Chicago.

69. **Conjunctivitis Petrificans.**—Posey's case, a female, aged 30, presented irregular opaque areas situated in the conjunctiva under the epithelium and projecting but little above the surface. There were but few symptoms of irritation, and these were scanty secretion, with a tendency to spontaneous disappearance without leaving any trace in the early stages. The treatment consisted in carefully dissecting out many of the chalky areas, in the employment of a boracic wash and of a solution of atropin.

74. **Infection After Cataract Extraction.**—Hansell discusses this subject under the heads of precautionary treatment; preventive measures, such as exclusion of conjunctival and lachrymal disease; the exclusion of sources of endogenous infection, and the preparation for operation. Besides the local treatment, he urges stimulating and supporting constitutional treatment.

Archives of Ophthalmology, New York.

May.

81 Amaurosis from Filix Mas. Dr. Stuelp.
82 Purulent Inflammation During Fetal Life as the Cause of Microphthalmos and Anophthalmos. Prof. Hoppe, Cologne.
83 *Transplantation Method for the Treatment of Trichiasis, and New Instruments for the Operation. P. Briganti, New York.
84 Case of Cysts of the Pars Iridica Retinæ. E. L. Oatman, Brooklyn, N. Y.
85 Anomalies of the Vascular System of the Optic Papilla, C. J. Kipp, Newark, N. J.
86 Pathological Anatomy of Glaucoma. W. Dolganoff, St. Petersburg.
87 Accessory Apparatus for Locating Foreign Bodies in the Eye and Orbit. G. L. Dixon, New York.

83. **Treatment of Trichiasis.**—In order to remedy certain defects and to make the operation easier to perform, Briganti has devised a change in the technic of the so-called Italian method, adopting new instruments, and also a modification of the method itself, which, while insuring a fresh bleeding surface for the flap in its whole length, avoids the cutting of the hairy border. The instruments devised are two: One is called the marginal forceps, the other, the flap forceps. The former are made right and left, and are intended for the marginal incision. They are like thick forceps up to the elbow, at which point they form an angle of about 125 degrees. The flap forceps carry on one branch a small oblong plate, which is slightly curved from side to side to adapt itself to the curvature of the lid. The other branch, in one model, terminates in a narrow piece attached at its middle and shaped to follow the outline of the margin of the lid. The other model resembles closely Desmarre's entropion forceps, except in the curvature of the flap guide. The plate of the flap forceps is placed beneath the margin, and the screw arrangement tightened. The surgeon then makes incisions on the integument covering the lid along the margins and on the guide of the narrow piece, being careful that the resulting skin flap is attached at its extremities. The instrument is now removed and the lower incision completed in the middle. Both marginal and flap forceps, when properly placed and fixed, exercise sufficient pressure to prevent hemorrhage, thus shortening considerably the time of the operation. The flap is now very carefully dissected and deprived, as far as possible, of superfluous subcutaneous connective tissue. The marginal incision must be about 3 mm. deep, the deeper the better, as the flap will attach much easier. The section is made between two imaginary lines, one represented by the excretary ducts of the Meibomian glands, the other by the lashes. As soon as the flap is ready to be placed in position, the marginal cut is freshened, so as to bleed, and completed by prolonging it at each end, in order to connect it with the skin wound resulting from the detaching of the flap. The prolongation of the incision toward the inner canthus is made in that part of the margin normally deprived of lashes, and must follow a straight line as much as possible. Sometimes it is a necessity to cut off a very thin strip of marginal tissue, which is replaced by the flap, so as to insure an even surface after the attaching. The prolongation outward is made as close as possible to the outer canthus and also as nearly straight as possible; the prolonged marginal section at either end meets the apex of the skin wound at a very small angle. The flap is allowed to lie on the resulting continuous, bleeding surface, and the ciliary border of the lid is practically displaced upward and rotated outward as far as the thickness of the flap. This done, the skin wound is sutured and a vaselin dressing applied, care being taken in separating the margins of the lids by using a thin cotton pad saturated with vaselin. The dressing is repeated every day for a week or so, and removed as soon as the healing of the wound is assured.

Journal Missouri State Medical Association, St. Louis.

May.

88 Etiology and Treatment of Eclampsia. H. Schwarz, St. Louis.
89 *New Hemorrhoidal Clamp Permitting Suture of Seared Surface Before Removal of Instrument. R. F. Amyx, St. Louis.
90 Value of Getting Certain Patients Up Very Early After Laparotomy. W. Bartlett, St. Louis.

91 Strangulated Umbilical Hernia in which Cecum, Appendix, Ascending and Transverse Colon Were Found Gangrenous in Sac—Artificial Anus made at Primary Operation, Followed Ten Weeks Later by Double Resection to Restore Intestinal Continuity. J. Y. Brown, St. Louis.
92 Certified Milk in St. Louis—Rules and Regulations Governing the Production and Distribution of Certified Milk in St. Louis Under the Auspices of the St. Louis Pure Milk Commission.

89. **New Hemorrhoidal Clamp.**—Amy has endeavored to add to the ordinary clamp in common use an auxiliary which, he believes, possesses sufficient advantages to warrant its use in all operations on hemorrhoid. Two flat pieces of metal are welded on the upper surface of any ordinary clamp, each half corresponding to the blades of the clamp. The surfaces of the pieces of metal are furrowed at intervals of one-fourth of an inch across each blade of the clamp, and extending the entire length of the blades of the clamp. These furrows, when the clamp is closed, come together and form furrows extending across the face of the clamp, each furrow being one-half inch in length and one-eighth of an inch in depth, and extends down to the original biting portion of the clamp. The sutures can be applied very easily with a small curved needle. It can be either a continuous or an interrupted suture, and should be applied before removing the clamp. The curved needle carrying the suture should be passed down into each furrow, and should be kept in contact with the bottom of the furrow, so that the suture will enclose sufficient tissue in order not to cut through. With this device, the clamp and cauterized surface are securely fixed together, so that early hemorrhage does not occur; it gives a better opportunity for early union, so that separation of the clamped portion will not follow; ulcerative processes do not follow, and the possibility of late hemorrhage is limited. The clamp affords all the advantages of any now in use.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

June 10

1 Errors of Diagnosis in Medicine. J. R. Bradford.
2 Micro-organisms of Meat Poisoning and Their Allies. H. de R. Morgan.
3 *Spirochetes in Syphilis. E. J. McWeeney.
4 Pharmacology and Therapeutics of Ice. V. G. L. Fielden.
5 *Sanatorium Treatment of Phthisis. W. S. Paget-Tomlinson.
6 *Drug Treatment for Inebriety. J. S. Bolton.

3. **Spirochetes in Syphilis.**—McWeeney was able to demonstrate spirochetes in nine cases of undoubted syphilis in the primary and secondary stages. In a case of advanced tertiary ulceration of the palate he failed to find them, and also failed in a case of mucopurulent vaginitis, unaccompanied by ulceration and considered not to be of a syphilitic nature. The method of examination was that employed by Schaudinn. The organisms found are described as follows:

> Spirally twisted, extremely delicate organisms, actively motile, with peculiar corkscrew movement in either direction. Length from 7 to about 18 microns, averaging about 12 microns. Thickness too small to measure. Some were equally thick throughout: others, more especially the longer ones, were decidedly thicker in the middle, and tapered, slowly at first, afterward more rapidly, toward the ends. The coils were often seven or eight in number, not regularly spiral, more open, toward the extremities, sometimes nearly effaced. The smaller spirochetes looked like detached flagella of the typhoid bacillus in a Pitfield preparation.

McWeeney is convinced that his findings verify those of Schaudinn and Hoffmann, and concludes his article by referring briefly to the findings of others in the same line of work.

5. **Sanatorium Treatment of Phthisis.**—An experience of five years, during which 224 patients came under his care, prompts Paget-Tomlinson to conclude as follows: First—That although sanatorium treatment as applied to the poor is less satisfactory than in the case of the rich, it is undoubtedly of great value. It is not too much to say that by its means, when judiciously applied, in nearly all the early cases, and in a considerable proportion of the medium cases, the patients can be restored to comparative health and the power of earning a living. Second—It is of no small importance that all these patients are prevented from drifting into the advanced stage, when they would become a much greater source of infection to all about them. Third—The lessons learned in the sanatorium as to open-air methods can not fail to have a beneficial influence on the future home-life; thus is the gospel of fresh air spread far and wide, manifesting its healing effects in other diseases besides consumption. Fourth—Knowing that the great difficulty physicians have to contend with in treating the consumptive poor is the return to the old conditions of life, more pains should be taken to consolidate the cures: 1, By a more prolonged residence in the sanatorium; 2, by urgently advising an alteration in the occupation, whenever possible, if this has been an injurious one. It would seem that sufficient organized effort has not been made in the direction of providing agricultural or horticultural colonies for patients leaving sanatoriums and especially for those who have previously followed an unhealthy trade. There are many difficulties in the way, but it seems a very important adjunct to sanatorium treatment and, if widely adopted, we should probably hear of fewer relapses. Lastly, it is of the first importance that "homes" for patients in advanced stages should be provided in all large towns and in county districts, where patients may pass their closing days in comparative comfort, and, above all, where they will cease to be a source of dangerous infection to the inmates of their own crowded homes. If this scheme were complete throughout the land, combined with an adequate provision of sanatoriums and colonies for the establishment of health, there is every reason to believe that consumption would be abolished in a comparatively short space of time—a happy result, carrying with it the extinction of much misery and suffering, and, in the long run, proving a considerable financial gain to the country.

6. **Drug Treatment for Inebriety.**—Bolton's treatment consists of the injecting into the muscles of a watery solution containing grain 1/60 of strychnin hydrochlorid and grain 1/30 of atropin sulphate.

The Lancet, London.

June 10.

7 *Pleurisy; Its Pathology, Diagnosis and Treatment. N. Moore.
8 Notes on Plague. A. M. Elliot.
9 *Chemical Examination of the Gastric Contents with an Accurate Clinical Method of Determining the "Active" Hydrochloric Acid. W. H. Willcox.
10 *Electrostatic Treatment. J. C. Webb.
11 Case of Pyrexia Following Childbirth Treated with Antistreptococcus Serum. P. H. Ward.
12 Dislocation of the Carpal Scaphoid. A. Fullerton.
13 Poisoning by Fluid Ammonia Used for Domestic Purposes. H. Savory.
14 Slight Errors of Refraction and Their Influence on the Nervous System. C. E. Pronger.

7. **Pleurisy.**—Moore maintains that, apart from injuries, pleurisy is to be regarded as part of a condition which has generally begun in the respiratory tract, but sometimes in the pericardium (especially in rheumatic fever), and now and then in the peritoneum, and that the origin ought always to be carefully investigated. Empyema is a frequent result of lobar pneumonia and also of tubercle. Large non-purulent effusions are due to pneumococcal or tuberculous affections. Tubercle reaches the pleura from the lung in most cases and in a few from the peritoneum. The diagnosis should take a wide survey of the origin of the disease and not be confined to the interpretation of physical signs. In regard to treatment, he agrees with those who are in favor of evacuating all large serous effusions and all collections of pus, and in the latter case he is more and more inclined to favor the method of resection of a piece of rib as procuring better drainage and, therefore, more speedy recovery. The patient should be kept under observation till he may be considered free from the condition of which the pleurisy was the most prominent manifestation. In pleurisy, regulations as regards fresh air and diet, followed out in all cases, would often prevent the development of permanent tuberculosis later in life.

9. **Method of Determining Active Hydrochloric Acid in Stomach Contents.**—Willcox describes his method as follows:

> Two equal volumes of the filtered gastric contents (20 cubic centimeters)) are taken. (a) One portion is diluted to about 60 cubic centimeters with distilled water, ten cubic centimeters of pure nitric acid, about five cubic centimeters of a solution of iron alum, and a measured excess (30 cubic centimeters) of decinormal silver nitrate solution are added. Decinormal ammonium sulphocyanid solution is run in from a burette until a permanent reddish-brown tint just results. The difference between the quan-

tity of silver nitrate solution added and the ammonium sulphocyanid solution used gives the amount of total chlorids present as decinormal HCl. An evaporating dish may be conveniently used for doing the titration. (If the quantity of gastric contents is limited 20 cubic centimeters may be used for the determination of total acidity with decinormal NaOH and phenol phthalein. This liquid is then used for the estimation for the total chlorids exactly as described above.)

(b) The other portion of the gastric contents is placed in a porcelain evaporating dish (four and a half inches in diameter) and evaporated to dryness on the water bath. The solid residue is heated for about an hour on the water bath. The dish is then placed on a piece of wire gauze and heated with a small Bunsen flame, the flame not coming in actual contact with the dish. The heating is continued for about ten minutes until the residue is well charred. The dish is cooled; about 60 cubic centimeters of water and the pure nitric acid are added, the contents being well stirred with a glass rod. The titration is then performed exactly as described above (a) and the quantity of chlorids present given in terms of decinormal HCl. The difference between the chlorids found in (a) and (b) expresses with great accuracy the amount of the physiologically active hydrochloric acid. The effect of igniting the dried residue of the gastric contents is to drive off the free hydrochloric acid and also to decompose the organic bases which have combined with hydyrochloric acid, thus causing the latter to be also volatilized. The loss in chlorids, therefore, represents "the active hydrochloric acid." It is important that the dish be not heated over a free flame or else inorganic chlorids may be volatilized in small amount. The presence of the black particles due to the charring does not in the least interfere with the accuracy of the titration, since the white precipitate of silver chlorid and silver sulphocyanid forms an effectual contrast to this and the first appearance of a red-bbrown tint in the titration can be immediately seen. It is not necessary to filter off the charred particles as this introduces errors and makes the process unnecessarily complicated.

10. **Electrostatic Treatment.**—Webb says that electrostatic currents find their main field of utility in the treatment of all acute and chronic inflammations not due to microbic origin or to pressure of a growth; chronic inflamed joints, congestion of the liver with constipation, inflammation of nerves or of their sheaths, ulcers, certain skin troubles, inflammatory glandular swellings, chronic or subacute catarrh of the vocal cords leading to hoarseness or aphonia, hemorrhoids, anal fissure, early cases of locomotor ataxia, spasmodic dysmenorrhea, functional neuroses and in treatment of persons suffering from the effects of overwork.

Indian Medical Gazette, Calcutta.

May.

15 *Operation for the Removal of Elephantiasis of the Scrotum and Penis. J. T. Calvert.
16 Prevalence of Malignant Disease in Bengal. J. W. D. Megaw.
17. *Gastroenterostomy for the Relief of Benign Stricture of the Pylorus. W. J. Wanless.
18 Malaria Prophylaxis. S. H. L. Abbott.
19 Cataract Coughing. H. Smith.
20 Pterygium of Bacilli. R. McCarrison.

15. **Operation for Removal of Elephantiasis of External Genitals.**—Calvert describes the operation performed by him on several hundred patients, with a mortality of 1 per cent., as follows: The patient is placed in the recumbent position on the table. A large rubber tube is placed twice around the tumor after the method of McLeod. A longitudinal incision is made from the healthy tissues above the pubes along the dorsum of the penis, or over its supposed situation when invisible, and the penis is rapidly dissected out, the prepuce when free being clamped with forceps and dealt with subsequently. A vertical incision is made over each testicle in turn and these, when freed, are turned up over the pubes. A curved incision is then made from the cut at the root of the penis to the perineum, sometimes even touching the margin of the anus. A similar incision is made on the opposite side. The testicles being held well up, together with the penis, a finger is placed in front of the urethra, to avoid its being injured, and the tumor is rapidly cut away. The cut surface is covered with towels to avoid contamination, the prepuce slit up from within, the glans thoroughly and then the whole of the prepuce and all loose tissue is carefully dissected off the penis. The blood vessels are clamped with forceps and twisted in adults, or ligated with catgut in the case of old men. The cord is now removed, pockets are required made beneath the skin on the inner side of each thigh into which the testicles are pushed and the skin is brought together in one straight line with silver wire sutures. Before closing the wound a drainage tube is introduced from a point about three-quarters of an inch above the root of the penis to the perineum, where it is brought out by preference some little distance away from the anus. The suture nearest the urethra is always of strong catgut lest the penis should be swollen and be cut by pressure on a metal suture. The wound being closed, the penis is put well on the stretch, and the skin all around, except in front of the urethra, is fixed to its sheath by a continuous catgut suture. The penis being still kept well extended, is covered with two or more skin grafts, placed longitudinally, obtained from the front and inner surface of the left thigh. These grafts are kept in position by wrapping two strips of oiled silk about an inch wide and twelve inches long round the still extended organ, followed by two long strips of boric lint wrung out of boracic acid solution and wrapped on wet—the better to fit the penis. This dressing is kept in position by a few strips of twisted gauze tied circularly at intervals. The latter precaution is essential, as it was found that when patients went to stool the dressing sometimes slipped off like a glove. By the above dressing the penis is incased in a fairly stiff splint and can not retract, thus insuring, on recovery, a penis of a length as great, if not greater, than before the onset of the disease. The wound is dressed with strips of perchlorid gauze, sublimate wool and a figure-of-eight bandage. The superficial wound caused by removing the grafts is covered with a piece of lint soaked in picric acid solution, 1 per cent., which is left untouched till healing has taken place under it. The wound is dressed on the fourth day and the tube removed. It is dressed again on the eighth day, on which date or two days later it is usually healed. The penis is dressed on the fourth day, when the oiled silk is removed and strips of gutta-percha tissue substituted. The rapidity of the healing of the penis depends on the success of the grafting. When two grafts are cut sufficiently broad to cover the entire penis healing is very quick and successful. With three or more grafts there is a tendency for the grafts to become displaced and for healing to be retarded. The grafts may also be wound circularly round the penis instead of being placed longitudinally, though Calvert prefers the latter method. Boric lint is used because it is stiffer than ordinary lint and makes a better splint. By wrapping the second piece of lint more thickly at the root than near the glans, the penis will keep erect, even though unsupported, as if in a splint. To protect it from injury in bed a half hoop of split bamboo is fixed over it between the side pieces of the bed. Silver wire is chiefly used on account of its cheapness, as almost every bit can be used. The drainage tube is used because the wound, especially before and at the time of sewing up, is freely douched with perchlorid lotion (1 in 1,000) which, though antiseptic, is irritating and gives rise to a certain amount of reaction. Smaller tumors are dealt with after the manner of Charles, without the elastic cord; the incision being begun below and the vessels secured as the incision is extended.

17. **Gastroenterostomy for Benign Stricture of Pylorus.**—Nine cases, all males, are cited by Wanless. His treatment is as follows: In all cases in which stricture is suspected the patients are ordered lavage of the stomach morning and evening, with from four to eight pints of hot water at a temperature increasing from 105 to 115 F. Alkalies at intervals after meals, or an acid tonic, with pepsin, etc., with meals, combined with suitable laxatives and a light diet, are tried for a week, and in some instances for a longer period at the patient's request; if these measures fail to give steady and marked relief, operation is advised. The patient is prepared by a light diet for two or three days, free purgation, a cardiac tonic of strychnin and digitalis, and lavage twice daily, with sterile water or a weak boric acid solution. The teeth should be brushed with a mild antiseptic and the mouth rinsed several times a day with boric lotion. The abdomen and chest are prepared in the usual manner for abdominal section. Early on the morning of the operation the patient is given eight or ten ounces of broth or beef tea, and a soap and water enema given two hours later. The stomach is then washed out with weak boric lotion, and this is repeated before bringing the patient to the table. Strychnia gr. 1/40, atropin gr. 1/100 and morphin gr. 1/4 are usually given hypodermically half an hour before operation. The limbs and lower abdomen and buttocks are covered with flannel and hot water bottles are placed about them on the table. The

stomach is exposed through a three or four inch median incision, beginning from one inch to an inch and a half below the ensiform cartilage. The stomach is first brought into the wound and examined. Gatsroenterostomy having been decided on, the question of choice between the anterior and posterior operation must be immediately determined. In nine cases the posterior operation was done in eight, and the anterior in one. The posterior operation should be chosen in all cases except when the anterior wall of the stomach, by dilatation or displacement, appears to occupy a point anatomically lower than the first portion of the duodenum; or in which the mesenteric vessels in the mesocolon appear to be so large or so numerous that the making of an opening in it by blunt dissection is likely to be attended by troublesome hemorrhage, in which case the anterior operation, though not anatomically so ideal, should be chosen rather than to incur the risk of primary or secondary hemorrhage. Besides, if a large vessel in the mesentery is torn and ligated, the vitality of a corresponding section of the colon may be impaired. In none of the nine cases was the condition of the mesenteric vessels such as to contraindicate the posterior operation. The von Hacker method was used in seven of the cases. Fine silk or celluloid thread and an ordinary straight, round sewing needle were used. In eight of the nine cases the abdominal wound was closed by tier sutures. Wanless has been in the habit of using for the fascia mattress sutures of fine silk and coarse chromicized catgut alternately placed, the peritoneum being sutured in the ordinary manner with a running catgut suture, and the skin with interrupted silkworm gut. He has found it best to use a small cigarette gauze drain in the lower end of the incision, and this is removed in from twenty-four to forty-eight hours. The wound is dressed in the ordinary manner. The plan of feeding is as follows: Every six hours nutritive enemata for the first three or four days; if the bowels are loose, each enemata is preceded by a dose of 15 drops of laudanum injected into the rectum fifteen minutes before the enema is given; by the mouth, sterile water, in dram doses, every half-hour for first twenty-four hours, thereafter barley water in two-dram doses every hour for twenty-four hours, and increased to an ounce every two hours on the third day. Chicken broth or peptonized milk may be given alternately with the barley water, and on the fourth day clear soup broths and peptonized milk, two or three ounces every three hours may be allowed, and on the fifth day the quantity doubled at four-hour intervals. By the seventh day sago may be allowed; on the eighth, rice; by the tenth day bread may be permitted, and thereafter ordinary food. In some cases of great weakness essence of chicken or broth may be allowed after the first twenty-four hours, a dram at half-hour intervals.

Annales des Mal. Génito-urinaires, Paris.

Last indexed XLIV, page 831.

21 (XXII, No. 22.) Les variations de la virulence et la chirurgie urinaire. F. Guyon.
22 Report of French Congress of Urology, 1904. (Commenced in No. 21.)
23 (No. 23.) Rôle des glandes de l'urèthre dans les suppurations périnéales. J. Escat (Marseilles).
24 *Description, fonctionnement et avantages du cloisonneur vésical gradué (urine segregator). E. Boddaert (Ghent).
25 (No. 24.) Sur la pathogénie des kystes dermoides de l'ovaire et du testicule. A. Pappa.
26 Corps étrangers de la vessie (foreign bodies in bladder). A. Pappa.
27 Fixateur pour sondes à demeure (Contrivance to hold permanent catheter in urethra). L. Ferria (Turin).
28 (XXIII, No. 1.) Des rétrécissements inflammatoires de l'urèthre postérieur (strictures). R. Le Fur.
29 Hypospadias balano-pénien. A. Broca.
30 (No. 2.) Dosage de l'uree. Meillère.
31 Les kystes hydatiques pelviens. F. Guyon.
32 (No. 3.) *De la chloroformisation de la vessie (of bladder). F. Guyon.
33 Length of Male Urethra.—Sur la longueur de l'urètre chez l'homme. P. Bazy and M. Deschamps.
34 *Procédé de néphrectomie pour cancer. R. Grégoire.
35 (No. 4.) Anatomie du trigone vésical. R. Uteau.
36 Diet Without Salt.—La pratique du regime déchloruré. Achard.
37 *Separation intravésicale des urines. G. Luys. Id. F. Cathelin. (Commenced in No. 2.)

24 and 37. **Separation Within the Bladder of Urine from Each Kidney.**—Luys describes and illustrates his instrument and also those of others devised for the same purpose, citing the various experiences with the segregators. Those of Cathelin and Boddaert are graduated. The principle of these three is the formation of a dividing wall in the bladder by a flat bag of fine rubber tissue drawn out into shape, after the instrument has been introduced, by a chain or hoop emerging from the body of the instrument.

32. **Effect of Anesthetics on the Bladder.**—Guyon discusses the sensibility of the bladder in health and in disease. In health the sensibility to distension is scarcely modified by chloroform anesthesia, and in morbid conditions it is not modified at all. The sense of contact, however, is entirely abolished by the chloroform. The moment the bladder begins to feel it begins to contract. In operating on the bladder, the depth of the anesthesia can be regulated to its degree of sensibility. If very sensitive, supplementary morphin may be needed, while in the non-sensitive cases a very little chloroform will suffice. In operating on the bladder, therefore, a few days of preliminary treatment of cystitis, etc., will reduce the sensibility and thus allow surgical intervention with a surprisingly small amount of chloroform. Distension of the bladder should be scrupulously avoided both before and during the operation. The symptoms of returning sensibility are readily apparent in the exposed bladder. The wall stretches and loses its suppleness; the field of the operation changes its shape and grows smaller; the play of the instruments is hindered. A few more drops of chloroform and these symptoms of returning sensitiveness subside.

34. **Nephrectomy for Cancer.**—Grégoire's technic allows the removal of the kidney without opening its adipose capsule, and with it removes the suprarenals, the lmphatics and ganglia. A block of wood raises the lumbar region, and the incision outlines a flap, starting from an extension of the anterior axillary line from the costal arch to the iliac crest. The upper end of the incision curves along the edge of the thorax for from 4 to 5 cm., and the lower end follows Poupart's ligament for the same distance or more. The organs within can be drawn up and out, leaving the muscular background entirely free. After the kidney has been detached with the fingers all around, the pedicle is ligated, and the operation is easily completed. Oversight is more extensive than with a lumbar incision and the ablation can be more radical. Experiences on the cadaver and in two cases in the clinic, he thinks, have fully established the superiority of this technic.

Bulletin de l'Académie de Médecine, Paris.

38 (Year XLIX, No. 23.) Influence of Salt-Containing Waters and Infestation of Mines by Larvæ of Anklostomata.—Eaux salées de filtration rendant certains mines de houille refractaires, etc. Manouvriez (Valenciennes).
39 *Tuberculose inflammatoire, ses localisations multiples, en particulier sur l'estomac, l'intestin, etc. A. Poncet and R. Leriche.

38. **Destructive Action of Salt Water on Larvae of Ankylostomata.**—Manouvriez shows by numerous examples that mines fed with sea water or with a saline mineral water are exempt from ankylostomiasis, although the conditions otherwise favor infection. He has found that even as small a proportion as 2 per cent. salt effectually preserves mines from infestation and the miners from ankylostomiasis. He suggests that salt might be scattered around or a water containing 2 per cent. salt used for irrigating, and thus destroy the larvæ much more easily and inexpensively than measures directed against the mature parasite.

39. **Inflammatory Tuberculosis.**—Poncet has long proclaimed that, besides the classic histologic process of tuberculosis, the disease is liable to take the form of rheumatism, with a plastic tendency. This is merely a special localization of a more general process, inflammatory in nature, which is the result of the toxins of the tubercle bacillus inducing an active proliferation of connective tissue. The lack of any specific lesion has caused these inflammatory tuberculous lesions to be overlooked. The researches of the last two or three years have demonstrated that other agents are liable to cause the production of the so-called tuberculous follicle, while, on the other hand, the tubercle bacillus is liable, by its mere presence, to induce the ordinary lesions of common inflammation. He

discusses those observed in the stomach and in the intestines. Tuberculosis of the stomach may assume the ulcerative or hypertrophic form or the fibrous form from the start. These false tumors generally occupy the pyloric region, and are distinguished by infiltration of the submucous coat, with thickening and fibrous organization of the connective tissue. The mucosa is intact, and the peritoneal reaction may be slight or intense. This simple hypertrophic submucous sclerosis has been noted in tuberculous cadavers, but has not been attributed to its true cause hitherto, although it has frequently been described in the autopsy findings. Similar lesions occur in the intestines, breast, thyroid and elsewhere, and he suggests the term "inflammatory tuberculosis" as best describing its characteristics. The entire absence of tuberculous follicles and of giant cells does not contradict this assumption, in his opinion.

Revue de Médecine, Paris.

Last indexed XLIV, page. 77.

40 (XXIV, No. 11.) Sur le diagnostic des abcès du foie (of liver). H. de Brun.
41 Etude de la rupture spontanée de l'aorte. Tolot and Sarvonat.
42 *Etude de la polymyosite. Preobrazhenski and Margulies. (Commenced in No. 10.)
43 Ferments solubles, toxins, toxalbumines, anticorps, antitoxines, alexines, cytases. A. Chassevant.
44 (No. 12.) La maladie de Banti, existe-t-elle? A. Gilbert and P. Lereboullet.
45 *De l'accélération et du ralentissement du pouls per numération accélérée et ralentie â haute voix (influence on pulse of slow and rapid counting). Bernheim (Nancy).
46 Gangrène multiple spontanée de la peau (of skin). M. Truffi.
47 *Sur l'origine organique des certaines phobies. P. Hartenberg.
48 *Des affections syphilitiques du coeur (of heart). J. Cecikas (Bucharest).
49 (XXV, No. 1.) Alimentation des chiens tuberculeux (dogs). C. Richet.
50 Nouvel essai de cardiographie clinique. A. d'Espine (Geneva).
51 Tuberculose expérimentale du coeur (of heart). L. Bernard and M. Salomon.
52 Sur un nouveau syndrome clinique d'origine très probablement paludique: "le chloropaludisme." Sakorrhaphos (Athens).

42. **Polymyositis.**—A case is described in detail, with the autopsy findings. The patient was a woman of 25, and the affection terminated in respiratory paralysis in about nine months. The first symptoms were noted after prolonged exposure to cold. The pains in the muscles occurred spontaneously and could also be elicited on pressure. The muscles were weak and emaciated. The flexors of the fingers were contracted in both hands. The kneejerk was weak, and the arm reflexes were all lacking. The heart action was irregular and intermittent, with small pulse, low pressure, and profuse sweats. There were no specific characteristic changes found in the muscles.

45. **Changes in Pulse When It Is Counted Aloud.**—Bernheim gives tracings to sustain his statements that if one counts the pulse of another person aloud, and hastens the counting so as to make it faster than the pulse really is beating, the pulse will become accelerated to correspond. The rate increases from 6 to 15 beats a minute. The increase is only about half this when the arterial pressure is above normal. It commences about the fortieth second and reaches its maximum from the second to the third minute in case of normal pressure. With hypertension the effect is not apparent for about three minutes, but persists longer. When the counting is slower than the pulse, the latter is retarded to correspond. These phenomena demonstrate, he thinks, that suggestion is able to act on the automatic functions without the intermediation of the will.

47. **Organic Origin of Certain Phobias.**—A woman complained of severe vertigo whenever she crossed a bridge, looked down from a height or rowed in a boat. There were also "palpitations" and emotional distress. Hartenberg concluded, after observing one of the attacks, that there was no real vertigo, but merely the fear of having it. The "palpitations" were the primal cause. They suggested impending vertigo, and drugs to reduce the excitability of the heart, with a little hydrotherapy and lighter diet, soon banished the "palpitations" and with them all traces of the phobia. An organic cause can be found for every phobia, he thinks, if persistently sought for.

48. **Syphilitic Affections of the Heart.**—Cecikas draws the clinical picture from eleven cases and emphasizes the necessity for prompt, vigorous and persevering mercurial treatment.

Semaine Médicale, Paris.

53 (XXV, No. 23.) Proceedings of International Congress on Accidents to Working Men.—Les accidents de travail au point de vue médical. H. Le Meignen. See foreign news columns on page 1995 of last volume.
54 L'épidémie actuelle de méningite cérébro-spinale dans l'Europe centrale.

Berliner klinische Wochenschrift.

55 (XLII, No. 20. May 15.) Die Balneotherapie in der Nervenheilkunde (in nervous affections). A. Eulenburg.
56 Ueber die Combination von Excisions- und Roentgen-Therapie bei der Morbus Basedowii. C. Beck (New York).
57 Dr. Paskal Josef v. Ferro, ein Hydrotherapeut des XVIII Jahrhunderts (century). R. Bassenge.
58 *Die Verwertung der Hydrotherapie in der Behandlung der Herzkrankheiten. S. Munter (Berlin).
59 Changes in Nails After Acute Infections.—Nagelveränderungen nach akuten Krankheiten. Eger.
60 Mechanismus der Antiamboceptor-Wirkung. P. Ehrlich and H. Sachs. (Commenced in No. 19.)
61 Address at Dedication of Berlin Institute of Hygiene. M. Rubner.
62 *Epidemiologie der Tuberkulose. Kutscher.
63 *Hydro-Dilator zur Extraktion von Fremdkörpern aus der Speiseröhre (foreign bodies in esophagus). P. Bakaleinik (Kiev).

58. **Hydrotherapy in Heart Affections.**—Munter is convinced that with hydrotherapy we are able scientifically to control and to guide the natural curative powers of the organism. In nervous heart affections, the torpid cases require stimulating, and the overexcited ones soothing measures. An important differential sign in nervous heart affection is increased desire to urinate with increased output of urine. This indicates good functional capacity on the part of the heart, and excludes an organic lesion. On the other hand, an organic heart affection is generally associated with a sensation of distension in the abdomen with desire to defecate, which is probably due to congestion in the abdomen.

62. **Epidemiology of Tuberculosis.**—Kutscher analyses articles on this subject published within late years in Turkey, Greenland, Japan and elsewhere. Breast feeding of infants is universal in these countries, and yet the proportion of tuberculous is as large or larger than in Europe. This, he thinks, disproves von Behring's statements in regard to the importance of cow's milk in infant feeding for the etiology of tuberculosis.

63. **Water Bag for Extraction of Foreign Bodies in Esophagus.**—Bakaleinik's "hydro-dilator" has been mentioned previously in these columns. He has found it very useful for extraction of foreign bodies in the esophagus. The apparatus consists of an air pump connected with a rubber tube closed at the farther end. About 8 cm. from the closed end of the tube a dilatable bag of thin rubber is introduced in the tube. The tube and the collapsed bag are inserted in the esophagus and the bag is then inflated with the air pump, forming a soft, flexible, round ball. It distends the walls and thus loosens an impacted foreign body and pushes it along ahead of it as the tube is withdrawn, until the foreign body can be seized and extracted from above.

Dermatologische Zeitschrift, Berlin.

Last indexed XLIV, page 78.

64 (XI, No. 12.) *Beiträge zur Pathologie der Tuberkulide im Kindesalter (in children). G. Nobl (Vienna).
65 Blutveränderungen bei "Pemphigus foliaceus" Cazenavi (blood changes in). G. Grinew (Charkow).
66 *Morbid Changes in Urine in Secondary Syphilis and Under Mercurial Treatment.—Ueber die krankhaften Veränderungen des Urins bei sekundärer Syphilis und Quecksilberkuren. E. Adler.
67 (XII, No. 1.) *Protozoa in Focal Affections of Inherited Syphilis.—Ueber hereditär-syphilitische Herderkrankungen bei Kindern und die Verbreitung der protozoischen Parasiten in derselben. Max Schüller (Berlin).
68 Spontane Involution eines Riesen-Naevus. L. Spitzer.
69 *Rotations-Instrumente. Kromayer (Berlin).
70 Ueber Eucalyptus-Dermatitiden. Galewsky (Dresden).
71 Ueber Behandlung des Lupus vulgaris der Haut und Schleimhaut durch hoch-frequente Funkenentladungen (high frequency spark discharges). H. Strebel.
72 (No. 2.) *Kombination von Psychose und Hautkrankheit (cutaneous affection). Raschkow.
73 Thrombophlebitis gonorrhoica. Voss.
74 Ueber Pseudoalopecia atrophicans crustosa. W. Wechselmann (Berlin).
75 Correspondence with Finsen in Regard to Phototherapy.—Gedankenaustausch mit Professor Niels R. Finsen über Lichttherapie. H. Strebel (Munich).
76 (No. 3.) Anatomie der Dermatitis papillaris Capillitii (Kaposi). J. Guszman (Budapest).

77 (No. 4.) Cutaneous Linear Cicatrices of Inherited Syphilis. —Ueber die linienförmigen Narben bei der her. Syphilis. F. Poor (Budapest).
78 Lichen planus zoniformis. F. Pinkus.
79 Tuberculosis of Parrot Tongue.—Zur Zungentuberkulose der Papageien. E. Delbanco.
80 (No. 5.) *Ueber Arsenvergiftung auf Grund einer mikrochemisch histologischen Methode (arsenic poisoning test). J. Justus (Budapest).
81 Ueber die Pagetsche Krankheit (Paget's disease of the nipple). M. A. Tschlenoff (Moscow). (Commenced in No. 2.)

64. **Tuberculids in Children.**—Nobl noticed a papulo-necrotic exanthema in 13 out of 430 children with some cutaneous affection. He gives a detailed description of each, arguing that they belong in the category of specific tuberculous cutaneous processes. The lesions did not show any special reaction to tuberculin, and seldom displayed the slightest influence from it. No tubercle bacilli were found in any of the lesions. He explains these negative findings as not contradicting the tuberculous nature of the processes, for reasons which he enumerates.

66. **The Urine in Secondary Syphilis and Under Mercurial Treatment.**—All the syphilitics in Ledermann's practice at Berlin have their urine examined before, during and after treatment. By this means he has been able to detect a number of cases of syphilitic nephritis and also of irritation of the kidney from the mercurial treatment. Those in the first class were cured by the mercury, while those in the second were aggravated by it. The latter category includes 31 of mercurial albuminuria, which is a proportion of about 5 per cent. of all the syphilitics taking mercurial treatment. The particulars of the various cases are tabulated. The albuminuria promptly subsided on suspension of the drug. In the two cases of actual nephritis described, the onset of the albuminuria coincided with the appearance of the roseola.

67. **Schüller's Parasites in Inherited Syphilis.**—Since 1899 Schüller has had opportunity to examine a large number of children with lesions of inherited syphilis. Careful records were kept of 62, all but 21 of whom were less than a year old. The protozoon-like parasites which he has previously described were never found in the pemphigus lesions of any of these children, but they were invariably present in abscesses, irrespective of whether the suppuration was in the skin, muscle, periosteum, mammary gland or elsewhere. Local recurrences of the morbid process are due to the growth of new colonies from the walls of the former focus. The minute spores of the parasite grow into the crevices and spaces of the adjacent bone, and carious destruction follows the granulating gummatous process. This was observed frequently in children with a syphilitic heritage. The various phases of the growth of the parasite are illustrated, and Schüller relates that these phases harmonize remarkably with the clinical picture and its variations. Suppuration of syphilitic lesions is more common in young children than in adults, possibly owing to the more numerous chances for secondary hematogenic infection.

69. **Small Drills in Dermatology.**—Kromayer's small circular knives or punches, driven by a foot motor, for use in epilation, were mentioned in THE JOURNAL, page 1074 of the last volume. They are indicated likewise, he says, for opening small abscesses and to stimulate absorption in rebellious pathologic processes, as, for instance, in obstinate syphilides, etc. Some of the drills or punches are similar to those used by dentists. They have proved very useful for excision of warts, nevi and pigmented patches in which the derma must be respected and the excision done above it to refrain from leaving a scar. This is accomplished by applying the punch through a hole of the same size in a thin metal plate. By pressing on the plate, the disc of skin outlined by the cutting edge of the punch protrudes into the hole in the plate. A sickel-shaped knife is then used to slice off this protruding disc of epidermis, not touching the derma below. The defect left heals without leaving a trace, as is always the case, he says, when the derma is intact. Kromayer also uses a drill and fraise in dermatologic work, borrowed from the dentists. He thinks that they have all the advantages, and more, of the curette without its drawbacks. An anesthetic is seldom required. He has punched out over 200 hairs or 300 acne points at a single sitting, without objections from the patients. In other cases, he uses the Schleich infiltration method or ethyl chlorid for local anesthesia.

72. **Combination of Psychosis and Cutaneous Affection.**—Raschkow reviews the dozen or more published cases of this association of a mental with a cutaneous affection, and reports another in a woman of 44. She had long suffered from migraine, but had no morbid heritage. After a period of overwork, a confusional psychosis developed, with hallucinations and anguish. During a phase in which the anguish sensation had nearly subsided, her face became congested and severe acne rosacea developed. The exacerbations of the mental and of the cutaneous affections alternated, one subsiding as the other increased in intensity. This alternation was marked several times until both affections permanently vanished.

80. **Test for Arsenic Poisoning.**—Justus has been studying the possibility of detecting arsenic in the tissues with the microscope, and the technic best adapted for the purpose. By transforming the arsenic in the tissues into arsenic trisulphid, a striking reaction can be obtained with it even in a very thin layer; the color is characteristic, and the localization of the substance in the tissues shows the distribution of the arsenic and throws light on its functions. Arsenic is transformed into the trisulphid by passing sulphuretted hydrogen through its solution. The characteristic odor is lost at once, and the fluid turns yellow. A yellow precipitate is thrown down by long standing or by addition of a concentrated solution of HCl, NaCl or $AlCl_3$. This yellow precipitate is arsenic trisulphid, and the greenish yellow crystals are readily recognized under the microscope. In examining tissues for arsenic, they are first fixed in 4 per cent. formalin for a day or so, then rinsed, cut into very thin sections, and placed in a fresh, neutral solution of sulphuretted hydrogen for three or four days at a temperature of from 60 to 80 C.; they are then rinsed with alcohol and embedded in celloidin. The sections are then placed for from ten to twenty minutes in a 5 to 10 solution of hydrochloric acid to dissolve out the iron sulphid, and then rinsed several times, after which they are stained, cleared up in carbol xylol and mounted in balsam. On applying this test for arsenic in experimental research it was found that arsenic injected subcutaneously combined first with the plasma of the red corpuscles. This technic readily revealed its presence here and in the various organs, in the epithelium of kidneys and intestines, and especially in the muscle and liver cells, sweat glands, stratum corneum and hairs.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

82 (XXXI, No. 20.) *Prognose und Therapie der Albuminurie. Fürbringer.
83 *Karlsbad oder Kissingen? I. Boas (Berlin).
84 Ueber jugendliche Paralyse (juvenile). . H. Vogt and O. Franck.
85 *Zur Behandlung der epidemischen Meningitis. C. França (Lisbon).
86 Spirochetes in Syphilitic Infant.—Vorkommen von Spirochäten in inneren Organen eines syph. Kindes. A.. Buschke and W. Fischer.
87 *Artificial Respiration.—Ueber künstliche Atmung. G. Herter.
88 *Non-operative Treatment of Angioma.—Operationslose Behandlung der Angiome. M. Neumann.
89 Zur faradischen Behandlung der Fibromyome des Uterus. Witte.
90 Die Sublimat-Hände-Desinfektion des neuen preussischen Hebammenlehrbuchs (in new manual for midwives). F. Ahlfeld. Id. H. Fehling.

82. **Prognosis and Treatment of Albuminuria.**—Fürbringer remarks that dietetic treatment of nephritic albuminuria is more important than physical measures, while medicine is of comparatively slight benefit except against the underlying cause. Cyclic albuminuria, he believes, is always of pathologic origin, and may be the manifestation of an insidious nephritis. When this can be excluded, physical measures will be found the best means of restoring conditions to normal. Strengthening the heart by muscular exercise is useful if overexertion be avoided. He prefers cold and tepid to hot baths, but the proper reaction with warmth and rewarming of the surface must be obtained or they do more harm than good. One of the principal benefits of the cold baths is the stimulation of the appetite. The clothing must protect thoroughly against cold and dampness. Massage and elastic compression of the legs never did any good in his experience. The diet in nephritic albuminu-

ria should seek to compensate the losses of albumin. Cooked eggs, meat, both dark and light, fish, and vegetable albumin should be taken in abundance. Milk is less a strengthener of the heart than meat, and its frequent drawbacks of dyspepsia and urinary and intestinal disturbances have dethroned it from its former exalted position, although the absence of elements that irritate the kidney and its "rinsing" properties theoretically rank it above meat. The more varied the combinations of the above articles of diet, the better and stronger the patient will feel. The fear of increasing the albuminuria by the copious intake of albumin will be found to have no basis in fact.

83. **Carlsbad or Kissingen?**—Boas emphasizes the fact that no patient with vague symptoms should be sent to any special watering place. Only the clearly defined cases afford indications that enable balneologic measures to be prudently and successfully applied. Too often the cases of vague, chronic gastrointestinal catarrh cast off their mask and disclose their cancerous nature immediately after a course of mineral waters. He reviews his twenty years of experience with gastrointestinal affections under balneologic treatment, and formulates from empiric observation the indications for the various thermal waters. He has scarcely ever noted any benefit from them in cases of motor disturbances in stomach or intestines. Large amounts of mineral waters actually increase the subjective discomfort. In "stagnation insufficiency" of the second degree, as also in all forms of "psychogenic" dyspepsia, courses of mineral waters are absolutely contraindicated. The salol or iodipin tests will generally inform the physician in regard to the gastric motor functions without resort to the stomach tube. "Psychogenic" dyspepsia frequently accompanies organic affections, and it may be wise to try a preliminary course of mineral waters at home to learn whether or not the case will improve under a course at Carlsbad or elsewhere. Only when the water is well tolerated in the preliminary course is a continuance advisable. None of the mineral waters have any permanent effect on merely nervous intestinal affections. He has never known of a case of membranous enteritis cured by a course of mineral waters.

85. **Epidemic Cerebrospinal Meningitis.**—Franca relates that during the epidemic of cerebrospinal meningitis in Lisbon, in 1902, the mortality of 47 cases in which the patients were treated by lumbar puncture alone was over 63 per cent. In 9 patients treated by lumbar puncture and injection of mercury cyanate it was over 66 per cent., while it was only 29.3 per cent. in 58 treated by lumbar puncture and injection of a 1 per cent. solution of lysol. He withdrew from 25 to 50 c.c. of the cerebrospinal fluid and injected from 3 to 9 c.c. of the lysol solution in children, and from 12 to 18 c.c. in adults. The injections were repeated once a day until the fluid was found to be sterile, usually only a question of a few days. With this method of treatment, no recurrences were observed; the duration of the sickness was much shortened, and the diplococci rapidly disappeared from the cerebrospinal fluid. The germs sometimes persisted for months in the cerebrospinal fluid of patients treated by other technics. The patients treated with the lysol were further distinguished by the lack of emaciation and of severe trophic disturbances, and by the much smaller proportion of consecutive mental disturbances, paralyses, etc.

87. **Artificial Respiration.**—Herter recommends a combination of the Marshall Hall, Sylvester, Howard and Brosch methods of artificial respiration, which he describes in detail, laying special stress on the importance of keeping the tongue drawn out of the mouth. The ideal method is to seize the tongue with Pean forceps and draw it out of the mouth, letting it hang down on one side, the forceps fastened to the body by a band passed around the head. If forceps are not at hand, one person must hold with his fingers the tip of the tongue in the corner of a handkerchief. A person kneeling at the head of the subject should devote his entire attention to the tongue, while counting aloud his own breathing rate. An aid on each side makes the Sylvester movements for the arms, while the fourth aid, kneeling astride of the subject, makes the Howard movements, not removing his hands during the intervals, but merely suspending pressure with them, carefully avoiding any pressure of the abdomen that might force stomach contents into the throat, with consequent aspiration. This danger is a real one; aspiration is rendered less imminent by having the head low. If only three assistants are at hand, the one kneeling astride must take charge of the tongue, as well as of the Howard movements, and if there are only two, one must make the Sylvester movements for both arms. If only one is present, the arm movements should not be attempted, and the assistance should be restricted to holding the tongue and the Howard movements.

88. **Bloodless Treatment of Angiomata.**—Neumann gives illustrations of 2 out of 700 cases he has treated during the last five years with eminently favorable results. He applies an emulsion of from 5 to 10 parts of zinc chlorid in collodion to 100 parts. A piece of adhesive plaster is first placed over the angioma, with a hole corresponding to the lesion, but somewhat smaller, as the action of the chlorid extends a little way under the edges of the plaster. This dressing is removed the next or on the second day, and the lesion cleansed and left to nature under a fresh, merely protecting, dressing. The defect usually heals rapidly, sometimes in a week. If relics of the angioma still persist, he applies an ointment containing arsenous acid and sulphur, each 4 parts with unguentum cerei to 100 parts. The sound parts are protected with fenestrated gauze, and this paste is applied on another piece of gauze. In two or three days this dressing should be removed. Zinc chlorid in the above dosage has no toxic action, and no absorption need be feared, even on an area of 30 or 40 square cm., but the arsenous acid is liable to cause toxic accidents. When possible, he substitutes parenchymatous injection of zinc chlorid. The latter alone is sometimes successful in curing certain cases, for example, an extensive angioma of the upper lip was cured by this means.

Deutsche Zeitschrift f. Chirurgie, Leipsic.

Last indexed XLIV, page 1232.

91 (LXXVI, No. 1.) Hemophilia Through Four Generations.—Die Bluterfamilie Mampel in Kirchheim bei Heidelberg. H. Lossen.

92 Zur Pathogenese und Radikaloperation der grossen Mastdarmvorfälle (large rectal prolapse). D. Wenzel.

93 *Ueber den therapeutischen Ureter-Katheterismus. G. v. Illyes.

94 Experimentelle und histologische Beiträge zur Anatomie und Pathologie des Gelenkknorpels (joint cartilage). R. Seggel.

95 Eight Cases of Plastic Restoration of Entire Lower Lip.—Cheiloplastik bei totalem Verluste der Unterlippe. Eine Kombination der Morganschen Visierplastik mit Schultens Schleimhaut-Muskelplastik. E. Sandelin.

93. **Therapeutic Catheterization of the Ureters.**—Seven cases of suppuration in the kidney pelvis or in the ureter were treated by catheterization of the ureter. It promptly evacuated the pus and allowed the pelvis to be thoroughly rinsed after nephrotomy in some of the cases. More or less benefit was derived in every instance. Illyes remarks that the harmlessness and simplicity of this method of treating kidney affections should commend it for more general use. It may cure entirely or at least relieve some serious symptom. The above cases are reported from Dollinger's clinic at Budapest. The patients were from 21 to 56 years of age, and the primary cause of the trouble had been a kidney stone in most cases. In others there was ectopia of the bladder or ascending pyonephrosis.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed XLIV, page 1569.

96 (LIX, No. 4.) Zur Bakteriologie des Entero-Katarrhs. B. Salge.

97 *Water and Salts in Relation to Fluctuations of Infants' Weight.—Wasser und Salze in ihren Beziehung zu den Körpergewichtsschwankungen der Säuglinge. W. Freund (Breslau).

98 Influence of Nutritional Disturbances on Chemical Composition of Infant's Body.—Einfluss von Ernährungsstörungen auf die chem. Zusammensetzung des Säuglingskörpers. F. Steinitz.

99 *Clabbered Milk for Sick Infants.—Erfahrungen mit gelabter Kuhmilch in der Ernährungstherapie kranker Säuglinge. Reinach.

100 (No. 5.) Temperature of Infants at Night.—Ueber die nykthemeralen Temperatur-Schwankungen im ersten Lebensjahre des Menschen. I. Jundell (Stockholm).

101 Einfluss der Serum-Behandlung auf die Diphtherie-Mortalität. E. E. Faber (Copenhagen).

102 Ueber Masern-Scarlach-Fälle (measles-scarlet fever cases). B. Hukiewicz.

103 (No. 6.) *Ueber Rubeolæ und Doppel-Exantheme. D. Popischill (Vienna).
104 2 Fälle von Influenza-Bazillus-Meningitis. I. Jundell.
105 (LX, No. 1.) Passage of Antitoxin Through Intestinal Wall in infants.—Ueber den Durchtritt von Antitoxin durch die Darmwand des menschlichen Säuglings. B. Salge.
106 Mucous Formation in Stomach Before and After Birth.—Ausdehnung der Schleimbildung in den Magenepithelium des Menschen vor und nach der Geburt. P. Reyher.
107 Blutbefunde bei Chorea minor und Tic convulsif (blood findings). Schaps.
108 Zur Vererbung der Syphilis (inheritance of). Misch.

97. **Retention of Water and Salts in Relation to Weight of Infants.**—Freund's extensive research, he thinks, has established the fact that the sudden large increase in weight sometimes noticed in infants is due to retention of water. It occurs only in pathologic conditions and seems to be connected with processes of repair. Nothing of the kind was observed in breast-fed infants. He advances a theory to explain various features in the metabolism and the localization of the water in the organism. Certain infants take on fat at the same time as they retain water, while others retain smaller amounts of water to substitute fat consumed in undue amounts.

99. **Clabbered Milk for Sick Infants.**—Reinach gives the detailed histories of 44 out of 51 sick infants whom he has been feeding with "junket." The milk is artificially clabbered with lab ferment, according to von Dungern's directions. The clots are much finer than from ordinary milk. The results in the chronic cases scarcely surpassed those obtained with ordinary milk, but in acute gastrointestinal troubles the results were much better. Vomiting and restlessness after eating ceased after substitution of the clabbered milk in many of the cases, as also symptoms of irritation on the part of the central nervous system.

103. **Rubeola and Double Exanthemata.**—Pospischill discusses the differential diagnosis of measles with an abnormal course. The red cheeks of rubeola are characteristic, as also the features of the exanthema, which he describes in detail. He further describes 2 cases of simultaneous rubeola and scarlet fever, calling attention to the confluence, beet-like consistency and brick-red color when scarlet fever complicates any of these eruptive diseases. These findings are characteristic long before any scarlatinal exanthem has become visible. When scarlet fever is superposed on fresh measles the exanthema resembles neither typical measles nor the scarlatinal eruption. Experience apparently shows that the commencement of the measles eruption increases the predisposition to scarlet fever and varicella has a similar effect. In one of his cases, the child had a mild scarlet fever during an attack of rubeola, with a second, severer recurrence of the scarlet fever in less than a month, accompanying the outbreak of true measles. The association of two eruptive diseases is much more frequent than generally recognized. He is convinced that the overwhelming majority of streptococcus general infections in cases of measles and varicella are due invariably to secondary infection from septic scarlet fever. The acute hemorrhagic nephritis which sometimes follows the eruptive diseases is unmistakably the result of scarlet-fever infection. Children convalescing from scarlet fever should be isolated from fresh cases of scarlet fever, and children who have received serum treatment should be kept away from fresh cases of scarlet fever until after the ninth day.

Monatsschrift f. Geb. u. Gynäkologie, Berlin.

Last indexed XLIV, page 1650.

109 (XXI, No. 5.) Examination of Incipient Hydatidiform Mole.—Untersuchung-sergebnis einer Blasenmole im Frühstadium. A. Stoffel.
110 Ueber chorioepitheliomartige Wucherungen in Hodenteratomen (in teratoma in testicle). R. Emanuel.
111 Follicles with Several Ova and Mononucleated Ovum Cells.—Ueber mehreiige Follikel und mehrkernige Eizellen. J. Schottlaender.
112 Beitrag zur abdominalen Radikal-Operation des carzinomatösen Uterus. R. Lampe.

Virchow's Archiv, Berlin.

Last indexed, XLIV, page 1971.

113 (CLXXIX, No. 1.) Descending Degeneration of Posterior Columns.—Ueber absteigende Hinterstrangdegeneration. S. Matuszewski.
114 Senile Flattening of the Trachea.—Ueber Alterssäbelscheidentrachea. M. Simmonds.
115 *Experimental Production of Lymphocyte Exudates.—Ueber experimentelle Erzeugung von Lymphozytenexsudaten. Fr. Proscher.
116 Changes in Muscles Where Snake Venom Is Injected.—Pathologisch-histologische Veränderungen der quergestreiften Muskeln an der Injektionsstelle des Schlangiftes. G. P. Zeliony.
117 Islands of Gastric Mucosa in Esophagus.—Ueber die Schafferschen Magenschleimhautinseln der Speiseröhre. K. Schwalbe.
118 Zur Kenntnis der Mamma-Cysten mit butter-ähnlichem Inhalt. L. Samelson-Kliwansky.
119 Ueber das Adenocarcinom und Adenom der Leber (of liver). K. Wegelin.
120 Ueber die Entkapselung der Niere (decapsulation of kidney). G. Herxheimer.
121 (No. 2.) *Ultramikroskopische Untersuchungen. L. Michaelis.
122 Cell Forms in Rabbit Omentum.—Ueber die im grossen Netz des Kaninchens vorkommende Zellformen. G. Schwarz.
123 *Inhalation of Bacilli.—Ueber Bazilleneinatmung. M. Saenger.
124 Zur Entstehung der akuten allgemeinen Miliar-Tuberkulose. H. Silbergleit.
125 Plague at Manila.—Ueber latente und ambulatorische Pest. M. Herzog (Manila).
126 Zur pathologischen Anatomie der Gicht (gout). F. Rosenbach.
127 *Origin of Varices in Respect to Their Dependence on the Innervation of the Vascular Nervous System.—Entstehung der Varicen in Abhängigkeit vom Gefässnervensystem. S. Kashimura.

115. **Experimental Production of Lymphocyte Exudates.**—Proscher discovered, in the course of his studies on immunity to tuberculosis, a substance which induced an exudate, consisting almost exclusively of lymphocytes, when injected into guinea-pigs. This substance is derived from the intracellular toxin obtained from tubercle bacilli. When this was injected into the peritoneum of guinea-pigs, he was able to follow with the microscope the transformation of endothelium into mononuclear cells. This supplies, he states, the missing link in the testimony which demonstrates that the lymphocytes are formed out of the fixed tissue cells. It further throws light on the development of the tubercle.

121. **Ultramicroscope Researches.**—Michaelis' work was reviewed editorially on Page 1451 of the last volume of The Journal.

123. **Inhalation of Bacteria.**—The results of the experimental research described are summarized in the statements that nothing to date has absolutely demonstrated that bacilli make their way into the lungs exclusively or even almost exclusively by way of inhalation. The number of bacilli actually penetrating into the lungs by way of inhalation is incomparably smaller than the amount inhaled but caught along the walls of the upper air passages. On the other hand, everything tends to show that bacilli getting into the mouth and throat by way of the food or by inhalation or otherwise can find their way into the lymph stream and thus be swept to the lungs through the lymphatics.

127. **Origin of Varices.**—Kashinura presents evidence to sustain his assumption that the veins and the vasa vasorum stand under the direct influence of the nervous system. Their functioning is dependent on the supply of blood in the vessels in the walls of the veins, and this supply is under the control of the sympathetic nervous system. Abnormal irritation of the nerves of the vein musculature induces hyperplasia in time, with consequent hyperfunction on the part of the vein. When a period of abnormally low stimulation follows as the reaction to the overstimulation, the blood current slows down and a more or less permanent stasis hyperemia results. This entails, in time, the disappearance of true muscle fiber and an increase in the collagen fibers in the walls of the vein. A similar process is liable to occur in the heart musculature, and explains some of its pathology as well as the etiology of varices in the saphena.

Gazzetta degli Ospedali, Milan.

Last indexed XLIV, page 1891.

128 (XXVI, No. 13. *Prognostic Importance of Leucocyte Formula in Cerebrospinal Fluid.—Valore prognostico, etc. C. P. Goggia.
129 Auscultation of the Mouth in Relation to Cardio-pulmonary Respiration.—Ascoltazione della bocca. G. Binetti.
130 *Sulla diagnosi dei tumori profundi del grande bacino (in pelvis). R. Cecca.
131 *Legatura della carotide esterna. A. Gaetano.
132 *Considerazione su alcune infezioni da piogeni. A. Balduzzi.
133 (No. 16.) Evolution of Tubercle Under Direct Action of Specific Antibacillary Serum.—Come evolve il tubercolo, etc. G. Ghedini (Maragliano's institute, Genoa).
134 2 casi di atrofia dell ottico conseguente a trauma del capo (optic atrophy after head injury). A. Carbona.
135 *Pathogenesi della tubercolosi polmonare e alla sua terapia specifica. Ferrer Piera (Barcelona).
136 *Sieroterapia dell' angina Ludwig. G. Pozzolo

128. **Cerebrospinal Fluid in Meningitis.**—Goggia mentions the constant predominance of small mononuclear elements in the cerebrospinal fluid during diplococcus meningitis in two men. One died. As the other entered on convalescence, polynuclear elements became constantly predominant.

130. **Diagnosis of Retroperitoneal Tumors.**—Cecca calls attention to a sign of a deep-seated tumor in the retroperitoneal region corresponding to the iliac fossa. He has reproduced it on the cadaver by making an artificial tumor, and explains the mechanism producing it. The patient lies supine on a table (a bed is too soft for the purpose); the operator stands on the side of the supposed tumor. If on the right side, he places his left hand on the lower quadrant of the abdomen and tries to palpate the tumor. When he feels the mass, with the other hand he grasps the leg of the same side, held as stretched and rigid as possible, taking hold at about the lower third of the tibia. He first flexes it lightly on the pelvis and then abruptly draws it down until the heel touches the table. The knee must be kept rigid, without flexing, all the while. As the heel touches the plane surface, the hand on the pelvis feels a sudden impact, synchronous with the contact of the heel with the flat surface. This impact or ictus, as he calls it, is not felt, in case of tumors situated elsewhere, while an experience of years has confirmed its constant presence when a tumor is located in this region.

131. **Ligature of External Carotid.**—Gaetano's patient had been stabbed in the throat, the knife passing through the parotid gland into the pharynx. It was impossible to tell which vessel had been injured in the deep wound. To arrest the hemorrhage, a ligature was thrown around the external carotid through an incision along the anterior margin of the sternocleido muscle. The desired result was attained and the patient rapidly recovered.

132. **Relations Between Pyogenic Affections.**—Balduzzi relates a large number of instances from his own experience in which various members of a family were attacked by erysipelas, follicular tonsillitis or acute articular rheumatism almost simultaneously. One member of the family would have the tonsillitis, while the others soon after would present articular rheumatism or erysipelas of the face. In 2 cases, an abscess in the lower left lung, following pneumonia, was followed about a month later by acute articular rheumatism. In another, an abscess in the axilla was the similar precursor of rheumatism soon after. In one family, the mother had erysipelas and her child follicular tonsillitis, commencing almost simultaneously, while the nurse followed with tonsillitis three days later. Two brothers presented the lesions of erythema nodosum almost simultaneously, one of them having just recovered from a catarrhal sore throat. The relations between these various pyogenic affections are unmistakably evident in his account. They are all due to the same cause, he asserts, and are merely different manifestations of the same pyogenic micro-organisms. He is an ardent advocate of the Baccelli method of subcutaneous injection of carbolic acid in pyogenic infections, and he treated all the affections mentioned above by this means, alone or combined with sodium salicylate. The latter alone was never so efficient as the carbolic acid, which he regards as the specific, almost sovereign remedy for pyogenic infections. He has had no experience with serum treatment.

135. **Tuberculosis and Specific Treatment.**—Piera refers to a large number of patients completely cured of tuberculosis by serotherapy, and then discusses another series in which slight, if any, improvement followed the specific treatment. His experience has been much more favorable with the Maragliano serum than with others. It certainly neutralizes the action of the protein and toxalbumin toxins of the tubercle bacillus, but he is convinced that not all the toxins secreted by the tubercle bacillus are capable of creating antitoxins. Those bacilli which possess large quantities of the toxin "necrosin" still exert a toxic action, notwithstanding that their protein and toxalbumin elements are neutralized by the antitoxin which their presence elicits. This class of bacilli are unconquerable by the phagocytes, and thus the tuberculous process is uninfluenced by the serotherapy. These are the bacilli that take stains particularly well. Those that stain feebly, on the other hand, succumb in the struggle with the phagocytes, and the patient recovers.

136. **Ludwig's Angina.**—Pozzolo reports 3 cases of cellulitis of the sublingual and submaxillary regions. The affection in each originated in a carious tooth. One was treated with antistreptococcus serum, with promptly favorable results.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

System of Physiologic Therapeutics, Under the General Editorial Charge of S. Solis-Cohen. Vol. VII—Mechanotherapy and Physical Education, Including Massage and Exercise, by J. K. Mitchell, M.D., and Physical Education by Muscular Exercise by L. H. Gulick, M.D. Pp. 420. With 229 Illustrations. Vol. VIII—Rest, Mental Therapeutics, Suggestion, by F. X. Dercum, M.D., Ph.D. Pp. 332. Vol. XI—Serumtherapy, by J. McFarland; Organotherapy, O. T. Osborne, M.A., M.D.; Radium, Thorum and Radioactivity, by S. G. Tracy, B. Sc., M.D.; Counterirritation, External Appplications, Bloodletting, F. A. Packard, M.D. An Outline of the Principles of Therapeutics, with Especial Reference to Physiologic Therapeutics by the Editor and an Index-digest of the Complete System of Eleven Volumes. Illustrated. Pp. 388. Price, $2.50 per volume. Philadelphia: P. Blakiston's Son & Co. 1905.

A Manual of Acute Poisoning, Giving Classification, Varieties, and Individual Substances Usually Met with in Emergency Poisoning, etc., Together with Methods for Use in First Aid to the Injured. By J. W. Wainwright, M.D. Cloth. Pp. 96. Price $0.75. New York: E. R. Pelton, 1905.

Come Posso Mantenermi Sano e Prolungarmi la Vita? Prof. Giovanni Galli, Assistente nella R. Clinica medica di Roma, 2 Edizione Riveduta E. Aumentata Con 61 incisioni ed I Tavola colorata. Paper. Pp. 590. Price, 5½ lira ($1.05). Ulrico Hoepli, editore, Milano, 1905.

Le Malattie Sessuali. Manuala ad Uso Dei Medici e degli Studenti di Medicina, Dr. Giovanni Franceschini, Direttore del Dispensario Celtico Governativo di Vicenza. Ulrico Hoepli, editore, Milan. Cloth. Pp. 64. Price 2½ lira ($0.48).

A Laboratory Guide in Bacteriology for the Use of Students, Teachers and Practitioners. By P. G. Heineman, Sc.B. Cloth. Pp. 143. Price, $1.50 net. Chicago: The University of Chicago Press, 1905.

Igiene Del Sonno. Dr. Guiseppe Antonelli, med. chir., ufficiale sanitario di Farnese. Con une tavola. Ulrico Hoepli, Editore, Milan, 1905. Cloth. Pp. 64. Price 2½ lira ($0.48).

Squint, Its Causes, Pathology and Treatment. By C. Worth, F.R.C.S. Second Edition. Cloth. Pp. 231. Price $2.00 net. Philadelphia: P. Blakiston's Son & Co. 1905.

NEW PATENTS.

RECENT PATENTS OF INTEREST TO PHYSICIANS.

790353	Irrigator for urethral or other cavities. Everett S. Estlingen, San Francisco.
790626	Infusion device, Mary H. French, New York.
790527	Bandage roller, Ellis F. Frost, Washington, D. C.
790726	Chair, bed, couch, or the like for use in surgical operations or examinations, Pierre A. Gayon, Paris, France.
790359	Truss, George L. Gerard, New Haven, Conn.
790701	Sanitary appliance, James H. McCall, Columbia, Tenn.
790588	Invalid-bed, Wm. McLennan, Buffalo, N. Y.
790655	Medical ozonizer, Marius Otto, Paris, France.
790318	Atomizer, Walter Sams, Chicago, Ill.
790601	Making camphor, Karl Stephan and P. Hunsalz, Berlin, Germany.
791128	Ligature container, Perry S. Bauer, Chicago, Ill.
791322	Surgeons' needle holder, Henry Clayton, Philadelphia, Pa.
791354	Catamenial appliance, Mary S. Merkley, Brooklyn, N. Y.
791295	Invalid bed, Walter C. Sennett, Portland, Me.
790928	Emasculator, Oliver C. Sheppard, Centerville, S. D.
791058	Massage machine, George F. Trotter, Louisville, Ky.
791233	Treating rheumatic or other diseases, Casimir Wolpers, Chicago, Ill.
791232	Apparatus for treating rheumatic or other diseases, Casimir Wolpers and T. F. Barrett, Chicago, Ill.
791862	Sterilizer for barbers' use Ernest O. Bauer, Valatie, N. Y.
791863	Device for the production of the circulation of water in warm-water bags, Moriz Bauer, Vienna, Austria-Hungary.
791802	Hypodermic syringe, Justin De Lisle, New York.
791468	Nebulizer, Olin Q. Holman, Chicago, Ill.
791490	Sterilizer for surgical instruments, Jean Parmentier, Paris, France.
791840	Sterilizer, Henry W. C. Thomas, Valatie, N. Y.
792305	Hernial truss, Francis B. Allshouse, Chicago, Ill.
792407	Support for the treatment of injured legs, Wendel Emge, Hohentengen, Germany.
792227	Firemans' respirator, Wm. F. Merryman, Denver, Colo.
792148	Lotion, Ernesto Monteleone, Jersey City, N. J., and V. Cesareo, New York.
792230	Hot-air inhaler, Norman K. Morris, Denver, Colo.
792544	Sanitary sweeping compound, James Newman, Washington, D .C.
792162	Electric osteophone, La Forest Potter, New York.
792299	Syringe, Samuel M. Weaver, Cleveland, Ohio.

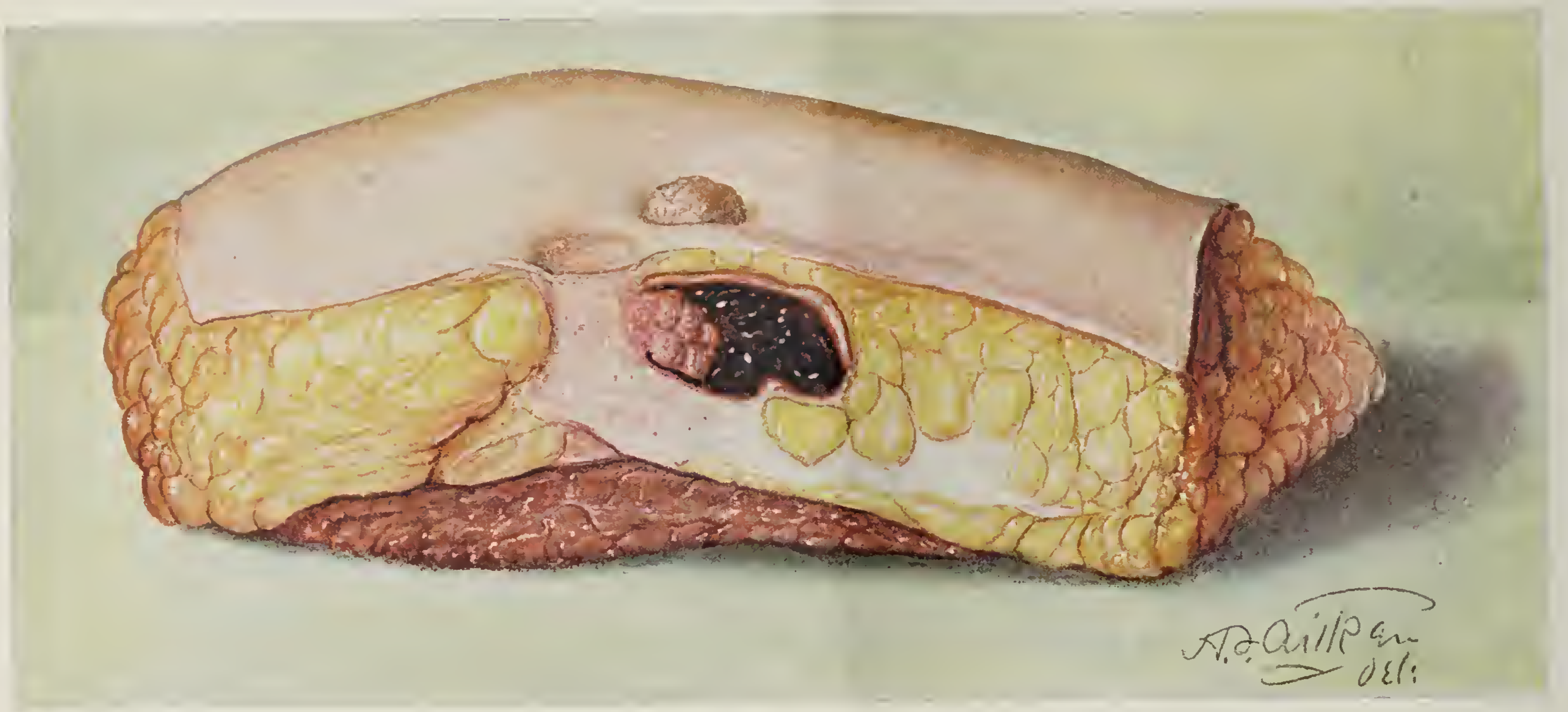


Fig. 1.—Adenocarcinoma and papillary cyst-adenoma. Gross appearances. (See oration on Surgery by Dr. Warren in this issue.)

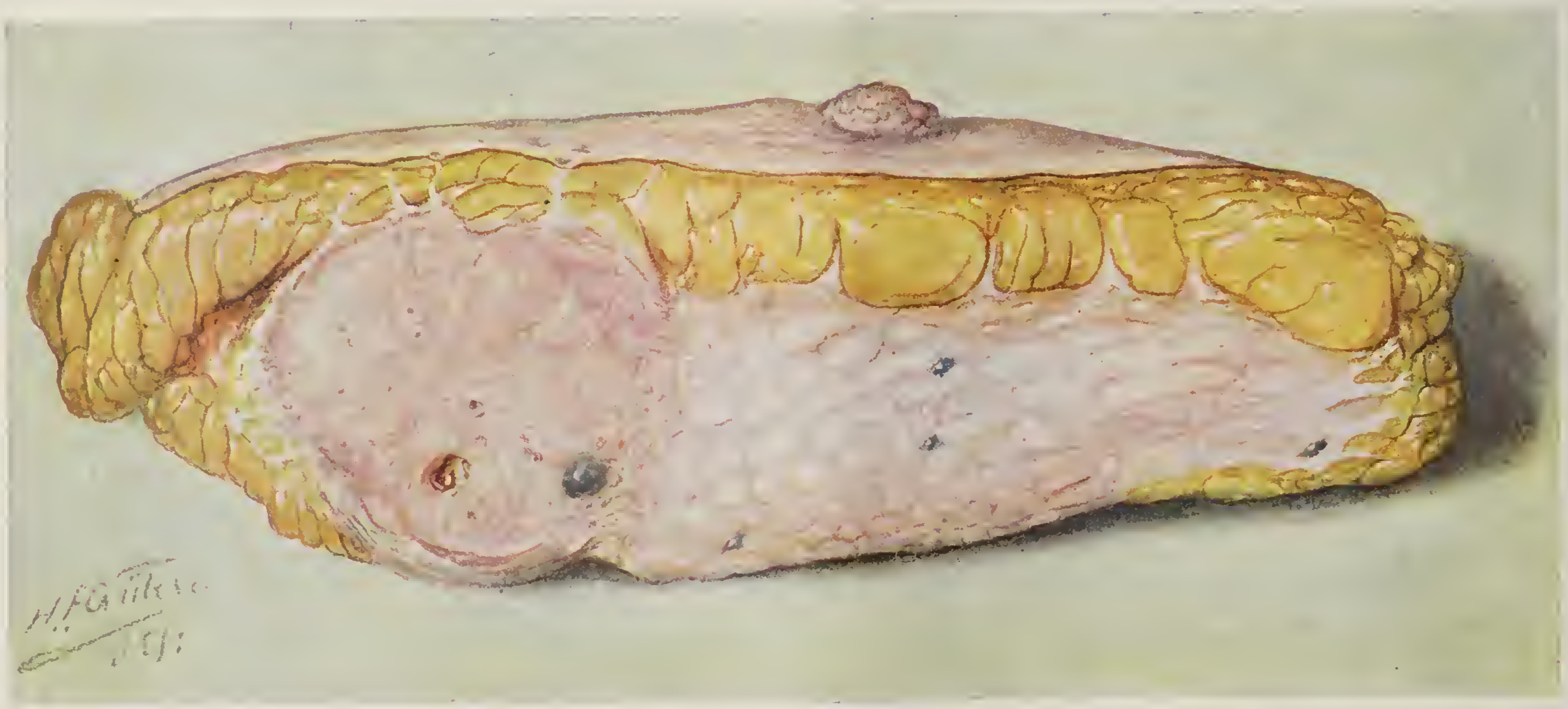


Fig. 2.—Adenocarcinoma and abnormal involution. Gross appearances.

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Address

THE AMERICAN MEDICAL ASSOCIATION: ITS ORIGIN, PROGRESS AND PURPOSE.

PRESIDENT'S ADDRESS, AT THE FIFTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION AT PORTLAND, OREGON, JULY 11-14, 1905.

LEWIS S. McMURTRY, A. M., M. D.,
LOUISVILLE, KY.

Both established usage and the by-laws of this Association require the presiding officer to deliver annually an address touching such matters as he may deem of importance. In the early years of the Association the President's address was devoted to an epitome of the progress of medical science in its various departments during the preceding year. Since distinguished orators are now selected annually to perform this important service, the President's address may be more appropriately directed to subjects relating to the general welfare of the profession and to the purposes for which this great organization was established.

The annual session of the American Medical Association is always an occasion of special moment and universal interest to the medical profession of America. That several thousand physicians from all sections of our broad country assemble annually for the advancement of medical science and the elevation of our profession is a splendid testimonial to the earnestness of professional achievement and aspiration. The occasion cannot but command the respect of all who are concerned in the progress of science and the betterment of the human race. The spirit which pervades such an assemblage is the desire for improvement, for the increase of scientific resources, and for the diffusion of medical knowledge. Closely related to these ennobling purposes is that social instinct of our profession, which would elevate and be elevated by interchange of views resulting from common experiences, and by mingling together in pleasant friendly intercourse. Happily our present meeting is held under ideal conditions for the exercise of all the functions of such an organization. Perfect harmony prevails. The differences which at times have divided us have all been satisfactorily adjusted; and we are to-day as one man in our united effort to advance the science of medicine, to enlarge the scope of its beneficence, and to promote the welfare of our profession.

Since our meeting at Atlantic City one year ago, many of our members have ceased their labors and passed to the great beyond. The list is a long one. Among the number is that of Nathan Smith Davis. He was one of the founders of this Association, an ex-president; a member of the Board of Trustees, the first editor of THE JOURNAL, and for years a power for good in its affairs. He lived beyond the time allotted by the Psalmist, and all his years were filled with labor and with honor. I will not undertake at this time to estimate adequately his great services, or appropriately to pay tribute to his memory. This will be done later in the session by one better prepared than I to eulogize our departed leader.

At our last session, Dr. B. C. Pennington of Atlantic City was chairman of the Committee of Arrangements. He was honored with the fourth vice-presidency in recognition of his ability, his high professional standing, and his devoted services to this Association. His name, too, is now found among the year's honored dead. A cultured gentleman, a learned and accomplished physician, his memory will ever remain as an inspiration for high ideals and noble endeavor.

EARLY YEARS.

When the American Medical Association was organized in 1846 it is doubtful if there were more than 25,000 physicians in the entire United States of America. It was organized as a representative body, composed of delegates from affiliated societies, colleges, and hospitals throughout the states. It was a body of delegates from all state, district, county and other medical societies which adopted the code of ethics of the national association. The apportionment of delegates was on a basis of one for every ten members of the societies represented. For a number of years the delegate body thus constituted was not too large for the discussion of important subjects and the ready transaction of business.

With the rapid increase in population, the admission of new states to the Union, and the settlement of new territories, came a vast increase of physicians, with a corresponding multiplication of state and county societies. Without change in the apportionment of delegates, the national association developed into a body too large and unwieldy for the transaction of business. Indeed, during the latter years under the original system of organization, practically every member in attendance on the annual sessions was a delegate. While the work of the sections was carried on with increasing excellence, the important functions relating to legislative and other matters, belonging to a great national organization of the medical profession, were neglected. The general sessions brought together hundreds of delegates, forming a convention so large that thorough discussion of important questions and judicious action on the same became practically impossible. Moreover, the delegates attending the annual sessions constituted a body annually changing in personnel; and the sources of attendance changed with the sections of the country in which the meetings were held. In consequence there could be neither that equal representation of all sections which must obtain in a national body, nor continuation of work from year to year along definite lines.

THE SECTIONS.

During these early years it was the steady improvement in the work of the sections which drew the best element of the profession to the annual sessions. Many leaders of the profession in the various states attended the sections in which they were interested, and took no part in the proceedings of the general meetings. The sections have now reached such a high degree of efficiency that they have attained the standard so much desired, and rank as leading special national societies in the several departments of medical science which they represent.

As chairman of the Committee on Sections and Section Work, I have carefully studied the workings of the sections. As a result of this experience, I would repeat the recommendation of my distinguished predecessor in this chair, that the secretary of each section should be elected for a term of years. No national society can maintain its efficiency which changes its secretary annually. And again, I would suggest that the officers of the several sections meet together in conference as soon as practicable after the adjournment of the session at which they are elected, in order that definite plans may be formulated for the scientific work of the next annual session. The conference of section officers in New York last November contributed much toward the development of the admirable scientific program now before you for the present session.

It should be the aim and purpose of every member of this Association to aid the officers of the sections in elevating continually the standard of scientific work. Every American physician may have pride in the work done year after year in the sections of this Association.

THE JOURNAL.

It would be a difficult task were we to undertake a definite estimate of the influence of The Journal in the great work which this Association has accomplished during the past two decades. When it was decided to discontinue the annual volume of transactions, and to establish a weekly journal, the change was viewed with apprehension by many. The influence of this publication, the property of the Association, in stimulating research, diffusing knowledge, elevating professional thought and conduct, and building up this great organization cannot be computed. This part of my discourse is so replete with suggestion, that I fear the time and space at my command will not permit such consideration as should be devoted to it.

The volumes of The Journal mark the steady and continued growth of the Association, and likewise bear testimony to the fact that The Journal itself has been a potent factor in that growth. Under the judicious direction of the Board of Trustees The Journal has steadily advanced as a scientific publication. By the untiring daily services of the present able Editor, it has leaped into the very front rank of scientific publications, and in all that a great weekly medical journal should be it has no superior in the world. The power exerted by such a publication as a medium of communication among the members of the Association is inestimable, to say nothing of the other more important functions performed by a great weekly journal. It has been the most potent instrument in building up this Association to its present proud position as the largest medical organization in the world. No other American medical periodical has a circulation so distinctly national, and no other journal can sustain the same relation to the great body of the medical profession. It is a great engine whose power is constantly increasing, constantly extending. With such increased power comes increased responsibility, much of which rests with the House of Delegates in the selection of proper men to fill the responsible places of the trustees. No other office should be regarded higher in honor than that of the trustees, as no other affords greater scope for unselfish labor and efficient service to the Association. Under the conditions of our organization more power is invested in this board than the combined power of all other officers.

THE NEW ERA.

At the annual session of 1900 a committee on reorganization was appointed, and one year later, at St. Paul, the report of the committee was submitted and adopted. It included a new constitution, which altered the basis of apportionment for delegates, so as to reduce the delegate body to 150, and definitely established a close relationship between the national organization and the state, district and county societies. For the first time a practical scheme of complete organization of the medical profession of the United States was provided. This is the fourth annual session held under the new plan of organization.

Previous to the reorganization, the valuable scientific work of the sections constituted almost the sum total of the effective work accomplished by the Association. Matters appertaining to medical education, to the public health, to national legislation, and to the welfare of the profession received no deliberate consideration; and in consequence no decisive action was carried out. This condition existed for the reasons already mentioned. In a word, the very objects and aims for which the Association was organized were thwarted by the growth of the Association into an unwieldy delegate body. Under the reorganization, the House of Delegates, in which the membership of the state societies is proportionately represented, now gives deliberate consideration to those important matters, already indicated, which under the former organization were neglected.

The influence of the revised plan of organization was immediately apparent in the increased attendance at the annual sessions, and the stimulus felt in every purpose of the Association. And each year this influence has grown, until some idea can now be formed of the great possibilities to come from organization on a definite and practical plan. The good results to accrue to the profession as a whole, and to every member as an individual, are so positive that no subject can deserve more careful consideration by this body than that of medical organization. Indeed, it is the fundamental question before us, and on its decision depend the results of all our other efforts in all directions.

In order that we may thoroughly appreciate the origin and purposes of the Association, and thereby be better prepared to meet its present and future requirements, I have very imperfectly outlined the history of its earlier years. During the more than half century of its existence it has always brought to its councils the ablest and best men in the profession of America. Among its leaders from the beginning are found the most eminent physicians and surgeons of the day. In the list of its active members are the names of Samuel D. Gross, Paul F. Eve, Austin Flint, Marion Sims, N. S. Davis, Alfred Stillé, Lewis A. Sayre, and many others which adorn the annals of American medicine. It has from the beginning been a great power with the profession of America. Its greatest influence, as I have already indicated, was in the growth and diffusion of scientific knowledge through the splendid work of the sections. In elevating medical education, in promoting legislation, and advancing the powers of public health organizations its influence was most felt in the development of a helpful public professional opinion. The extension of the influence and advantages of organization to the masses of the profession was gradually lost sight of in the annual meetings, and the work relating to matters of public policy was spasmodically considered and imperfectly executed. Whatever was accomplished along these lines worthy of mention was the work of committees. The necessity of reorganization was appreciated by the leading members of the Association long before it was accomplished. In 1888, Dr. N. S. Davis as chairman of a committee appointed for the purpose, reported a scheme of reorganization very similar to that adopted in 1901 at St. Paul.

ORGANIZATION.

"The object of this Association shall be to federate into one compact organization the medical profession of the United States, for the purpose of fostering the growth and diffusion of medical knowledge, of promoting friendly intercourse among American physicians, of safeguarding the material interests of the medical profession, of elevating the standard of medical education, of securing the enactment and enforcement of medical laws, of enlightening and directing public opinion in regard to the broad problems of state medicine, and of representing to the world the practical accomplishments of scientific medicine." (Article II, Constitution of the American Medical Association.)

If every physician worked alone, relied on his own unaided observation for his knowledge, never looking outside his own scope of view, ignorance would prevail and there would be no progress in medical science. Medicine is not an exact science, and until perfected by extorting from Nature all her secrets, it must from the nature of things continue to be a progressive science. Never before in the history of medicine has such marked progress in all its departments been made as during the present age. Theories have been supplanted by facts; laboratory research and clinical investigation have taken the place of tradition and authoritative opinion. To rely on the accomplishments of the college period is to be left behind in hopeless incompetency. The advance of medical knowledge is to be observed first in our medical societies, and afterward in our scientific medical journals. In the medical societies innovations are subjected to criticism and discussion by those competent to judge the merits of scientific contributions. Moreover, there is a stimulus to study and investigation from association with workers in the same field; and one obtains a broader view of every subject so considered. The physician, more than any other professional man, is isolated by the conditions of his life, and to no profession is the educating influence of society work so essential and invaluable. This same condition of isolation is at the foundation, for the most part, of the jealousies and petty bickerings so prevalent in our profession. These troubles are, as a rule, the result of misunderstandings, and are both prevented and corrected by coming together in a society composed of physicians. The lonely worker in any calling is prone to become narrow, suspicious, and morbid. Our medical societies are the great post-graduate schools of the profession, where knowledge is increased and individual character developed.

But the promotion of scientific investigation, and the diffusion of medical knowledge are not the only objects of organization. Our profession has a most essential and important duty in relation to the public health. Through no other agency can municipal, state and national health authorities formulate and secure recognition of laws to prevent and control disease. Another duty no less essential is so to regulate and to control medical education that the ignorant and unworthy shall not be admitted to the privileges of the profession, thereby preserving the time-honored standard of professional honor and scientific capability. In this age of organization, without it the profession is powerless to secure the enactment of humane sanitary laws, by which alone the people can be protected from preventable diseases. The welfare of the profession, collectively and individually, can only be subserved by organization. Without such organization, our profession, as a body politic, will be without unanimity of sentiment or action in relation to the important scientific, ethical, and social questions which confront us; and consequently without influence politically, socially or otherwise.

In the declaration of the constitution adopted at St. Paul, which I have just quoted, the American Medical Association has undertaken to place within reach of every reputable medical practitioner in the United States these incalculable advantages of medical organization.

The Committee on Reorganization appointed in 1900 has treated this subject in a masterly manner. After a careful study of the condition of the profession throughout the states with relation to organization, reports have been made to the Association showing the needs of the profession and the extent of the work required. A uniform plan of organization for state and county societies, making the county society the unit of organization, and federating all state societies in the national association in harmonious co-operation, has been prepared by the committee. The able chairman of this committee has with remarkable tact, patience, and good judgment given his personal supervision to this great work in almost every state and territory. In his latest report it is announced that all the states and territories, except three, and including Hawaii and Porto Rico, are now organized on a practically uniform plan, with universal local societies, and coincident membership in them and the state associations as the cardinal feature. To illustrate the magnitude of this work, I mention that, under the stimulus of reorganization after the plan of the committee, the Michigan State Medical Association increased in membership in one year from 452 to about 2,100. Texas increased the membership in the same time from 382 to 2,510, while several states quadrupled their membership. While these results are phenomenal, and elicit our admiration, it will be realized how much remains to be done when it is considered that few of the states have over 50 per cent. of the eligible members of the profession enrolled as members of the society. Indeed, the work is yet almost in its infancy. What has been accomplished is an assurance for the future; and considering the brief time since reorganization began, is a high tribute to the enterprise of the national association and the work of its able and efficient committee. The possibilities of this work are stupendous, and as it proceeds the Association can confidently undertake the great reforms of such incalculable moment to the profession and the public. In his official report to the House of Delegates one year ago, the chairman of the Committee on Organization, after reporting the splendid results of his labors during the year, said:

> The real test of our organization will come in each state when the first out-burst of enthusiasm has passed, and county societies, the foundation for everything, are likely to disappear as rapidly as they have been formed, unless their usefulness to the rank and file of the profession can be demonstrated in a very broad way.

In recognition of this fact, it is of the utmost importance that the personal attention so effectively given to this work throughout the states by the chairman of the committee be continued.

MEDICAL EDUCATION.

When the American Medical Association was founded in May, 1846, the delegates assembled in response to the following preamble and resolutions of the Medical Society of the State of New York:

> Whereas, It is believed that a national convention would be conducive to the elevation of the standard of medical education in the United States, and
>
> Whereas, There is no mode of accomplishing so desirable an object without concert of action on the part of the medical societies, colleges and institutions of all the states, therefore be it
>
> *Resolved*, That the Medical Society of the State of New York earnestly recommends a national convention of delegates from medical societies and colleges of the whole union, to convene in the City of New York, on the first Tuesday in May, in the year 1846, for the purpose of adopting some concerted action on the subject, set forth in the foregoing preamble.

From this it is apparent that this Association was founded with the avowed and specific purpose of elevating the standard of medical education in this country. This subject has constantly received consideration from the Association throughout the years of its existence; and while no distinct and positive reform marks its action, the perpetual demand for improvement undoubtedly moulded the public sentiment of the profession which ultimately stimulated action on the part of the medical colleges. Since the addresses of my two distinguished predecessors, who immediately preceded me in this chair, were devoted to the consideration of medical education, I shall only make brief allusion to this subject. The several national organizations and the many state boards which are now dealing with this important professional problem invest the changing conditions with peculiar interest. The present is a transition period in the advancement and reform of medical education in America.

The consideration of this subject in the House of Delegates culminated in the establishment last year of the Council on Medical Education of the American Medical Association. During the past year the council has taken up its work with exceptional energy and good judgment, and is directing its efforts along most practical lines. The first annual conference was held in Chicago April 20th last. Representatives of many state examining and licensing boards, of the American and Southern Medical College associations, and of the government medical services, attended and participated in the discussions of the papers presented. The plan and scope of the work of the council can be best appreciated by a consideration of this extract from the address of the distinguished chairman of the council delivered to the conference:

> What we need is co-operation, especially the co-operation between the medical profession, represented by the American Medical Association, and the state and county medical societies, and the state authorities, represented by the state licensing and examining boards. The most important question, therefore, before this conference is, How can the American medical profession and the state licensing bodies co-operate to elevate and control medical education? It is believed that such co-operation is possible. In such co-operation it will be the function of the American Medical Association to represent and possibly mold the opinion of the medical profession, and employ its influence and the influence of the county and state medical societies in obtaining proper medical legislation. In such co-operation it will be the function of the state licensing bodies to protect the interests of the public and the profession by seeing that the medical laws are properly interpreted and enforced, and from their intimate knowledge with the medical acts they can often be of service in securing or modifying medical legislation.
>
> It is not the purpose of the Council on Medical Education of the American Medical Association to attempt to arrogate to itself any special powers, nor does it desire either to criticize or interfere in any way with any of the agencies which are already in the field. If its creation is to result in good, it must be the means of obtaining co-operation between the medical profession, and the medical schools, the colleges of arts, the state examining boards, the government services, and all the factors which are interested in elevating and controlling medical education.

By securing co-operation of the various state and national bodies engaged in this important work, recognizing the varied interests involved in the numerous states of the Union, and fostering an intelligent public sentiment, so essential for every great reform, the influence of the Association will be of the most effective character.

MEDICAL LEGISLATION.

Chapter VII., Section 3, of the by-laws provides a permanent Committee on Medical Legislation "to represent before Congress and elsewhere the wishes of this Association regarding any proposed legislation that in any respect bears on the promotion and preservation of the public health, or on the material or moral welfare of the medical profession." This committee was appointed in 1903, and under the leadership of its accomplished and energetic chairman proceeded at once to organize the auxiliary committee provided in the by-laws. This being a permanent committee, its work will be continued from year to year. With the auxiliary committee, representing every state in the Union, and the several medical departments of the Government service, every representative of the people in Congress can be reached directly. The importance of this work is so apparent that I need only call attention to it at this time, and urge on all members of the Association the necessity of aiding and co-operating with the committee at all times. The disregard of the good work of the medical profession in the public service (to say nothing of the indignities offered) on the part of Congress is notorious; and it is only by such concentrated power of the profession, intelligently directed, that such injustice may be overcome. I commend to your consideration the report of this committee in order that you may appreciate the important work already projected.

COUNCIL ON PHARMACY AND CHEMISTRY.

The use of proprietary medicines in the treatment of diseases has become one of the most confusing and demoralizing questions of the day. All proprietary medicines must not be classed as secret nostrums, for there are many honestly made and ethically advertised proprietary preparations that have therapeutic value and that deserve the approval of the medical profession. But there are many preparations offered the profession, which are protected by copyright or trade-mark, with formulæ more or less fictitious, and for which are made extravagant claims, which are in fact secret remedies. These preparations are so exploited by the manufacturer that the physician is persuaded to use them instead of writing a prescription; and since they usually bear popular names and plausible therapeutic claims, they appeal to the fancy of the laity. The field is an enticing one for commercial enterprise since these preparations in many instances are simple mixtures and contain the most inexpensive drugs. The use of such remedies is both unscientific and unjust, alike to physician and to patient.

The separation of the legitimate pharmaceutical preparations from the class of fraudulent nostrums described is a most difficult undertaking. This perplexing problem forced itself from year to year on the attention of the Board of Trustees in the effort of the board to keep the advertising pages of The Journal free from unethical advertisements. In order to have thorough protection and to make no unjust discrimination, the board has established the Council on Pharmacy and Chemistry to make the necessary investigations. The council is composed of pharmacists and chemists of national and international reputation. It will be the aim of the council to publish in book form, a list of the preparations which are not officinal, yet which conform to the proper ethical standard. The work of the council will be similar to that of the Committee on Revision of the United States Pharmacopeia.

The magnitude and importance of this work is such that I desire to direct attention to it here, and to commend it to the members of the Association as deserving every possible aid and advancement. It is the only practical way to deliver the profession from one of the greatest curses that ever came on it.

It has been my endeavor on this occasion to outline the plans of the founders of the Association, briefly to trace the evolution of those plans throughout half a century of progress, and to recount some of the purposes that invite our active exertions at the present time. From a small body of delegates our Association has increased until it is now the largest medical organization in the world. It owns valuable property, has accumulated a considerable fund, and has a large annual income, all of which belongs to, and is subject to the control of, the members who through their delegates select the Board of Trustees to manage their funds.

The possibilities of the work before us are almost beyond calculation. In acting as the representative and agent of the 120,000 physicians of the United States, the Association is assuming great responsibilities, which will increase from year to year. It will require administrative and executive ability of the highest order to meet these demands; but there is both prophecy and proof in the work already accomplished that men will appear as needed to discharge the supreme duties of a great profession in behalf of science and humanity.

Organization.—If we will maintain our organization in societies as developed in the natural evolution of progress, we will be stronger in the community and more likely to take the place which belongs to us in society.—Williams, in *Journal of the Michigan Medical Society*.

Orations

THE SURGEON AND THE PATHOLOGIST.

A PLEA FOR RECIPROCITY AS ILLUSTRATED BY THE CONSIDERATION OF THE CLASSIFICATION AND TREATMENT OF BENIGN TUMORS OF THE BREAST.

ORATION ON SURGERY AT THE FIFTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION,
PORTLAND, OREGON, JULY 11-14, 1905.

J. COLLINS WARREN, M.D.
BOSTON.

SYNOPSIS.

1. Introduction: Subject of paper. Confusion of nomenclature. National and local differences. Differences between clinician and pathologist. Need of co-operation. Clearing house.
2. Material: 658 consecutive cases of chronic disease of breast in M. G. H. 100 cases from private practice (70 diagnoses in 199 cases of benign breast tumor in M. G. H.).
3. Classification: Normal anatomy of breast. Relation to tumors and diseases. Classification offered. Variation from other classifications.
4. Carcinoma: 517 cases. Proportion to other tumors, 68 per cent. (70 per cent., M. G. H.) (58 per cent., J. C. W.). Varieties. Age incidence. Occurrence with or resulting from benign tumors and diseases, as Involution, papillary cyst adenoma, periductal fibroma, Paget's disease.
5. Fibro-Epithelial Tumors: Fibrous Group. Periductal tumors. Fibroma, myxoma. sarcoma. Frequency. Pathology. Clinical symptoms. Diagnosis. Course. Prognosis. Treatment.
6. Fibro-Epithelial Tumors: Epithelial group. Cyst-adenoma. Fibro-Cyst-Adenoma: Rare. Epithelial exaggeration of periductal fibroma. Pathologic symptoms. Treatment. Papillary Cyst-Adenoma: Pathology. Symptoms. Prognosis. Treatment.
7. Hyperplasia. Diffuse Hypertrophy: Two varieties. Rare. Relation to pregnancy and to genital abnormalities. Pathology. Symptoms. Treatment.
8. Hyperplasia. Abnormal Involution. "Chronic Cystic Disease." Historical. Synonyms. Pathology. Cystic and proliferative. Types of proliferation. Symptoms. Course untreated. Prognosis. Treatment.
9. Chronic Inflammation: Chronic abscess. Ductal mastitis. Relation to lactation. Symptoms. Course. Pathology and Treatment. Galactocele.
10. Single Retention Cyst: Mechanical origin. Rarity. Symptoms. Confusion with abnormal involution.
11. Non-Indigenous Tumors of Breast: Sarcoma. "Solid sarcoma." Rare. No relation to breast. Symptoms. Diagnosis. Treatment. Lipoma. Retro-mammary. Symptoms and treatment. Lymphangioma.
12. Supernumerary Breasts: Occurrence. Situation. Tendency. to tumor formation.
13. Treatment of benign tumors of the breast. "Plastic resection." Indications. Method. Results.

In selecting a subject in a special department of medicine which should be of interest to the great body of members of this Association, it has occurred to me that the discussion of the diseases of the mammary gland would be appropriate, as the classification of the diseases of this organ is at present in a more or less unsettled state, and the operative treatment of many of the benign lesions of the breast is a subject which is still open to discussion.

The great impetus which laboratory work has received in recent years in the various medical centers of this country is evidence that the interest taken in the scientific side of medicine has progressed steadily since the awakening of modern pathology in the middle of the last century. American physicians have proved themselves apt pupils, and the beginnings of the generation which is now passing off the stage have already borne fruit which one can not regard otherwise than with satisfaction. The time has already arrived when we in this country are no longer content to receive the dicta of science at second hand, but feel quite competent to take the initiative on ourselves, as our many substantial contributions to medical science amply show. Indeed, I feel convinced that the very practical side of our national character is a most valuable quality in enabling us to unravel some of the more complicated questions which have been left unsolved by the foreign scientists. The laboratory workers' range of vision, however, is often at best but microscopic, and it is no wonder that, unaided, he sometimes misinterprets the changes rung by nature on some simple theme. Without the laboratory worker's aid, however, the clinician becomes swamped in a mass of clinical detail from which alone he has again and again been unable to extricate himself. There can be little question that the combination of energies which accomplishes most in surgical progress is that obtained by the coöperation of the laboratory investigator with the surgeon of clinical experience. Too long have these two departments of medicine conducted themselves independently and, as I feel, greatly to the disadvantage of them both. The clinician and the laboratory man, however, in these days of specialism seem sometimes in danger of drifting even further apart, and we find some of the modern problems sadly in need of a pathologic "clearing-house" to put things on a more practical basis. This, it seems to me, is the moral which must be read between the lines of the paper which I have the honor to present.

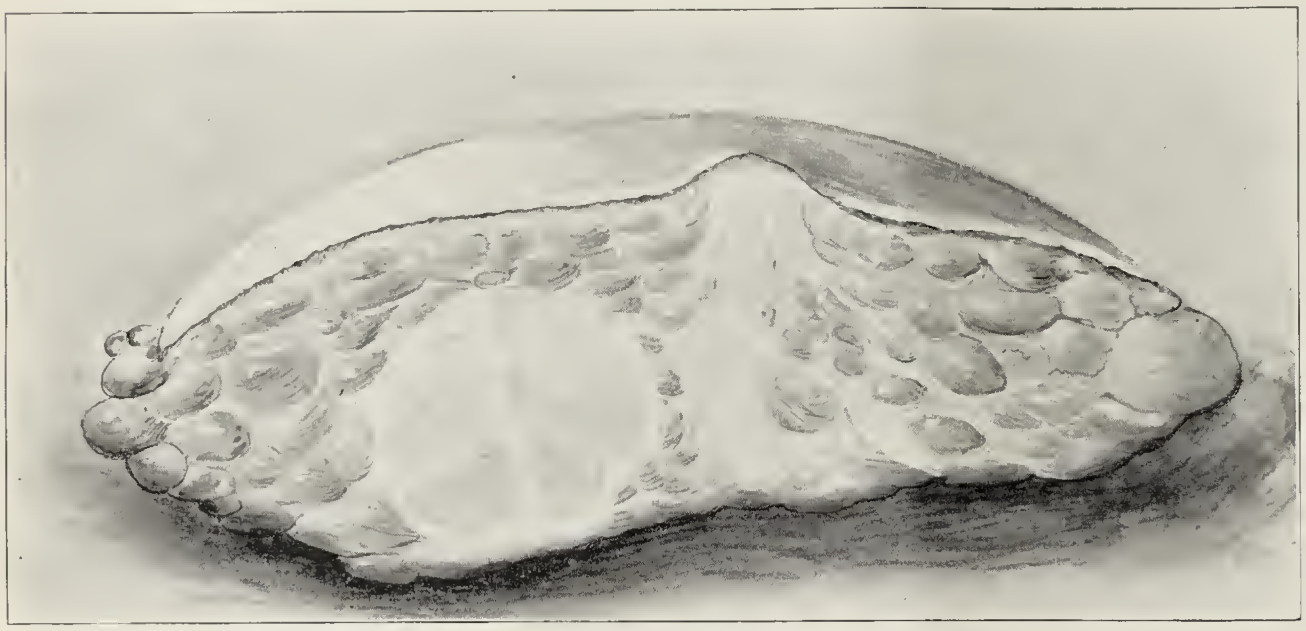

Fig. 3.*—Periductal fibroma. Gross appearances.

In no department of surgery has the classification of the diseases of an organ or the pathologic nomenclature been more confusing than in the case of the diseases of the mammary gland. Not only has the nomenclature of the diseases of the breast been subject to that continual revision to which all medical terms are liable with advancing knowledge, but in this case national and even local systems have added again to the confusion. The French school, the German, the English and the American schools of medicine rarely agree in their description of any tumor of the breast other than carcinoma, and in the case of the inflammatory or involution changes of the breast the variations in nomenclature are notorious. In view of the always horrible possibility of cancer, however, no woman can regard a lump of any size, shape or consistency in the breast with equanimity, and in no organ does the presence of disease in its earlier stages furnish fewer data for accurate diagnosis. The cry for aid and comfort is always an urgent one, and it behooves the surgeon, therefore, and the general practitioner as well, to be in a position to meet the demand for accurate information with an intelligent and harmonious reply. Such a statement can be furnished only by bringing the modern views of the pathology of these diseases into focus with the clinical pictures which they present. In the hope that I may pave the way for the clinician and the pathologist to "get together" and to put the classification of diseases of the breast on a more intelligible and practicable foundation, I have selected this field of surgery for your consideration.

The material which has served as a basis of this investigation includes, in all, 758 cases of diseases of the breast; 658 cases were taken from the records of the Massachusetts General Hospital.[1] The diseases of the male breast were purposely omitted from this table of cases, and of the total number of cases of diseases of the female breast 10 were omitted because of insufficient data to establish a diagnosis. Acute mammary abscess was also excluded from consideration. With these exceptions all cases of disease of the mammary gland are included which entered the Massachusetts General Hospital during the decade from 1895 to 1905. One hundred additional consecutive cases of disease of the breast have been obtained from my own private practice, making up the total of 758 cases of all varieties with which we have to deal. Pathologic reports were available in nearly every case, and in many instances the actual specimens could be obtained and were used for further study and for purposes of illustration. Four hundred and fifty-nine of the hospital cases and fifty-eight of the cases in private practice were cancer of the breast. These were included for purposes of comparison and in order better to establish the significant data for diagnosis. The greater part of the study, however, has been

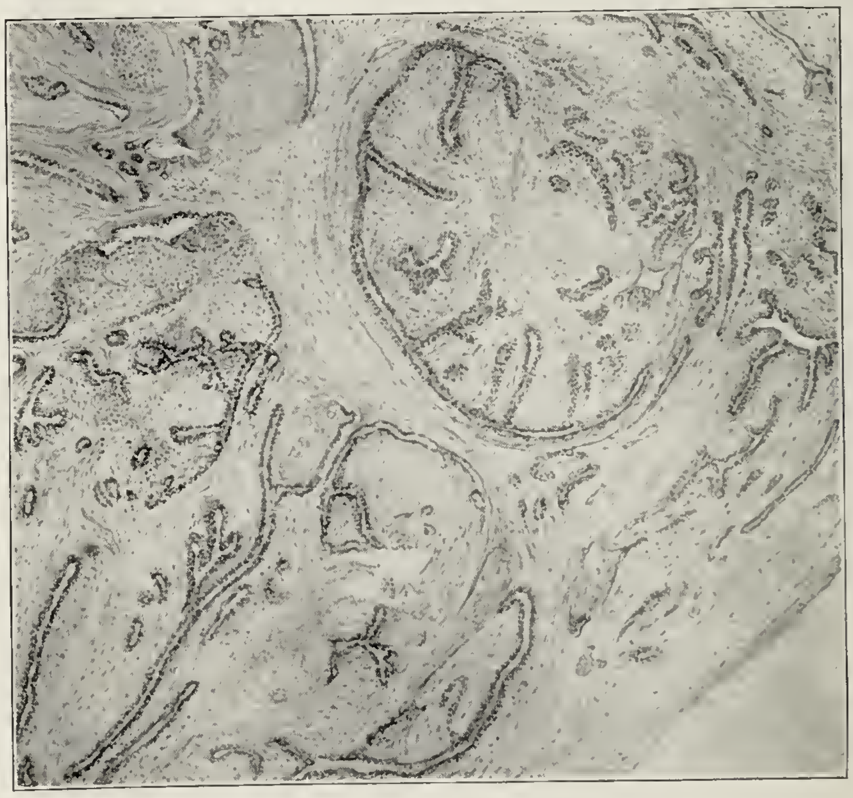

Fig. 4.—Periductal fibroma. Microscopic appearances.

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* Figs. 1 and 2 compose the frontispiece facing page 145.

[1] Collected and analyzed by Drs. R. B. Greenough and C. C. Simmons, whose valuable assistance in the preparation of this classification I wish here to acknowledge.

devoted to the benign diseases of the breast, 42 in private practice, 199 in the hospital series—a total of 241 cases of benign diseases of the breast. These are exclusive of re-entries or of cases in which two diseases of different types occurred. As an instance of the confusion in nomenclature I might here state that in 199 cases of benign disease of the breast occurring in the Massachusetts General Hospital in ten years, 70 different pathologic diagnoses appeared on the record books.

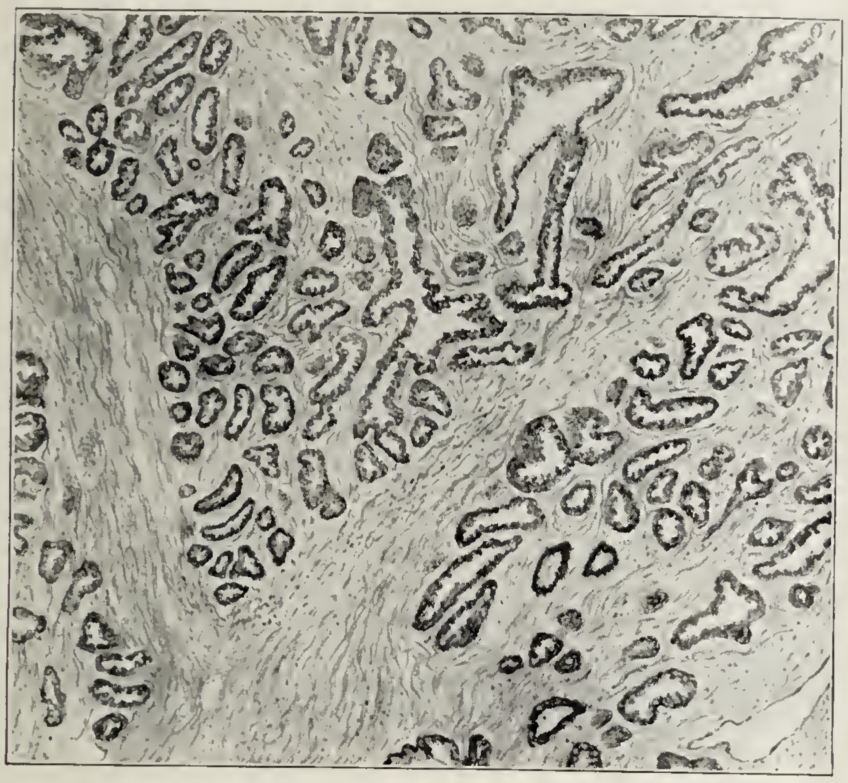

Fig. 5.—Fibro-cyst-adenoma. Microscopic appearances. (Note cyst cavities and exuberant growth of epithelial ducts in lobular arrangement in a stroma of periductal tissue. Gross appearance of this tumor similar to Figure 3.)

Before taking up the question of classification of the benign tumors of the breast, I would like to call your attention to some anatomic peculiarities of the mammary gland which distinguish it from any other organ in the body. At no time during the various periods of its life history does it have an enduring type of anatomic structure. At birth the gland is represented by a series of radiating ducts with club-shaped extremities, but with no well-developed acini. The epithelium of these ducts is often in a state of active proliferation, causing swelling and tenderness of the gland, with ectasia of the ducts and supposed inflammation (acute mastitis of infants). Infection through the nipple may undoubtedly occur at this time, but in the vast majority of cases the swelling and tenderness are due entirely to the developmental activity of the gland. No material change in the gland takes place from this time until the age of puberty, when the development of the acini first really begins. An enlargement of the breast, with development of considerable tenderness, is often noticed at puberty in males as well as females. The epithelial structures are now beginning to make themselves prominent, but there is also a characteristic change in the tissue immediately around the ducts. The periductal connective tissue becomes transparent and rich in nuclei and presents a strong contrast to the interstitial tissue of the gland. This transparent periductal tissue is peculiar to the mammary gland. It gives the familiar consistency and shape to the virgin breast and enters largely into the new growths of the breast which take origin at this stage of its life history.

At the time of pregnancy another great change takes place in the anatomy of the breast. Now the epithelial activity of the gland is at its height, the acini multiply enormously, the tree may be said to be in full leaf. Meanwhile the interstitial tissue becomes stretched and the periductal tissue becomes less prominent. After lactation many of the acini wither and disappear, the interstitial tissue is relaxed and the breast becomes pendulous.

The declining period in the life history of the mammary gland may begin in middle life, and presents a condition which is of great interest to the surgeon. The breast, as it were, gradually dries up. Change is noticed especially in the acini and in the interstitial tissue. The epithelium is no longer in a state of active proliferation, but degenerative changes gradually gain the upper hand. Some ducts are choked with epithelial débris, while others are compressed by the contracting interstitial tissue of the gland, and the blood vessels become thrombosed and disappear. Obstruction takes place here and there, and slight dilatation of the small ducts and acini occurs, with induration of the surrounding tissues. If the breast in this condition is gently pressed against the thorax with the flat of the fingers it will be found to contain a large number of small hard nodules. This condition I have described as the "cobble-stone" feel of the breast. It is present in almost every breast at a certain stage of its decline, and should be regarded as a normal condition at this period of the life history of the gland. If the gland is incised these nodules will be found to be composed of fibrous tissue or of small cysts filled with a slightly discolored fluid which derives its hue from solution of the old blood crystals and pigment from the thrombosed blood vessels.

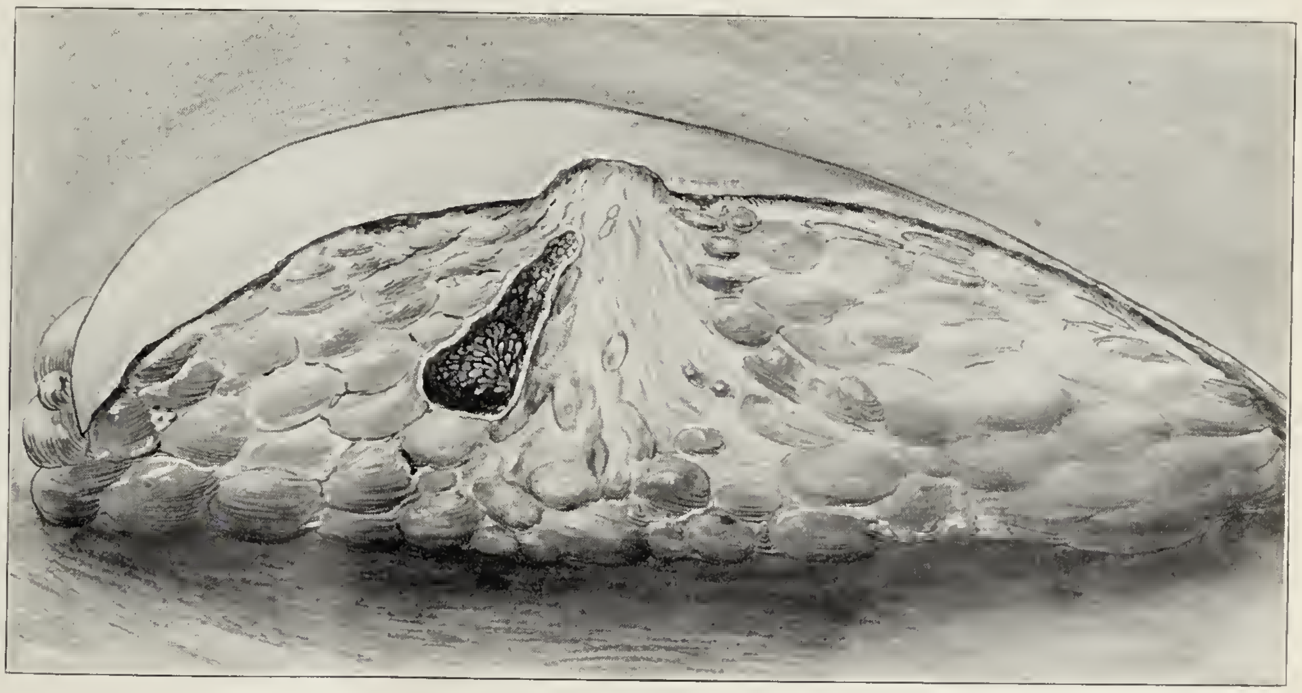

Fig. 6.—Papillary cyst-adenoma ("villous papilloma"). Gross appearances.

The gland tissue is absorbed after lactation[2, 3] and with advancing years, a certain amount of adipose tissue takes its place, and in old age we find the mammary gland represented merely by a few ducts near the nipple and some small strands of fibrous stroma, the meshes of which are well filled with fat. Keeping in mind the anatomic peculiarities of the mammary gland, we find two distinct structures intimately associated with different periods of its life history. I refer to the periductal fibrous tissue so prominent in early life and to the epithelial elements which at certain later periods, as in lactation, attain the perfection of their development. These two structures are so intimately associated one with another that it is impossible for a neoplastic formation to develop without partaking somewhat of the characteristics of both tissues. The periductal fibrous tissue of the gland can not form a tumor without involving, to a certain extent, the epithelium of the ducts. Nor can the epithelial elements grow entirely independent of their fibrous support without placing the growth at once in the category of carcinoma. A consistent classification of the tumors of the breast must, therefore, take into consideration both of these elements, and the term "fibro-epithelial" tumors, suggested by Ribbert,[4] best meets these indications.

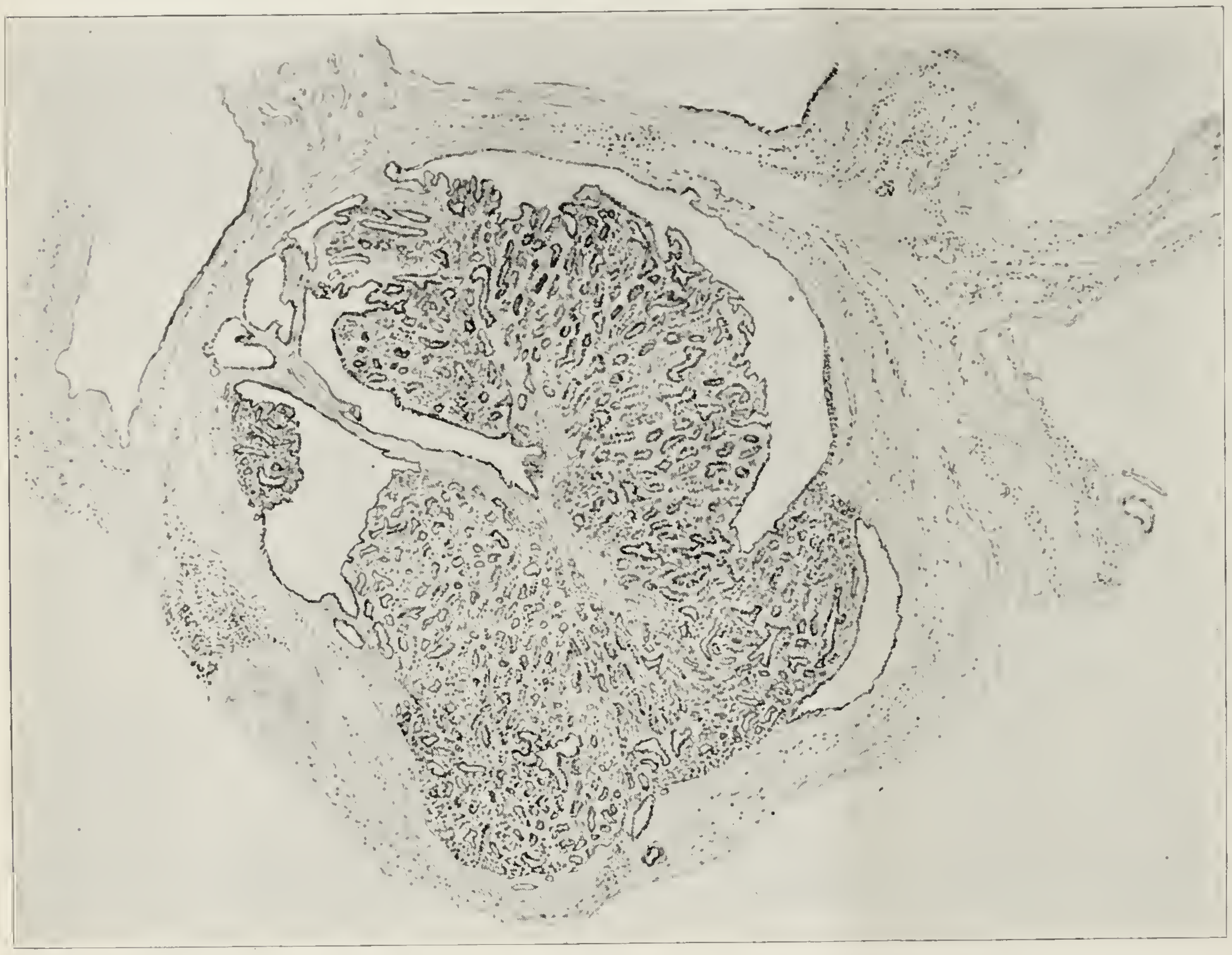

Fig. 7.—Papillary cyst adenoma. Microscopic appearances. (Note exuberant growth of epithelium over papillary outgrowths of connective tissue from the wall of the cyst cavity.

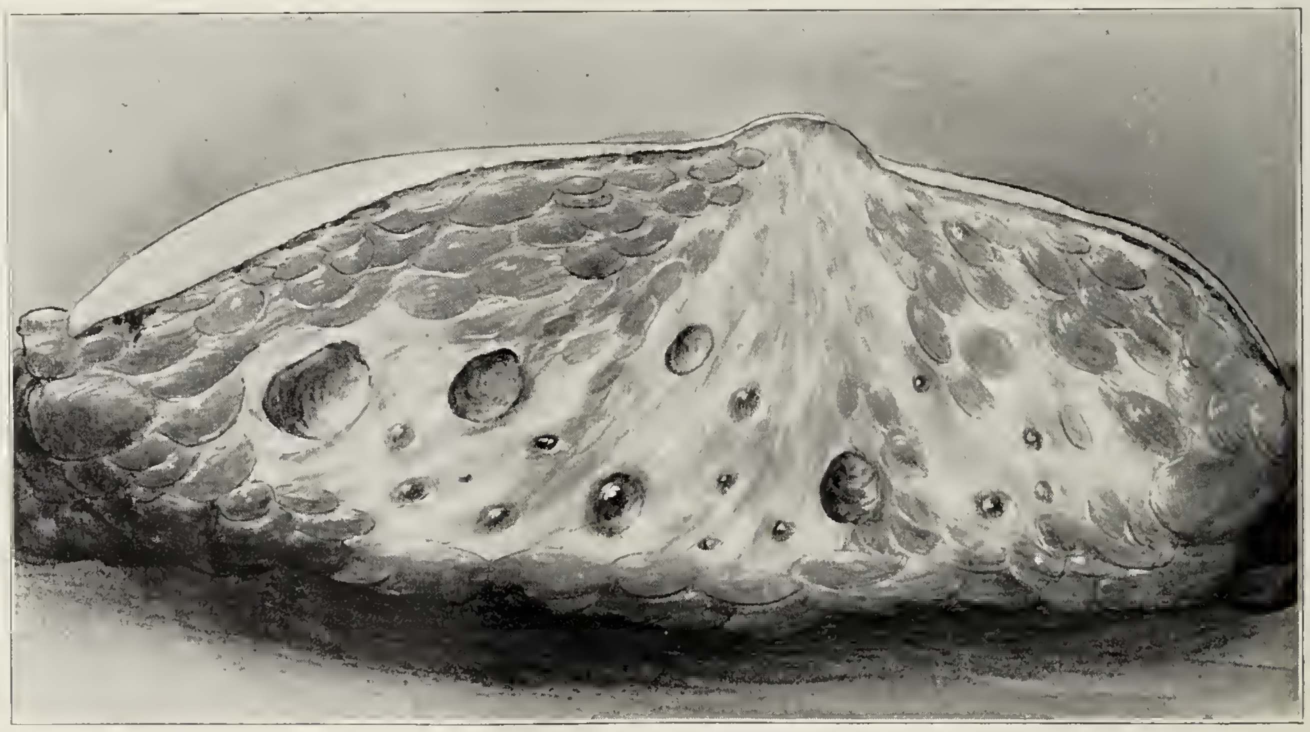

Fig. 8.—Abnormal involution ("chronic cystic disease," "chronic cystic mastitis"). Gross appearances.

Tumors are classified, however, either according to the nature of the tissue of their origin or the tissue which forms their most significant part. In these fibro-epithelial tumors, therefore, certain subdivisions are possible and, indeed, important, according to the tissues which are most seriously involved. A ready distinction is suggested at once between the tumors which are chiefly of a fibrous character and those in which the epithelium is more involved. This distinction, moreover, has an important clinical value, as there is a tendency of the fibrous group toward sarcomatous change and of the epithelial group toward carcinomatous metamorphosis. Under fibro-epithelial tumors of a fibrous character we may thus distinguish three divisions—the periductal fibroma, periductal myxoma, and periductal sarcoma. Those of the epithelial group we can divide into the fibro-cyst-adenoma and the papillary cyst-adenoma. In

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[2] Warren: International Text-Book of Surgery, second edition, vol. ii.

[3] Warren: "American Text-Book of Pathology." "Pathology of the Breast."

[4] Ribbert, H.: "Allgemeine Pathologie," Leipzig, 1901. F. C. W. Vogel.

the tumors of the fibrous group the fibrous tissue is the predominant feature of the tumor, epithelium being present, but playing only a subordinate part. In the epithelial group the fibrous tissue is present also, but merely in sufficient quantity to be regarded as a stroma, the growth of epithelium being the predominant feature of the tumor.

The term hyperplasia I have reserved for those diffuse changes which are characteristic of the breast at certain periods of its life history. From their very diffuse character, these can not properly be placed within the category of tumor formation. They cover not only that common condition which we find so characteristic a feature of the involution stage of the normal breast and which has passed under the many terms of "chronic cystic mastitis," "cystic disease of the breast," etc., but also that rare diffuse hyperplastic growth of all the elements of the gland at the period of highest physical development—"diffuse hypertrophy." The chronic inflammatory processes of the mammary gland present no special difficulties in classification; but they, as well as the non-indigenous tumors of the breast, are included in the table to round out the classification of all lesions, with the exception of acute mammary abscess.

TABLE I—Classification of 758 Cases of Breast Tumor.

	M.G.H.	Private Cases.	Total	Per Cent.
CARCINOMA	459	58	517	68
Fibro-Epithelial Tumors	....	....	(86)	(11)
(1) Fibrous type	....	....	(70)	(9)
1. Periductal fibroma	48	6	54	7
2. Periductal myxoma	10	2	12	1.6
3. Periductal sarcoma	4	0	4	.5
(2) Epithelial type (Cyst adenoma)	....	....	(16)	(2)
1. Fibro-cyst-adenoma	3	1	4	.5
2. Papillary cyst-adenoma	9	3	12	1.6
Hyperplasia				
1. Diffuse hypertrophy	2	0	2	.2
2. Abnormal involution	87	28	115	15
(Cystic, (59)				
(Proliferative, 56)				
Chronic Inflammation	....	....	(28)	(3.7)
1. Eczema of nipple	2	0	2	.2
2. Chronic abscess	5	0	5	.6
3. Ductal mastitis	3	0	3	.3
4. Tuberculosis	13	0	13	1.7
5. Single retention cyst	5	0	5	.6
Non-indigenous tumors	....	....	(9)	(1.2)
1. Sarcoma	4	0	4	.5
2. Lipoma	3	1	4	.5
3. Lymphangioma	1	0	1	.1
Supernumerary breast	....	1	1	.1
	658	100	758	

The diagnosis of diseases of the breast is undoubtedly the first consideration, and it is for this reason that the cases of carcinoma have been included in the above list and must now receive a brief analysis.

Cancer occurred in 459, or 70 per cent., of all tumors in the hospital cases and in 58, or 58 per cent., of the cases in private practice. The proportion of cancer to other breast tumors was thus greater in hospital cases than in private practice. This is undoubtedly due to the fact that the milder cases of benign tumor are occasionally treated in the out-patient department of a hospital and, therefore, do not enter into this number of cases, whereas in private practice all cases are included. The fact, however, is obvious that cancer forms the great majority of actual growths of the breast, and if the conditions known as abnormal involution are left out of consideration this predominance of cancer over other tumors becomes even more conspicuous.

Paget's disease of the nipple occurred in this number of cases six times in connection with cancer of one or another variety; and eczema of the nipple and areola, similar in every way to Paget's disease, but without evidence of malignancy, was found in two additional cases during this ten-year period.[5]

The forms of cancer which have developed from other benign tumors or conditions of the breast are of special interest to us in this connection. During this period thirteen cases occurred in the hospital and four in the cases of private practice, in which cancer resulted from, or was present in connection with, benign diseases of the breast.

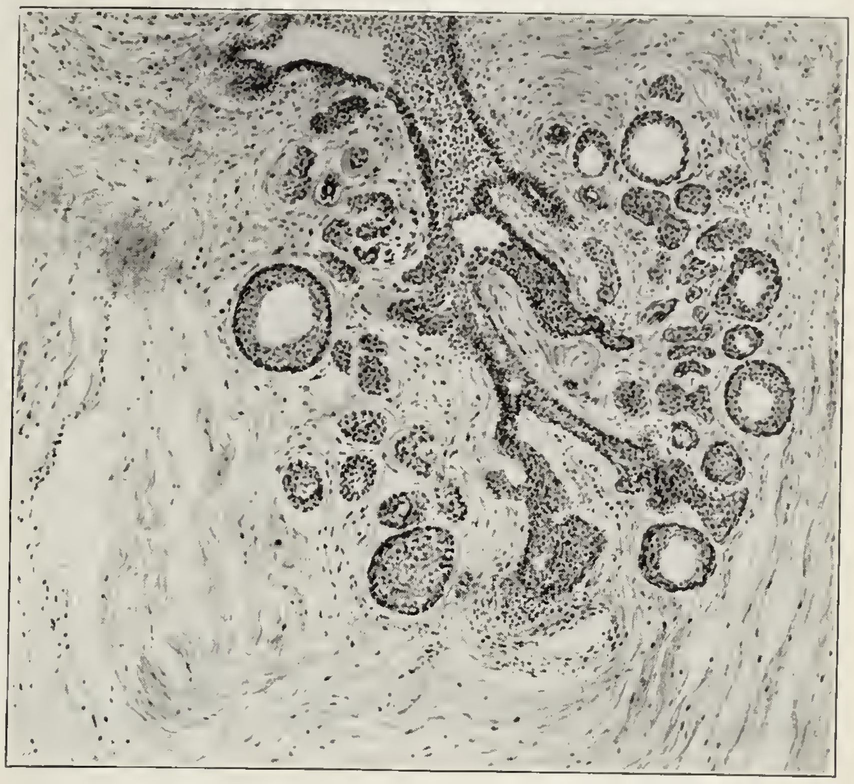

Fig. 9.—Abnormal involution. Microscopic appearances. Acinal type of epithelial proliferation.

The involution changes of the breast are those which accompany or precede cancer more frequently than any other form of benign lesion, and by far the greatest number of cases of this character, show the picture of adeno-carcinoma. Nine cases of adeno-carcinoma and three of medullary carcinoma occurred with abnormal involution. Three cases of scirrhus cancer also occurred

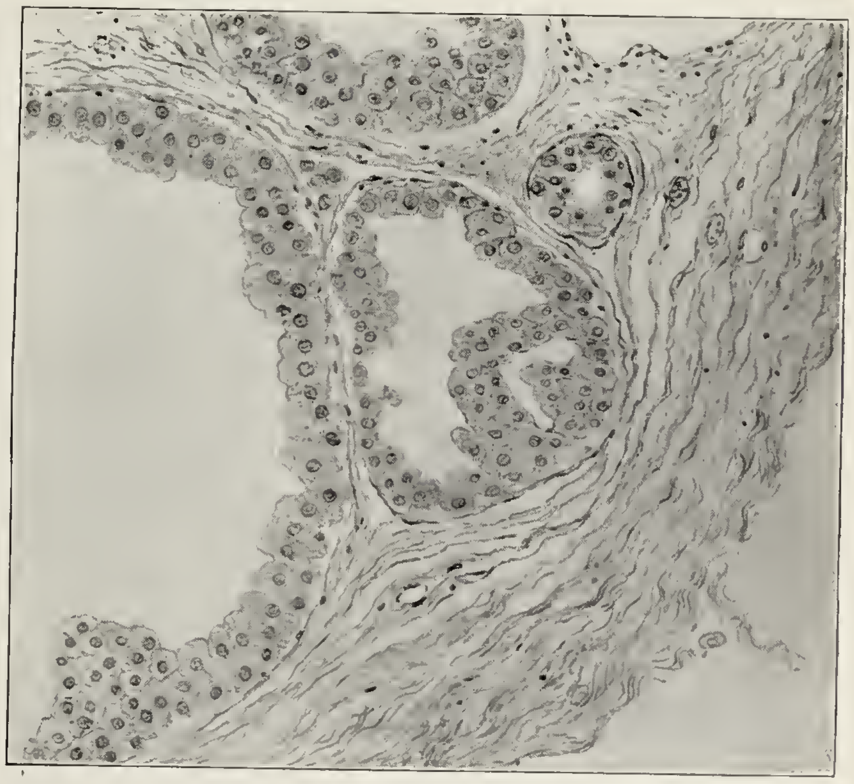

Fig. 10.—Abnormal involution Microscopic appearances. Papillary and adenomatous types of epithelial proliferation.

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[5] Ehrhardt: Deut. Zeit. f. Chir, December, 1899, vol. liv, p. 130.

which presented the lesions of abnormal involution. In the hospital series also two cases of adeno-carcinoma occurred in connection with tumors of the papillary cyst-adenoma type. The significance of these cases of cancer will be especially considered under the discussion of the benign tumors of the breast.

The age incidence of the different tumors and diseases of the breast is a matter of considerable importance in diagnosis. I have arranged Table 2 to show the number and percentage of cases of the different lesions occurring in each decade of life.

TABLE II—Incidence of Breast Tumors by Age Decades.

	No. of Cases.	10-20 Yrs.	20-30 Yrs.	30-40 Yrs.	40-50 Yrs.	50-60 Yrs.	60-70 Yrs.	70-80 Yrs.	80 Yrs.
Carcinoma	459	......	6 12%	67 60%	151 70%	130 85%	80 92%	24 100%	1 100%
Periductal sarcoma	4	......	......	......	1 .4%	3 2%	......	......	......
Periductal myxoma	10	......	5 10%	1 1%	3 1.5%	1 .6%	......	......	......
Periductal fibroma	48	4 45%	26 50%	13 11%	4 2%	1 .6%	......	......	......
Fibro-cyst-adenoma	3	......	1 2%	2 2%	......	......	......	......	......
Papillary cyst-adenoma	9	......	......	1 1%	3 1.5%	2 1%	3 3%	......	......
Diffuse hypertrophy	2	1 11%	......	......	1 .4%	......	......	......	......
Abnormal involution	87	......	7 13%	20 18%	45 21%	13 8%	2 2%	......	......
Eczema of nipple	2	......	......	......	......	2 1%	......	......	......
Chronic abscess and ductal mastitis	8	......	2 4%	2 2%	3 1.5%	1 .6%	......	......	......
Single retention cyst	5	......	2 4%	1 1%	2 1%	......	......	......	......
Tuberculosis	13	3 33%	3 6%	3 3%	4 2%	......	......	......	......
Non-indigenous sarcoma	4	......	......	2 2%	1 .4%	......	1 1%	......	......
Other non-indigenous tumors	4	1 11%	1 2%	......	......	1 .6%	1 1%	......	......
Total Cases	658	9	53	112	218	154	87	24	1

By this table it is to be seen that the proportion of cancer to other tumors of the breast is a constantly increasing one to the end of life. While between 20 and 30 years of age cancer occurs in only 6 per cent. of all cases, after 70 years the percentage is 100. All of the twenty-five tumors of the breast occurring in the Massachusetts General Hospital in ten years, in women who were over 70 years of age, were cancer.

The periductal fibromata, on the other hand, are most numerous in the third decade from 20 to 30, and constitute 50 per cent. of all tumors occurring at this period. From this time they gradually diminish in frequency until the sixth decade, after which they disappear.

Of the cyst-adenomata, we find that tumor (fibro-cyst-adenoma) which is most nearly related to the periductal fibromata, appearing in the same decades, the third and fourth, with the majority of the latter; while the papillary cyst-adenoma, beginning in the fourth decade, continues to the seventh, and therefore belongs to a distinctly later period of life.

Abnormal involution reaches high-water mark in the fifth decade, 40 to 50 years, with 21 per cent. of the tumors occurring in this period. This corresponds closely with the average age given for abnormal involution, which is from 42 to 45. The age incidence of other diseases is of less significance. The inflammatory processes, as might be expected, occur especially in the early decades, and tuberculosis, in this series of cases, appears to have affected the breasts of younger women than has generally been believed. The non-indigenous sarcomata of the breast, though few in number, occur rather in the middle period of life.

FIBRO-EPITHELIAL TUMORS.

The fibro-epithelial tumors now present themselves for consideration. These new growths of the breast have been described under so many different names that even an enumeration of all their titles is impossible. Before the middle of the last century all tumors of the breast were regarded as cancer. When Cruveilhier first recognized the existence of benign tumors of the breast a storm of opposition was raised in the French Academy of Medicine. Cruveilhier described a fibroma of the breast, but this name was not accepted, and a multitude of other names were used to describe the tumors of this character. Thus Johannes Müller adopted the term of cysto-sarcoma-phyllodes; Brodie, sero-cystic sarcoma; Sir Astley Cooper, hydatid tumor. Billroth,[6] fibroma and cysto-sarcoma; Paget, chronic mammary and proliferous cysts. Adenocele, adeno-fibroma, fibro-adenoma, cyst-adenoma proliferum and intracanalicular-papillary-fibroma are all terms which have been used at one time or another to apply to fibrous tumors of the fibro-epithelial group. The reason for this diversity of nomenclature is readily found when the attempt is made to reduce the tumor to its component parts. In one case fibrous tissue predominates, but in another the glandular structures play a more important part. Ribbert[4] undoubtedly reaches the most satisfactory solution of this difficulty by grouping the tumors of this nature apart, not as fibroma or as adenoma, but as fibro-epithelial tumors partaking of the character of both tissues. One fact, however, is apparent in the consideration of these cases; and, although

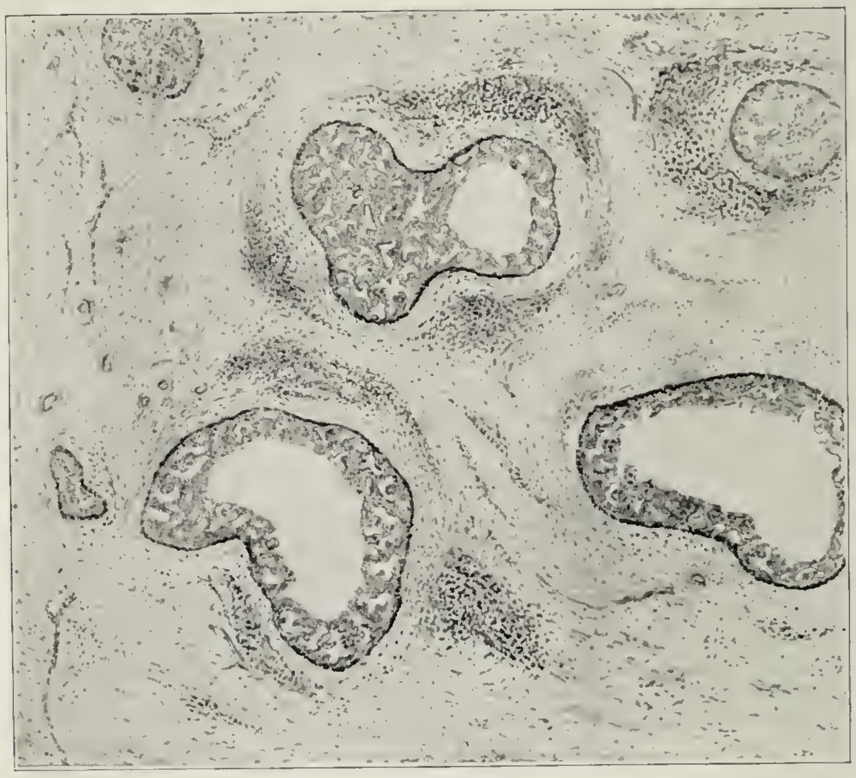

Fig. 11.—Abnormal involution and adeno-carcinoma. Microscopic appearances.

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[6] Billroth: Deutsche Chirurgie, vol. xli, Krankheiten der Brustdrüse.

long ago pointed out by Billroth,[6] this fact has not received the attention of surgeons and pathologists which is its due. I refer to the fact that the chief constituent of the tumors of the fibrous type is the peculiar transparent periductal tissue of the female breast. This periductal tissue makes its appearance and develops during the period after puberty and before lactation, and it is at this period that the vast majority of tumors of the fibrous type occur. No one can deny that this periductal tissue is essentially a part of the glandular structure of the breast, and its close relation to the epithelium of the ducts and the interdependence of the two tissues makes it practically impossible for the one to undergo the changes of tumor formation without the other participating in the process to a greater or less extent. For these reasons I have recently adopted the term *"periductal fibroma"* as the most accurate name to apply to the tumors of this character, and this term I venture to offer in the hope that the name "adeno" may be reserved for the tumors in which the epithelial elements play a more important part. Cystic dilatation of the ducts or of the characteristic clefts of the periductal fibroma may occur in certain instances, and is due in all probability to the obstruction of the pre-existing ducts. These cysts are thus secondary in character and of relatively secondary importance. The clinical characteristics of the more cystic forms of periductal fibroma are as little to be distinguished as their pathological ones, and although the attempt was made in this investigation to separate the cystic from the more solid tumors of this class, it was soon apparent that no data of value could be obtained. These tumors of the fibrous type may, however, be divided according to their richness in cells or the character of their fibrous tissue, into three groups, fibroma, myxoma, and sarcoma.

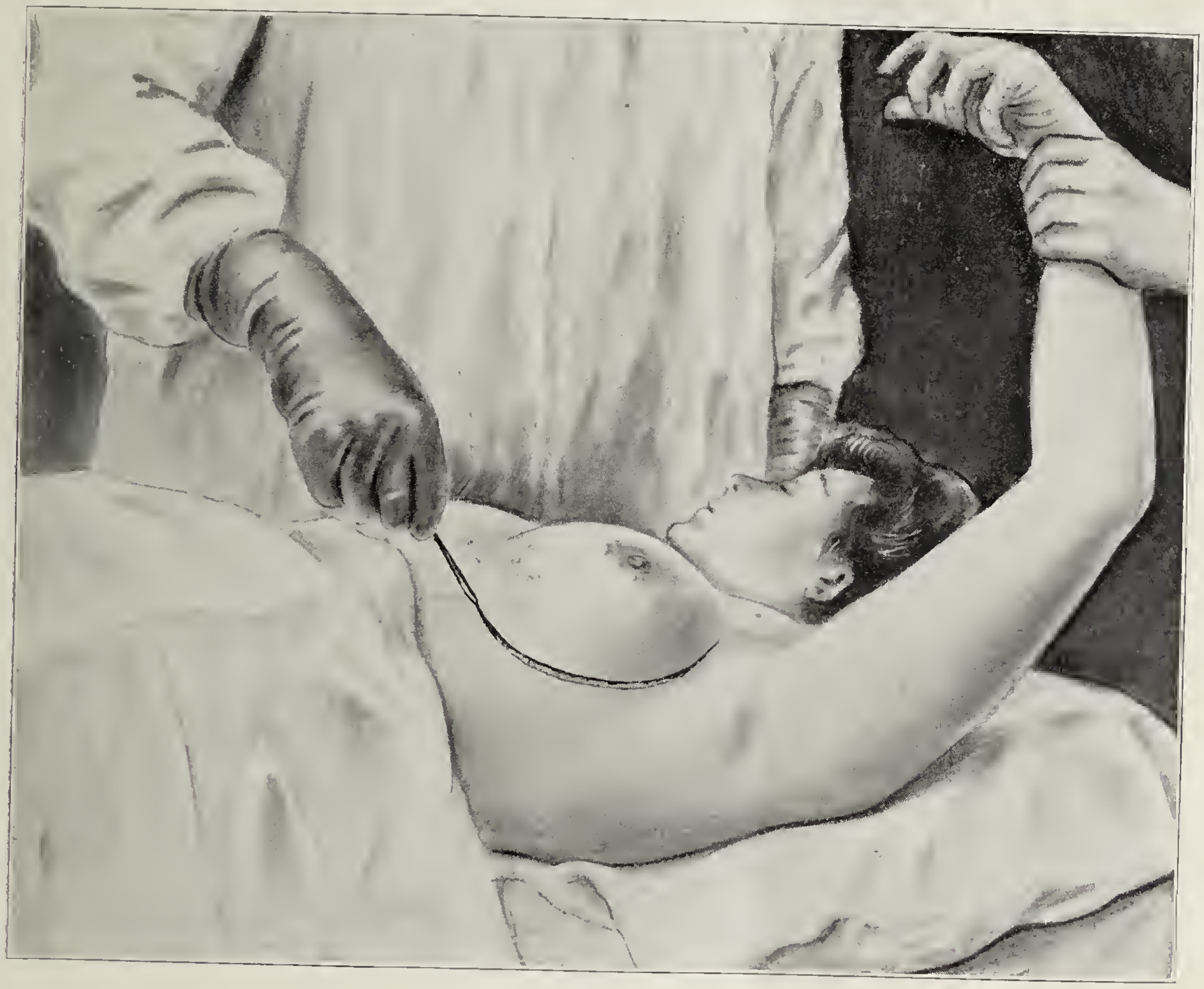

Fig. 12.—Plastic resection. Line of incision.

PERIDUCTAL FIBROMA.

Under this heading are included the true encapsulated fibro-epithelial tumors arising from the periductal fibrous tissue and composed chiefly of this tissue with a certain admixture of epithelial elements. Of this type of tumor there were forty-eight cases in the hospital series and six in private practice, 7 per cent. of the whole number of diseases of the breast. They varied greatly in size, from a bean to a cocoanut, and fifteen cases had multiple tumors in one or both breasts. The average size was about that of an English walnut. These tumors presented themselves clinically as hard nodules, freely movable in the breast tissue and under the skin. In gross appearance they presented firm, encapsulated tumors of a whitish, glistening appearance on section, and traversed by many cleft-like cavities, which were rarely distended to such an extent as to justify the term of cysts. Microscopically they showed a firm, fibrous capsule limiting them from the rest of the breast substance, but while some were composed of dense tissue, others were looser in arrangement, and some had even a myxomatous appearance which was attributable to edema.

The clinical features of tumors of this group could be summarized as follows:

The greater number occurred in women from 20 to 30 years of age. Unmarried women were most commonly affected. The tumors were of slow growth and painless, although in certain instances increased sensitiveness at the time of catamenia was recorded. The situation of the tumors in the breast was variable, but the upper outer quadrant was most commonly involved. Amputation was required three times on account of the size of the tumor; in the other cases excision or resection was the operation which was performed. Eight of the 48 cases showed cyst formation to a greater or less extent, but no clinical features served to distinguish them from the other cases. In one case the changes of abnormal involution were present in addition to the fibroma, and in one instance also carcinoma appeared to have originated in a tumor of this character.

PERIDUCTAL MYXOMA.

Ten cases occurred in the hospital series and two in private practice. The myxomata were obviously derived from the tumors of the periductal-fibrous group and differed from them only by their size, which was somewhat greater, and by the gross and microscopic appearance of myxomatous tissue on section of the tumor. It seems probable, as recorded by a number of other writers,[7, 8, 4] that the myxomatous character was

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7. Schimmelbusch: Archiv für klin. Chirurgie, 1892, vol. xliv, pp. 117 and 102.

8. Schimmelbusch: Deutsche Gesellschaft für Chirurgie, 1890, p. 117.

due for the most part to the edema of the fibrous tissue which is characteristic of the periductal fibromata of the breast. These tumors occurred later in life than the fibromata and were of long duration. Rapid growth, however, was not unusual and the tumors were generally of large size. They were all hard in consistency. Necrosis and ulceration of the skin occurred in two cases, and enlarged axillary glands were sometimes found. Adhesion to the skin was present in one case in addition to the two which showed ulceration. The pathologic characteristics were those of a large lobulated, well encapsulated tumor showing cyst cavities or clefts, and a homogeneous transparent stroma. Except for their size it is obvious that these tumors differed in no marked essentials from the tumors of the fibroma class.

PERIDUCTAL SARCOMA.

Four cases of periductal sarcoma occurred in this entire series. These were tumors of the fibrous group with a stroma so cellular as to demand classification as sarcoma. All, however, presented the combination of cellular fibrous-tissue stroma and epithelial gland ducts. They were, as a rule, large, hard tumors, involving the whole breast, the size of a cocoanut or a child's head. They were lobulated and encapsulated, with a marked tendency to ulceration and to cyst formation. The skin above the tumors was, as a rule, reddened and contained dilated veins, but was not invariably adherent. Axillary glands, as a rule, were not involved. The tumors were of long duration and the patients of advanced age, 44, 51, 53 and 57 years. They were all married women. The growth of the tumor was slow at first, but in two cases had been more rapid within the last few months. Pain was insignificant. Amputation was done in every case.

Periductal sarcoma is thus seen to be merely an exaggeration of the periductal fibroma and myxoma, occurring somewhat later in life and preenting a tumor of greater size. Tumors of this nature, although generally described as sarcoma, have long been recognized to be of a very slight degree of malignancy. Schimmelbusch[7,8] has perhaps taken the most advanced position in this regard. The encapsulation and the absence of axillary or pulmonary metastasis would appear to support this contention, and it must be admitted that fibroma, myxoma and sarcoma are all tumors which are very closely related. It is unusual, in fact, to find a specimen of periductal sarcoma which does not show in some portions the characteristic picture of myxoma and of fibroma. The tendency to malignancy of the tumors of this group is only slight, and they cause disturbance principally of a local character. The danger of carcinoma is very remote. They cannot, however, be regarded as innocuous because of the limited tendency which they present to excessive growth and ulceration. For these reasons, operative removal is indicated. This may best be done in the small fibromata by the operation later to be described, under the term of "plastic resection of the mammary gland." The larger sarcomata and myxomata, however, require amputation. Although the determination of the end results of periductal sarcoma has not been worked out, a point not coming within the scope of this paper, my own experience has led me to estimate the tendency to recurrence after operation at a far lower figure than the 50 per cent. of Gross[9].

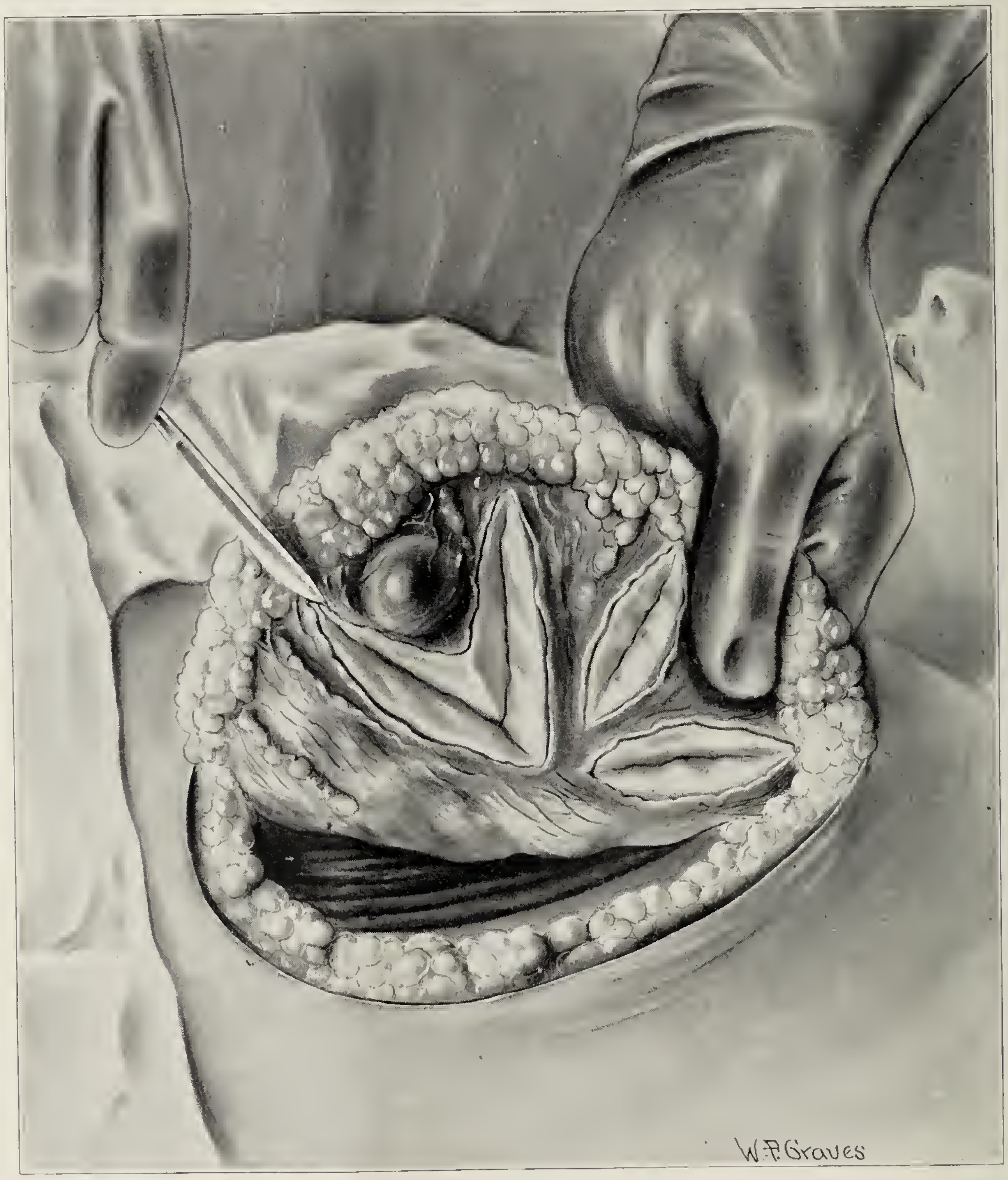

Fig. 13.—Plastic resection. Removal of wedge-shaped piece containing cysts. Radiating incisions in other lobules.

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[9] Gross, S. W.: American Jour. Med. Sci., July, 1887.

FIBRO-EPITHELIAL GROUP—EPITHELIAL TYPE—CYST-ADENOMA.

A certain number of tumors of the fibro-epithelial group present such marked epithelial changes as to merit description under another heading separate from the tumors of the periductal fibrous type. Tumors of this nature occur in two main classes; both of which, however, are much rarer than the tumors of the fibrous type. For these two classes I have adopted the names (1) *fibro-cyst adenoma*, and (2) *papillary cyst-adenoma*. The tendency to the formation of cysts in all inflammatory or neoplastic conditions of the mammary gland has been the cause of great confusion in nomenclature. A sharp line of differentiation, however, should be possible between a tumor of local unicentric growth and a diffuse process involving multiple areas in the gland or even the breast of the other side. For this reason I have seen fit to reject the term of "cyst-adenoma," for all but local new growths of a cystic character, the majority of which are tumors which come under the clinical classification the papillary type. Multiple diffuse cyst formation in the breast I prefer to class as abnormal involution, and under that heading I will go more at length into the nomenclature of other writers. The occurrence of cystic tumors among the periductal fibromata has already been remarked, and allusion was there made to their purely secondary character.

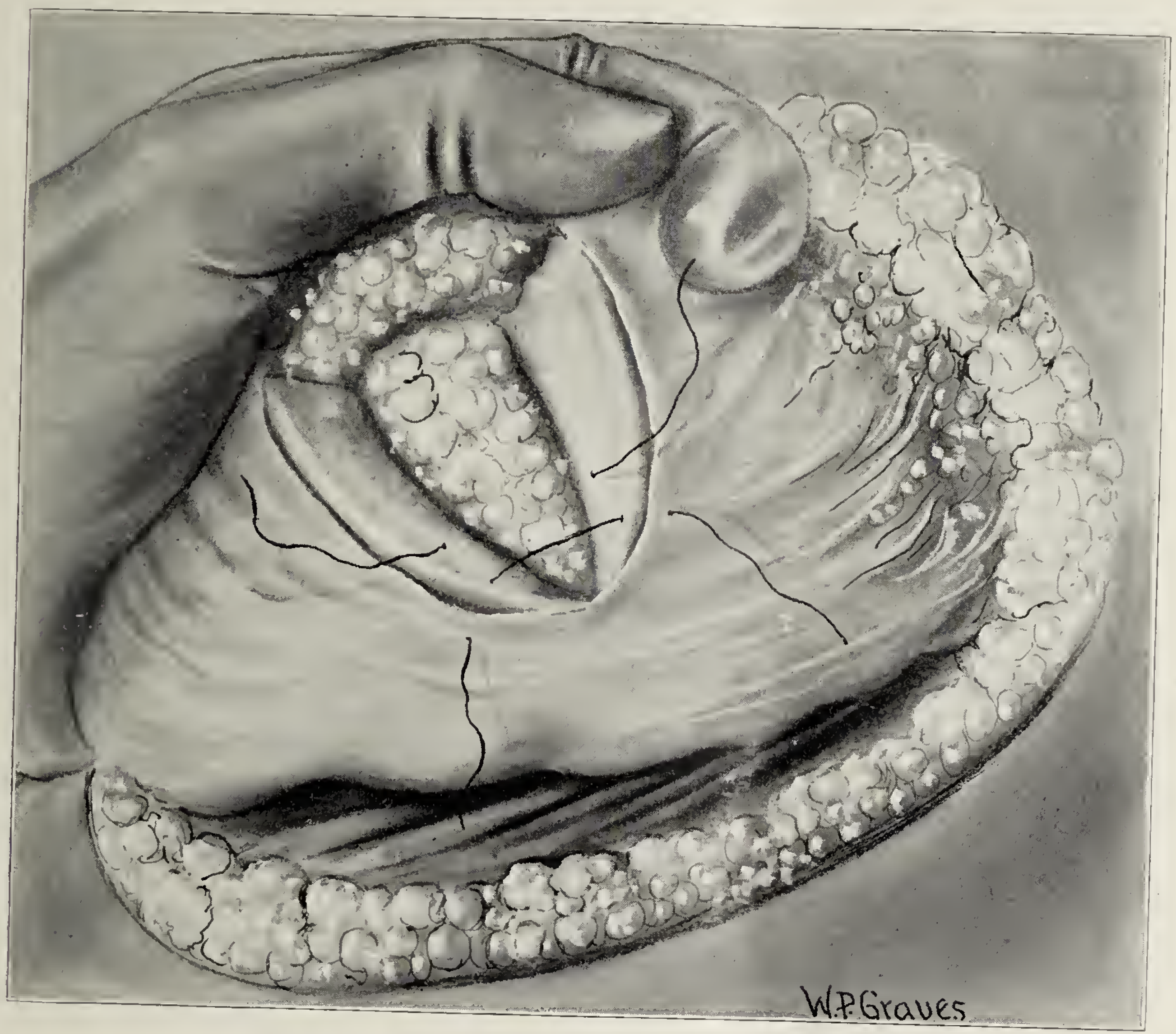

Fig. 14.—Plastic resection. Reconstruction of breast with buried sutures.

FIBRO-CYST-ADENOMA.

In four cases in this entire series secondary epithelial new growth occurred in a periductal fibrous tumor, producing a combination of lobular and cystic epithelial growth in a stroma of periductal tissue. To these tumors I have applied the name of "fibro-cyst-adenoma." They may be regarded as an epithelial exaggeration of the periductal fibroma and their anatomical structure differs from the fibroma only in the secondary proliferation of their epithelium. Tumors of this character have been described by other writers chiefly as adenomata, papillary cyst-adenomata, cysto-adenoma-proliferum, poly-cystoma, cystic fibroma, tubular-adenoma, etc. The characteristics of the fibro-cyst-adenomata were as follows. The size of the tumors varied from the size of a walnut to that of a fist. They were lobular and of hard consistency, and movable under the skin. They had in general the appearance of a periductal fibroma in which the epithelial lined slits greatly preponderate. The axillary glands were not enlarged and the nipples were not affected. On section these tumors presented a definite capsule and a lobular structure containing cysts of varying sizes. The cysts presented papillary outgrowths of connective tissue with a covering of epithelium. Microscopic examination showed marked proliferation in the epithelial cells lining the cyst cavity and covering the papillary outgrowths. The ducts appeared to be more involved in these tumors than the acini of the gland. All occurred in young single women, the average age being 32. They were tumors of slow growth and of long duration. Pain and discharge from the nipple were not recorded. All of these tumors were removed by excision without amputation of the breast.

The prognosis of tumors of the fibro-cyst-adenoma type must be regarded as entirely favorable, and removal of the tumor without amputation of the breast gives freedom from recurrence. It must be said, however, that the indication for operation in these tumors is even greater than in the fibromata, because of the epithelial proliferation which they present and the possibilities of its later development into carcinoma.

PAPILLARY CYST-ADENOMA.

The last group of tumors of the fibro-epithelial type comes under the heading of "papillary cyst-adenoma." These tumors are perhaps the most distinctive in clinical characteristics of any of the benign neoplasms of the breast. Nine cases occurred in the hospital series and three in private practice. They thus form the majority of the tumors which go to make up the epithelial division of the fibro-epithelial group. Tumors of this nature have been described by different writers under many headings. Gross,[10] in his classification in 1880, attempted to restrict to them the term "adenoma" or "true adenoma," with the intention of indicating the growth of glandular epithelium in the form of tubes and ducts which they present. The English writers[11, 12, 13] describe these tumors under the terms villous papilloma, duct papilloma, or by what, in the light of modern investigation, we must consider the misnomer "duct cancer." By German writers[14, 4, 15, 7, 16] they are commonly known as cyst-adenoma-papillare, poly-cystoma proliferum, intracanalicular cyst-adenoma, proliferating cyst-adenoma, or papillary cystoma.

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[10] Gross, S. W.: Tumors of the Mammary Gland, New York, 1880.

To my mind the term papillary cyst-adenoma is the most satisfactory name for tumors of this variety. The histologic picture of a papillary or warty outgrowth is that of a connective tissue pedicle surmounted by an epithelial covering. Papillary structures of this character are the distinguishing feature of the tumors of this group and serve to differentiate them absolutely from other benign tumors of the breast. Tumors of this character rarely attain great size. Their consistency is hard, although fluctuation may occasionally be detected. Adherence to the skin and enlargement of the axillary glands are not to be expected. The situation of the tumor in the breast is generally beneath or in close relation to the nipple. On gross examination these tumors present the picture of a cyst cavity containing papillary or villous outgrowths from its wall. The fluid contents of the cyst is generally hemorrhagic. Microscopic section shows the characteristic papillary outgrowths of connective tissue surmounted by a luxuriant growth of epithelium. The epithelium in these cases presents the characteristics of ductal rather than acinal epithelial cells. The average age of the cases of tumors of this type was 52 years; and married women, especially those who have borne children and reared large families, appear to be especially predisposed. As a rule the tumors are of slow growth and of long duration. The most characteristic symptom, however, is the discharge of bloody fluid from the nipple, which occurs in the majority of cases.

Amputation was done in three cases of papillary cyst-adenoma and resection and excision in six. The absence of recurrence after operation is strong evidence in favor of the right of the tumor to a place in the category of benign neoplasms.

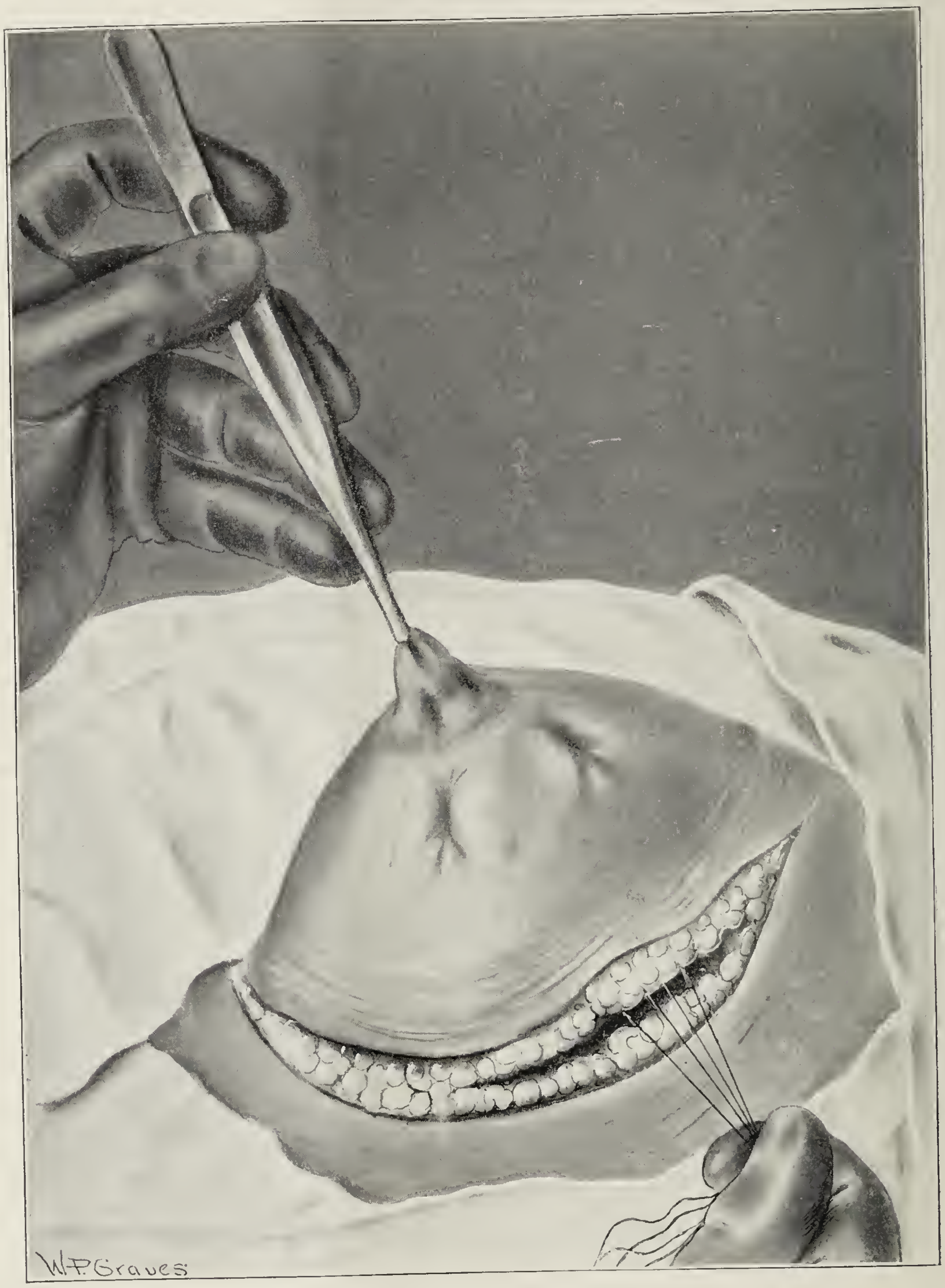

Fig. 15.—Plastic resection. Reconstruction of breast with buried suture. Eversion of nipple.

Papillary cyst-adenoma is thus seen to be a tumor occurring late in the life history of the breast, and one to which the functional activity of the gland in a certain measure predisposes. They are comparatively rare, but their significance must not be overlooked on that account, and it should be noted that although only nine cases occurred during this decade in the hospital

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[11] Bryant: "Diseases of the Breast." Cassel & Co., London, 1887.

[12] Sheild. "Diseases of the Breast," London. McMillan & Co., 1898.

[13] Williams: "Diseases of the Breast," London, 1894. John Bale & Sons.

[14] v. Angerer: von Bergmann's, Bruns' and Mikulicz' Handbuch der Prakt. Chirurgie, vol. ii. p. 569.

[15] Sasse: Archiv. für klin. Chirurgie, 1897, vol. liv. p. 1.

series, during that time two cases of cancer were found in which this disease was also present. In fact papillary cyst-adenoma has been thought to predispose to a special form of cancer, "adeno-carcinoma-destruens" (Tietze[16]), and this condition was present in both of the cases to which I have referred. The prognosis then of these tumors with early and complete removal is good. If not removed by operation, however, the danger of malignant sequelæ is very great.

HYPERPLASIA.

The term "hyperplasia" I have reserved in this classification for those processes in the breast which are of a diffuse character and for this reason to be sharply differentiated from the local unicentric process of actual tumor formation.

By hyperplasia is meant an increase in the fibrous and epithelial elements of the breast, affecting one or more lobules of the gland, and presenting the microscopic picture of an increase in the number of cell elements of both of the significant tissues, the fibrous stroma and the epithelium. Under this category two main divisions can be made: (1) "diffuse hypertrophy" of the breast, and (2) abnormal involution.

DIFFUSE HYPERTROPHY.

The so-called "diffuse hypertrophy" of the breast is a rare disease, but one which has received attention from many writers.[17] Two instances of this disease are included in the hospital series of cases, and fortunately the two cases serve to illustrate well the two main subvarieties of this condition.

One form of diffuse hypertrophy and perhaps the most common variety, is that which occurs in connection with pregnancy.

Of this form we have an example in the case of a woman of 43, who had undergone two miscarriages and who presented the abnormalities and diseases of the pelvic organs which have so frequently been noted in connection with this disease. Both breasts were affected and were uniformly enlarged. The consistency of the breasts was soft, but hard, stringy nodules could be detected on palpation. Microscopic examination showed the presence of fat, loose fibrous tissue and atrophied gland structures. There were no cysts nor discrete fibromata. The breasts gave trouble only from their size, and the pain was of an insignificant character; a double amputation was performed.

The other case serves to illustrate the condition as it appears in younger women. This occurred in an unmarried girl of 17, and involved the left breast only, which was enlarged to two or three times the size of the breast on the other side. The consistency of the breast was nodular and corded, and tenderness or "mastodynia" in this case was a marked feature. Irregularity of catamenia was noted, but no other abnormality of the pelvic organs could be determined. In this case no operation was done and a year and a half later, under palliative treatment by supporting bandages, the enlargement of the breast had partially subsided, and tenderness and mastodynia had diminished to a moderate extent.

ABNORMAL INVOLUTION.

The hyperplastic changes in the tissue of the mammary gland which accompany the process of involution have long been the subject of contention and controversy among pathologists and clinicians. The chief source of difficulty in the classification of the involution changes of the breast is undoubtedly to be attributed to the tendency which the gland exhibits to the formation of multiple cyst cavities. In all probability a moderate degree of dilatation of the ducts may be considered the normal condition of the breast at a certain stage of its decline, and only when these cysts and their surrounding stroma become so extensive as to attract attention by the induration which they produce, does the process attain a degree of abnormality sufficient to classify it as pathologic. Multiple cystic disease of the breast has long been recognized, and has been many times described under a multitude of different terms. Abernethy and Bell considered this a form of hydatid disease as did also Sir Astley Cooper. Brodie took the view that the cysts were caused by dilatation of the preexisting ducts, and the French surgeons of that time agreed in this interpretation. Paget believed that cysts were formed in the breast both by obstruction and by active new growth, and the German school of pathologists of that time were inclined to attribute the multiple cysts of the declining breast to an active new growth of the acinal epithelium, although Virchow was a believer in the obstructive origin of mammary cyst formation. A new impetus was given to the study of this disease by Réclus,[18] who in 1860 attempted to show that the cysts were produced by an active new growth of the epithelium of the gland closely allied to carcinoma, and gave to it the name of intra-acinous cystic epithelioma. Later publications in 1887 called attention more specifically to the epithelial origin of these growths, and the disease became known in France as the "maladie de Réclus."

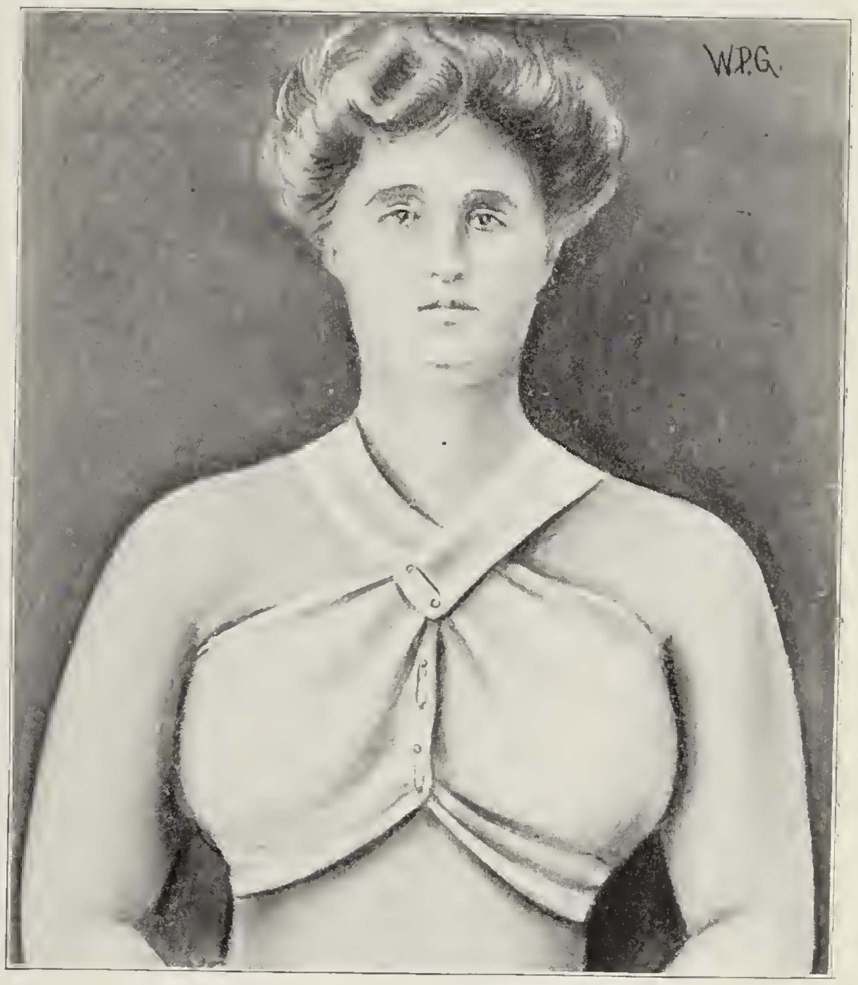

Fig. 16.—Empire bandage.

From the time of Réclus' later publications, many different theories have been advanced to explain the occurrence of multiple cysts in the involuting breast. These theories may be grouped into three main classes which may be briefly described as follows:

1. *Inflammatory Theory.*—The prevailing theory

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[16] Tietze: Deutsche Zeitschrift für Chirurgie, 1900, vol. lvi, p. 512.

[17] Kirscheim: Archiv. für klin Chirurgie, 1902, vol. lxvii, 2, p. 582.

[18] Reclus: Gazette des Hopitaux, July 7, 1887, p. 673.

among French[19, 20, 21] and English surgeons, [22, 23, 12, 13] and the view which has been vigorously supported by Koenig[24] and other German surgeons,[25] attributes the cyst formation to inflammatory origin, "chronic cyst mastitis." Whether this inflammatory process arises from infection of the ducts, as believed by the French writers, or whether it is of a more remote character is not determined. The chief points on which the theory is based are the evidences of chronic inflammation in the round-cell infiltration and thickened stroma of the gland, and in the clinical course of the disease, which is thought to be subject to repeated exacerbations. Koenig lays great stress upon the increased swelling and sensitiveness at the time of the catamenia.

2. *New-Growth Theory.*—The second theory, advanced originally by Schimmelbusch,[7] and supported by Sasse,[15] Maly,[26] and to a certain extent by Tietze,[16] attributes the process to an actual new-growth. This theory is widely accepted in Germany, and has obtained some support in other countries. Because of the supposed relation to tumor formation, the names of cyst-adenoma (Schimmelbusch[7]) poly-cystoma (Sasse[15]), or cystoma (Tietze[16]) have been proposed. It should be stated that Sasse and others attempt to distinguish the lesser degrees of this disease, under the name of "involution cyst," from the more advanced process of "poly-cystoma." The line, however, between the two conditions appears to be determined with the greatest difficulty.

3. *Involution Theory.*—A later theory, and the one which has been supported by the investigations which have been carried on in this country, rejects both the inflammatory and the neoplastic origin, and refers the proliferation of the breast epithelium to the abnormal conditions produced by involution. This is, in a measure, a return to the views of Réclus, who recognized the significance of the epithelial proliferation, but erred, in considering this the origin of the process.

Tietze[16] agrees that the disease is chiefly epithelial in character, and of a more diffuse distribution than would warrant the title of a tumor. Bloodgood[27] has recognized this fact in the name which he suggests of "senile atypical parenchymatous hypertrophy." Greenough and Hartwell[28] made a study of thirty cases of this disease in 1902. By these writers the chronic appearances of the stroma of chronic cystic disease of the breast are considered to be of secondary importance, whereas the diffuse character of the epithelial proliferation is thought to be evidence sufficient to prevent the interpretation of the process as an actual new-growth. According to their views, the connective tissue increase is attributed to the normal process of involution and atrophy which the breast gland shares during its declining stage, with other organs of the genital apparatus. Cystic changes of the ducts and acini are produced by obstruction from this thickened fibrous tissue. Up to this point the process may be considered physiologic. It has long been understood, however, that the epithelium of the breast gland is of notoriously unstable equilibrium, and the abnormal condition of cyst formation provides a stimulus which in about half the cases of this disease, as nearly as can be estimated, leads to secondary proliferation of the epithelium. Were we able to state at what point this epithelial proliferation would cease, no danger from this disease need be apprehended, but it has been determined by a number of different observers that in the proportion of about one case in ten this epithelial proliferation oversteps the bounds of hyperplasia into the territory of malignant new-growth. It is probably to these proliferative cases of abnormal involution that Sasse and Schimmelbusch would restrict the term poly-cystoma or cyst-adenoma, and it must be confessed that a certain number of advanced cases of abnormal involution can be distinguished with great difficulty from actual new-growth. It has seemed to me, however, to be safer to restrict the term "cyst-adenoma" to tumors of local origin and well determined outline, and to apply the general term of hyperplasia or abnormal involution to all of those diffuse processes which by their microscopical appearances are still within the pale of benign diseases of the breast.

The chronic interstitial mastitis of the English writers,[22, 23, 11, 12] chronic cirrhosing mastitis (Billroth[6]), maladie cystique de la mammelle or intra-acinous cystic epithelioma (Réclus[18]) maladie de Réclus,[10] maladie noneuse de la mammelle (Phocas[21]) chronic cystic mastitis, (Koenig[24]), periductal mastitis (Delbet[20]), poly-cystoma epitheliale (Sasse[15]), cyst-adenoma (Schimmelbusch[7]), plexiform fibroma (French[19] writers) chronic mastitis or diffuse fibro-adenoma (Wood[29]), cystic disease of the breast (Bryant[11]), and fibrous and glandular hyperplasia with retention cysts,—are but a few of the designations which have been applied to this disease. The last term, which was evolved by Dr. W. F. Whitney pathologist to the Massachusetts General Hospital, is probably the most correct and satisfactory appellation for this condition which could be devised, but suffers in being too unwieldy for practical use. For this reason I prefer the name of "abnormal involution."

Eighty-seven cases of abnormal involution appear in the hospital series and 28 in the cases from private practice. Of this total number 59 show lesions which are classified as cystic only, the remaining 56 presenting evidence of epithelial proliferation. A certain amount of fibrous tissue increase with more or less round-cell infiltration is characteristic of involution of the breast under any circumstances.

The changes which have been classed as cystic are those presented by breasts in which this fibrous thickening has produced dilatation of the ducts alone without obvious changes in the character of the epithelium. The proliferative group are those which are characterized in addition by proliferative changes in the epithelium of the cysts or acini.

Of the proliferative group, three subdivisions have been distinguished according to the character or degree of the epithelial growth. (1) Proliferation of the acini, (2) papillary outgrowths of epithelium into cysts, and (3) adenomatous proliferation of epithelium. The significance of these three groups will appear in the discussion of their special characteristics. The gross appearances of cases of abnormal involution may be summarized as follows: A considerable proportion of the cases are diffuse in character, while others present local indurations of the breast tissue of varying size and situation. The consistency of this induration is hard or nodular, although softer and even fluctuating areas are occasionally noted. It would seem, however, that a cyst to be appreciated with certainty by its elastic feeling or fluctuation must attain considerable size. Pain and tenderness are present in about half of the cases, and although not diagnostic this symptom must be considered of significance in view of the generally painless character of carcinoma. Axillary glands are detected in only a small proportion of the cases. It has been my impression, based on clinical experience, that inversion of the nipple is a frequent accompaniment of abnormal involution, and it may certainly be stated that previous diseases or abnormalities of the breast, such lesions especially as interfere with the normal function of the gland, are predisposing factors in the origin of this disease.

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[19] Binaud and Braquehaye: Dentu and Delbet's Traité de Chirurgie, Paris, 1899, vol. vii.

[20] Delbet: Bull de Soc. d'Anat. de Paris, January, 1893, Paris.

[21] Phocas: Report of Fourteenth French Congress of Surgeons, Paris, 1901, p. 470.

[22] Banks: Lancet, 1900-01, p. 843, and 1902-01, p. 309.

[23] Paul: Transact. London Pathological Soc., 1901, vol. lii, p. 30.

[24] Koenig, F.: Lehrbuch der Speciellen Chirurgie. (Sixth edition.) Vol. ii, Hirschwald, 1893, Berlin: Centralblatt für Chirurgie, 1893, vol. xx, p. 49.

[25] Roloff: Deutsche Zeitschrift für Chirurgie, 1899, vol. liv, p. 106.

[26] Maly: Zeitschrift für Heilkunde, 1898, xix, p. 355.

[27] Bloodgood: Jour. Amer. Med. Assoc., Aug. 6, 1904, p. 367.

[28] Greenough & Hartwell: Journal Medical Research, 1903, vol. ix, No. 4, p. 146.

[29] Curtis & Wood: Medical News, New York, Aug. 13, 1904, p. 294.

On gross examination these specimens show fibrous induration of the breast gland with the presence of multiple cystic cavities containing fluid varying from a clear serum, through all the shades of brown and green and black. The process is diffuse in the vast majority of cases, although one lobule of the gland is often noted as the situation in which the disease is most advanced. Under microscopic examination fibrous hyperplasia and secondary involvement of the gland structures with cyst formation is observed.

The majority of cases occurred between 40 and 50 years of age. Married women were apparently the more susceptible to the disease. The duration was a matter of considerable variation, and the rate of growth was generally slow. Trauma was apparently of comparatively little etiologic importance. In this series of cases the relation between exacerbations of the disease and the catamenial period was conspicuous by its absence, only four cases having stated that the induration was influenced in its sensitiveness or in size by the monthly period. Discharge from the nipple was noted in fourteen cases, and was relatively more frequent among the proliferative than among the purely cystic types of involution. The character of the discharge varied from yellow serum and watery or milky fluids to brownish and bloody fluid and even pus. Of the fourteen cases, however, which showed a discharge from the nipple, seven presented tumors immediately beneath the nipple, and it is probable that discharge from the nipple will be found to depend more on the situation of the cyst than on the character of the epithelial changes within its wall. The right breast was involved in 27 cases, the left in 42, and both breasts in 17. The tendency to the involvement of both breasts in this disease is worthy of remark. So far as the situation of the induration in the breast tissue is concerned, the outer and upper hemispheres appear to be the seats of predilection; and the upper and outer quadrant, as in almost all diseases of the breast, is the region most commonly affected. Diffuse induration involving the whole breast occurred in 14 cases. Operation was performed in 86 of these 87 cases. In 41 the entire breast was amputated. In 45 an excision or resection of the breast was done after the method later to be detailed.

The subclassification of the cases of the proliferative type is of interest only from a histologic point of view, and can be determined only by microscopic examination.

The 36 hospital cases which presented proliferation were subdivided as follows: Ten showed an apparent increase in the number of the gland acini, when compared with normal breasts of the same age, and conditions of marriage, childbirth and lactation. This increase in the number of acini was accompanied in the majority of instances by a proliferation of the epithelium to such an extent that thickened or even solid columns of cells were produced, retaining, however, the characteristic formation of the gland ducts, and presenting no infiltration beyond the basement membrane. The significance of this form of proliferation could not be determined from the cases which were available for examination. But it is not improbable that it may ultimately lead to carcinoma. In support of this assertion one case of scirrhus cancer occurred in the hospital series and two in private practice, in which abnormal involution of the acinal type was also present. The clinical characteristics of cases of acinal proliferation were not to be distinguished from those of other types of abnormal involution.

Another class of epithelial proliferation in abnormal involution is to be described under the term of papillary proliferation. This group again is one of only histologic significance. By this term is meant a growth of epithelium in cyst cavities of such a nature that the epithelial cells are heaped up and project into the cavity, without a connective tissue pedicle or support. The microscopic picture of this papillary projection suggests strongly that more epithelium is produced in the lining of the cyst wall than can be accommodated on the basement membrane, with the result that certain portions are forced out toward the center of the cavity. There were 18 cases of abnormal involution which presented this form of proliferation. Of this class, again, the clinical characteristics are not to be distinguished from those of other forms of abnormal involution.

The third and last type of epithelial proliferation which is to be distinguished is that to which Tietze[16] and Greenough and Hartwell[28] have applied to the name of "adenomatous" proliferation. Adenomatous proliferation occurs only in cases in which papillary outgrowths are already present, and must be regarded as a somewhat more advanced type of epithelial growth. In these cases the papillary outgrowths from different portions of the cyst wall appear to meet and fuse together, and the resulting microscopic picture is that of a space filled with epithelial cells in which here and there an open gland lumen is observed. This form of proliferation occurred in eight of the hospital cases and in four of the cases from private practice.

Adenomatous proliferation derives its greatest interest, however, from the fact that it is chiefly in its presence that we find the combination of involution and carcinoma. During the ten years in which the 12 cases of adenomatous proliferation have been collected, 517 cases of cancer have come under observation. Of this number there were 15 which presented the lesions of abnormal involution and carcinoma. Three of these cases showed scirrhus carcinoma in connection with abnormal involution of the acinal type of proliferation. These have already been considered. Of the remaining 12 cases, 9 showed adenocarcinoma with involution changes of the papillary and adenomatous character. In the three other cases medullary carcinoma of a more advanced type was recorded in the pathologic report. Thus during the collection of 115 cases of abnormal involution 15 cases of this disease in combination with carcinoma were obtained, or 13 per cent. This figure is somewhat greater than the 10 per cent, which has been found by Tietze,[16] Greenough and Hartwell,[15] and others; but may be considered as very closely approximating the actual condition.

Attention must again be called to the fact that the clinical symptoms of these proliferative types of abnormal involution are to be distinguished in no way from those of simple abnormal involution, and by no sign on physical examination can the degree of epithelial growth be determined. Microscopic examination is therefore absolutely necessary for the correct classification of the individual case, and in fact the variation between the different portions of the same gland is so great that microscopic examination of all of the tissues is necessary to a correct diagnosis.[30] For these reasons and because of the liability to carcinoma which these cases present, I have no hesitation in recommending operative treatment for abnormal involution in every case. An induration in the breast gland at or about the time of the menopause which is palpable with the flat of the hand against the chest wall I consider sufficient indication for operation.

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[30] The prognosis of a given case of abnormal involution untreated is a matter of some uncertainty. Spontaneous rupture or discharge of the cyst through the nipple may rarely occur, and the entire process subside for a time, or indeed, forever. Suppuration of the cyst is occasionally observed. More often the disease becomes stationary at a certain stage of its development or advances slowly involving more and more of the gland and the breast of the opposite side. Carcinoma develops in something more than 10 per cent of all cases.

For cases of this character I perform "plastic resection of the mammary gland," by means of which a thorough exploration of the gland may be obtained and portions of a suspicious nature may be removed for microscopic investigation without the mutilation of an amputation. This operation I would recommend for every case of abnormal involution in which the diagnosis can be established.

CHRONIC INFLAMMATORY DISEASES.

The chronic inflammatory diseases of the breast are divisible into two main classes, those occurring in connection with lactation, and those produced by specific inflammatory diseases such as tuberculosis. It is to these diseases of the breast that the much abused term "chronic mastitis" should really be applied, but this term has been so loosely employed that its use in any way is at present inadvisable. In addition to the two main classes detailed above, I have ventured to place in the category of chronic inflammation two cases of non-malignant eczema of the nipple, and five cases of single retention cyst of mechanic origin. It is to be regretted that no case of syphilis or actinomycosis entered the hospital during this decade, as it is under this heading that these diseases should be classified.

There were eight cases of chronic lactation mastitis and thirteen of tuberculosis in the hospital series. Chronic lactation mastitis has been again subdivided into five cases of chronic abscess and three of inflammation of the ducts (ductal mastitis). The cases of ductal mastitis show multiple small abscesses and necrotic foci distributed through the breast gland in close relation with the larger ducts. Clinically they present tender indurated masses in the breast. The mass may be adherent to the skin, and enlarged axillary glands may be present. Microscopically these breasts show an increased amount of fibrous tissue with small yellowish foci of necrosis and abscess cavities, while the tissue about the ducts is infiltrated with great numbers of small round cells and leucocytes. The disease especially affects young women, and may be attributed to infection of the ducts during the process of lactation. The chief clinical characteristics are diffuse induration of the breast occurring shortly after lactation, with a tendency to involvement of the skin and more pain and tenderness than would be expected with a tumor. In two of our cases the breast was amputated, and in one the affected lobule was excised.

CHRONIC ABSCESS.

Five cases of chronic or subacute abscess of the breast occurred during the decade. All presented a tumor or nodular induration of the breast of varying size, and in only one case was fluctuation to be detected. Tenderness, adherence to the skin and enlargement of the axillary glands were occasionally noted. The pathologic examination showed one or more abscess cavities of varying size, and microscopic examination showed excessive infiltration of the gland tissue with leucocytes and round cells. The patients were all young adults. All were married, and four had had children, but one had never been able to nurse her child. Two gave a history of previous acute breast abscess. The abscesses were, as a rule, of slow development, and pain was not a pronounced symptom. In two cases old discharging sinuses from previous acute abscesses were still present. In three cases incisions with drainage were made; in one case the breast was amputated, and in one the affected lobule was excised.

GALACTOCELE.

One of the cases of chronic abscess presented, in addition to the abscess, the picture of a retention cyst in a breast which was in active lactation. This condition has been repeatedly described under the name of galactocele, but its occurrence is comparatively infrequent, as may be seen from the fact that but one instance occurred in our total of 758 cases. The symptoms of galatocele do not differ appreciably from those of single retention cysts, except that the condition occurs in a breast which is yet, or has been recently, in active lactation. Under these circumstances the contents of the cyst is of a milky rather than of a serous character, because of the milk-secreting function of the cells which line the cyst at this period of the breast's development.

TUBERCULOSIS.

In this division are included the thirteen cases of chronic disease of the breast produced by the tubercle bacilli. Indurated masses of varying size were produced in the breast, of irregular outline and varying consistency. Tenderness and fluctuation were present in most of the cases. The tendency to involvement of the skin was marked, and in seven cases there were discharging sinuses present at the time of operation. Enlargement of the axillary glands was generally noted. Tuberculosis of other organs was present in only three cases. Microscopic examination of the specimens showed the characteristic tubercular tissue with cheesy foci of necrosis and the typical histologic peculiarities of tuberculosis.

The average age was 30 years, and in three cases the patients were under 20 years of age, although the disease was well distributed through the decades of adult life. Married women who had borne children appeared to be the most susceptible, and in two cases acute abscess had occurred during a previous lactation. The average duration was nine months and the development of the disease was of a chronic character. Pain was absent in about half the cases. Both breasts were involved in only one case; and the upper and outer quadrant was again the seat of predilection. In seven cases the breast was amuptated, in four a portion was excised, and in two the abscess was simply opened and drained. The immediate result in all of these cases was satisfactory.

SINGLE RETENTION CYST.

Five cases occurred in the hospital series which presented the characteristics of a single cyst, of varying size, with no abnormality of the surrounding tissues. These cases have been separated from those of abnormal involution because of their purely local character and the absence of pathologic changes in the breast tissue in their immediate vicinity. It is not to be denied that a certain number may belong properly among those of abnormal involution, and that a more extensive examination might have given data which would justify their inclusion among the latter class. In the absence of these data, however it has seemed wiser to place the single retention cysts in a separate class. Cysts of this character have been described under the name of "evolution" cysts by Gross.[10] They differ in no way from the simple cysts produced in other glandular structures by accidental occlusion of a duct. We are especially familiar with cysts of this type in the epididymis and the salivary glands. Occlusion of a duct may be due to any one of a number of different causes; congenital defects, trauma, and the scars of transient inflammatory processes of the nipple or in the substance of the gland; being perhaps most frequently observed. Operations on the breast for small fibromata are not infrequently followed by cicatricial obstruction of the ducts.

The five cases here presented varied from 21 to 49 years of age—three were single and two married women. The duration was comparatively short (an average of about two months) and development was rapid; there was no pain or tenderness as a rule, and the clinical appearances were those of a single, painless, elastic, fluctuating tumor, varying in size from a walnut to a hen's egg, and of uniform and rapid growth. The axillary glands were not enlarged. Excision was done in every case, and a single thin-walled cyst removed without other abnormality of the gland. The fluid contained in these cysts varied from clear serum to a fluid of yellowish brown color—with more or less turbidity. The significance of a single retention cyst in the breast must be considered very slight, and their chief interest and importance lies in the difficulty in distinguishing them from the multiple cysts of abnormal involution. Because of this difficulty, exploration and excision are to be advised.

NON-INDIGENOUS TUMORS OF THE BREAST.

A certain number of tumors of the breast occur which are situated in that organ only accidentally, as it were, and have no special relation to the mammary gland as regards their origin. Among these tumors I have classed the sarcomata which were derived, not from the periductal tissue, but from other sources, and which presented no evidence of inclusion of the glandular elements of the breast. Two of these tumors were classified as fibro-sarcoma, one was of mixed cells and one of spindle cells. All were much smaller in size than the periductal sarcomata, and all appeared to involve the breast gland before removal. The tendency to the involvement of the skin in these tumors was marked, two being actually ulcerated and one other showing marked adherence and brownish discoloration. The ages varied widely, from 33 to 70 years. All were in married women. The duration varied from 6 months to 10 years. Two were of slow growth and two more rapid within the last few months. Discharge from the nipple was not noted and the axillary glands were found enlarged in only one case. Pain was generally present. Amputation was done in three cases and extensive excision in the fourth. The origin of these tumors appeared to be from the connective tissues forming the stroma of the mammary gland. The essential anatomic elements of the mammary gland were merely displaced by their growth, and they differ in no respect from sarcoma of a similar character arising in other organs. Their size was smaller than the periductal sarcoma, but with this exception the two forms were with difficulty to be distinguished.

The other non-indigenous tumors of the breast were lipoma and lymphangioma. Three cases of lipoma occurred in the hospital series and one in private practice. They were freely movable and not tender. No enlargement of the glands or abnormality of the nipple could be detected. They were multiple in one case. The ages of the patients varied from 20 to 66 years, the duration of the tumors from three to 20 years. They were of slow growth and occasioned no objective symptoms. All of the cases were operated on, excision being done in two and amputation in a third.

A single case of lymphangioma occurred during this decade. This was a cavernous lymphangioma in a girl of 16, which started in the axilla and involved the breast only by secondary extension. It was of six years' duration. Examination showed a dense fluctuating tumor the size of a man's head occupying the position of the breast, but being situated behind the gland and extending from there to the axilla and into the neck. The whole mass was removed without amputation of the breast and the patient made a good recovery.

SUPERNUMERARY BREAST.

One instance of this condition is included in the series of cases from private practice, and another was accidentally discovered in one of the hospital cases of periductal fibroma. Both occupied a situation at the anterior margin of the axilla; and this appears to be the most common site, although supernumerary breasts in other situations along the so-called "milk-line" from the axilla to the groin, are occasionally reported (Young[31]).

Both cases presented a small collection of glandular tissue without a nipple. No symptoms were produced in either case, and in one the tumor was discovered only in routine physical examination. In the other anxiety was aroused by the presence of the axillary tumor, but was promptly relieved when the correct diagnosis was ascertained.

In neither of these cases was there any evidence in support of the theory that supernumerary breasts are more prone to tumor formation than breasts in a normal condition; and indeed this theory is probably one of those which have been handed down from writer to writer without satisfactory evidence for its support (Martin[32]). The rarity of cases of supernumerary breast (only two occurring in 758 cases) is the probable explanation of this uncertainty in the matter of prognosis.

PLASTIC RESECTION OF THE MAMMARY GLAND.

As Stewart[33] justly says, there is a lamentable and unnecessary difference of opinion as to the treatment of doubtful tumors of the breast.

Many of the tumors are situated in such portion of the gland as to involve disfiguring scars in a conspicuous locality if an incision is made directly over the tumor. Many operations designed for benign tumors involve an amputation of the breast. This unfortunate organ has suffered countless mutilations in times past in conformity with prevailing customs. Thomas[34] first sought to overcome this difficulty by proposing an incision along the lower and outer border of the breast, but details as to his technic are wanting in the original article, and the method does not seem to have been generally adopted.

In the treatment of cysts Abbé[35] has advocated an exploratory puncture, and gives a large number of permanent cures effected by simply evacuating the cyst. McGraw[36] has also written upon the treatment of cysts by aspiration, and in the main agrees with Abbé, although he notes two cases in which he observed the development of cancer after this procedure. Bull[37] also has long been an advocate of aspiration of cysts, and had no cases of cancer following aspiration in his own experience. McGraw's two cases, however, are excellent concrete examples of the theoretical dangers of aspiration.

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[31] Young, E. B.: Boston Medical and Surgical Journal, vol. cl, p. 319, 1904.

[32] Martin, E.: Archiv. für klin. Chirurgie, 1893, vol. xlv, p. 880.

[33] Stewart, J. Clark: THE JOURNAL A. M. A., Aug. 6, 1904, p. 365.

[34] Thomas: New York Medical Journal, 1882.

[35] Abbé: Medical Record, New York, Aug. 15, 1903.

[36] McGraw: American Medicine, July 25, 1903, p. 142.

At one time I was in the habit of using exploratory puncture to determine the nature of a doubtful growth, and for this purpose used a Mixter punch (a long steel cylinder of small caliber with a handle at one end and sharp edges at the other). Richardson, however, later reported cases in which an extension of the cancerous process was observed along the line of puncture; and although I have succeeded in curing many a cyst by puncture, I have abandoned it as routine practice. In doubtful cases it may cause serious displacement of cancer cells; in cases of cystic disease it disposes only of the larger cysts. I should still use the method, however, in exceptional cases, such as in the presence of a large cyst near the nipple in a small breast which could be easily palpated.

Herbert Snow[38] has recently recommended removal of cystic tumors of the breast by forcible massage. Cysts can undoubtedly be ruptured in this way and permanently cured, but it is not a method of precision, and would be most dangerous advice for general adoption.

Stewart[33] advises an exploratory procedure so planned as to avoid contact of cut lymphatics with any tissues left behind, and any chance of dissemination of cancer cells by pressure before the removal of the breast.

Bloodgood[27] agrees in advising exploratory incision, and states that this operation is the routine treatment of doubtful tumors at the Johns Hopkins Hospital. Curtis[29] and Morris[39] support this recommendation and Morris calls attention to the ease with which consent may be obtained for an exploratory operation early in the course of the disease, when the possibility of avoidance of a total amputation can be urged.[40]

The operation which I have gradually elaborated, starting with the so-called Thomas incision, consists in the removal of a V-shaped portion of the gland containing the cyst or tumor, and exploratory radiating incisions in the remainder of the gland. In the early operations I undertook to remove all sections of the gland involved in cystic changes, and in several cases this resulted in removal either of the entire gland or of all but fragments here and there of the cortical portion. These fragments were brought together with catgut sutures placed at certain points, or by a single purse-string suture, so that in the breasts of women possessed of a fair amount of adipose tissue the organ could be reconstructed and the nipple (which previously perhaps had been inverted) could be restored to its normal shape. In this way the outward shape and appearance of the breast could be maintained while the entire mammary gland had been removed. Further experience, however, showed me that this radical measure was in the great majority of cases unnecessary. The details of the operation as I now perform it are as follows:

The preliminary incision is longer than that contemplated by Thomas, and, starting at the lower border of the breast, opposite the middle of the outer arc of the lower inner quadrant, it runs along the lower fold and outer margin to the inner border of the axilla, thus severing the lymphatic connections of the breast with the axillary plexus of lymph glands. The incision should be carried down to the lower border of the pectoralis major muscle, which should be freely exposed. The dissection is then carried along through the loose connective tissue which lies between the pectoral fascia and the posterior layer of the fascia in which the mammary gland lies. With the left hand the operator reflects the breast upward and inward so that the posterior surface of the gland becomes exposed in its entire length. The gland tissue can now be seen through the transparent fascia and easily inspected. If cysts are present they are readily observed, as the majority of them lie in the posterior portions of the gland. Usually there are one or two large cysts lying in the same quadrant. This portion can be removed by a V-shaped incision without opening the cysts. The apex of the V lies directly under the nipple in the central portion of the gland. Radiating from this point incisions can be carried into the gland tissue in all directions, exposing and bisecting all small cysts so that no cyst, however small, remains that has not been laid open by the knife. A second V incision may occasionally be necessary, but this is rarely the case. The next step of the operation, after arresting hemorrhage from the larger vessels, is to close the V-shaped opening with two rows of catgut sutures, one along its anterior borders, and one bringing its posterior edges into contact. The gland is now released from the hand of the operator and dropped back on to the pectoral muscle, and it will be found that the various incised portions of the gland resume their natural positions and fit accurately together. A few sutures may be needed to arrest hemorrhage from small arteries in the gland substance, but this is not usually necessary. The gland should next be anchored to the subjacent pectoral muscle at its outer edge, and still another row of sutures is advisable to hold together the deep layers of the superficial fascia before closing the outer edges of the wound with silkworm gut. The buried sutures are useful in removing strain from the surface suture.

The dressing should be applied so as to produce lateral compression of the two hemispheres, as the ordinary swathe tends to tear the buried gland sutures apart. I have devised for this purpose a bandage which crosses in front and is pinned like a diaper; the ends of each half are then caught into two loops which are attached to suspenders crossing over the shoulders (empire bandage). This bandage can be elaborated into a breast supporter, which is made for me by Messrs. Leach & Greene of Boston. If the breast operated on contains a benign tumor, the tumor can be removed by the V-shaped incision, the double suturing of the gland incision being carried out as before. I have found it better to make a clean V cut even in the cases of the periductal fibromata, as I have always found the capsule of these tumors more closely adherent to the gland tissue than is usually represented to be the case.

In case of exploratory operations for cancer the incision can be carried a little farther from the gland border if necessary and sufficiently deep to sever all lymphatic connections with the axillary lymphatics or those which run through the pectoral muscle. The incision into the posterior surface of the gland, if cancer be found, should be closed by a single suture before proceeding with the major operation.

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[37] Bull: Medical Record, New York, 1899, No. 16, p. 557.

[38] Snow: British Medical Journal, Oct. 17, 1903.

[39] Morris: The Journal A. M. A., Aug. 6, 1904, p. 368.

[40] Other references which may be consulted on the general subject are as follows: Clopton: Inter-State Medical Journal, June, 1904. Dreyfus: Virchow's Archiv. vol. cxiii, p. 535. Ellis: Annals of Surgery, September, 1903. Renton: British Medical Journal, April, 1903. Warren: Annals of Surgery, December, 1904.

I have called this operation plastic resection of the mammary gland, as the incision and subsequent sutures are devised with special reference to restoring the gland as nearly as possible to its normal shape and to improve often the outward appearance of the nipple. In case of inversion of the nipple as is often seen in abnormal involution, the gland tissue should be so laid open from behind that a subcutaneous purse-string suture can be placed around the base of the nipple and force it outward.

I have performed plastic resection of the gland in 66 cases, in 8 of which both breasts were operated on, so that I have performed the operation in all 74 times. The great majority of these operations were for abnormal involution, but in no case have I had any recurrence of cyst formation. It is remarkable how completely all trace of the incisions into the gland tissue disappears. It is usually difficult to tell from the feel, only a few months after the operation, what portion of the gland has been resected. As the outward cicatrix is practically invisible to the patient, the result from a cosmetic point of view is also most satisfactory. In three cases only have I found suppuration of the gland to take place, and this was attributed to infection from the cavity of the cyst. One was a case of large multiple cysts; another was a large cyst near the nipple; and the third was a case of papillary cystadenoma near the nipple in an old woman. I have tested many exposed cysts for bacteria, but have invariably obtained negative results. I should, however, advise the operator to avoid opening the larger cysts if possible, and to use catgut for deep ligatures and sutures, as they are quickly absorbed and leave no trace of their presence in the sensitive structure of the gland. I have had stitch abscess in the skin sutures in two cases only, neither of which was in private practice.

As will be seen from my experience in 74 cases, the operation is attended with little risk or discomfort to the patient, who may be assured that it can be performed without a prolonged convalescence and without disfigurement of any kind. I venture, therefore, to offer it to the profession as a satisfactory substitute for the disfiguring exploratory incision on the anterior surface of the breast, for the uncertainties of puncture, and for the mutilation caused by amputation.

THE DELAY OF OLD AGE AND THE ALLEVIATION OF SENILITY.

ORATION ON MEDICINE AT THE FIFTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION AT PORTLAND, OREGON, JULY 11-14, 1905.

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In 1805, Lewis and Clark, typical and celebrated among American explorers, turned their faces toward the furthest west and disclosed in a single expedition the possibilities of the continent and the mysteries of the great undiscovered. Their feat was in principle but a repetition of the undertakings of Columbus, De Soto and La Salle, of Daniel Boone and the numberless pioneers who so quickly, almost suddenly, transformed America from a desolate wilderness into the puissant commonwealth of to-day. In each we may discern a discontent with the established order and environment of his heritage; an inspiration to find in newness a satisfaction which the settled regions, settled habits of thought, settled manners of life failed to provide him at home. The word "settled" is significant. Our race is without rest until it settles things; and with this there stalks a poignant impatience with the things that are settled. The new, the undiscovered, the unattained, the unprecedented, this it is which charms American manhood. The Muezzin calling his prayers from a minaret in far away Cairo, the yellow haze in the circumambient air, the camels with jingling bells, the palms turned always eastward by the hot breeze from the monotonous sands,—these possess for the western man no attraction greater than that of poetic interest. In these scenes he could never make his life. The European finds in America every where that which impresses him with our youth; in the Orient, he sees the indisputable evidence of age and a settled order of things. This exploitation of new lands, the cry of "Westward Ho!" which for the past few centuries has stirred mankind, is rapidly, inevitably dying out; but during the long period of its continuance it has wrought important changes in our point of view, it has stimulated a luxuriant growth of thought, it has modified considerably our nature. As our common interest has been fixed upon the untried, we have gradually come to exaggerate the importance of new truths and to ignore the meritorious which the slow moving caravan of thought has brought us from the ages.

Now, it may seem a *non sequitur*, but reflection leads one to inquire if the great appreciation which we feel for the vigorous youth-spirit of recent times, has not educated us to prize, perhaps to over-value, youth, to the disparagement, if not to the absolute neglect, of old age.

In saying this we are not unmindful of the element of truth in the rightly interpreted utterance on this subject of one of our most distinguished colleagues. From the standpoint of the original investigator, as from that of the soldier, or the adventurer, there is nothing to replace the effort of the man under forty; but if for no other reason than to obstruct impetuosity and to provide such a handicap that youth shall not too soon outrun the limitations which a wise Providence has provided, middle and late old age have their uses. At any rate the old man is with us and there appears to be no acceptable method of obliterating him, even if it would add to the welfare of the race to do so.

Finding ourselves in this obvious position, it would seem the wise course so to manage that the disheartening effects of years may be as long as possible postponed; and to seek those methods by whose application we may do our utmost to minimize the terrors of senility. If youth is so delectable, let us find how it may be protracted; if old age is so beset with ineptitude, let us not rest until we learn how it may be mitigated. Such a proposal is not quite identical with a scheme for the prolongation of life—mere increase in years, although it would doubtless include this, however desirable or regrettable it might be. It has to do directly with something about whose desirability there can be no doubt. In other words, I ask your attention to the question of the practicability of *keeping* the various functions of the organism, of preserving the physical and intellectual powers, of delaying the onset of degeneration as much as may be, of developing a race less prone to early decay.

Then, besides this, I wish you to consider the feasibility of so managing the senile when once their degeneration has arrived, that many of their miseries may be avoided and the remainder lessened in degree. Having granted that age is inevitable the average man would seem to have become indifferent to his penalty for living, and, if complainingly, he none the less heedlessly allows his forces to ebb away prematurely. With some the whole of existence seems to be spent in infancy, adolesence and senility. There is no period in which one can say, "there is full, healthy maturity." When examined this early senility is found to result from pathologic processes and there the observation ends as though it were conclusive. But the event is not thus to be disposed of, for, according to our best standards, senile changes are always pathologic, and, therefore, the question of prematurity rests on some pathologic reason for cause, or else upon inherent weakness in human vitality. We are in the habit of speaking and thinking of senility as something separate and apart from disease; as a result, not sufficient attention has been given to the question of prevention of age.

On this subject one can not escape the bold work and bolder thought of Metchnikoff, and I quote at once his description of the degenerations of age. "In senile atrophy the same condition is always present: the atrophy of the higher and specific cells of the tissue and their replacement by hypertrophied connective tissue." It is this same process on which every teacher of medicine constantly harps in discussing disease, the disappearance of the parenchyma and the increase of the stroma.

One need not dwell on the theory of Metchnikoff as to the rôle of the phagocytes in the process; for the moment it is enough to know and to recognize that senile atrophy is pathologic and that, essentially, old age is disease. It is unnecessary to discuss the plausible but startling suggestion—that of finding some antiserum which might antagonize the development of the age producing agencies. Already we possess some knowledge of how to defer age, but this information is not generally insisted on as a guide in living. We frequently allude to measures of prevention, but we do not reduce them to a system which can be taught to the student and to society. If we are further to lengthen the probational study period in medicine, it will be wise to give the matter of deferred old age very careful consideration. If the subject were studied seriously, we would foresee a tremendous improvement in the type of humanity, and the readjustment of many habits, customs, social questions along altogether new lines.

Obviously, real progress cannot be made without accumulating data from which to deduce positive conclusions. At present we lack information on such simple matter as the effect on the organism of diet, exercise, recreation and rest. There are many opinions, but they are largely theroretical. To begin with, we must know something about the material with which we have to deal; that is, the inheritance, the reserve powers, the internal resistance of the individual. In fact, we know very little concerning the inheritance of any one. All are more or less obscure in the matter of family history. There are courts of records in which are found descriptions of estates, but there are no archives in which are deposited accurate descriptions of the various members of the family itself. We are more particular in relation to our domestic animals, especially in the introduction of a new strain. Inquiries are made as to the matter of endurance, longevity, powers of nutrition, good or bad qualities of mind or body, but concerning ourselves, there is an indifference to these important qualities of organic perfection. It would not seem to be altogether impossible to acquire some official record of the physical and intellectual qualities, in other words, strains in men. It is not improbable that if such records were known to exist, they would be not only consulted, but would gradually grow to have an influence on the formation of families. Love is said to know no barriers, but history fails to confirm this view. If a matter of class, of caste, or rank, has been sufficiently important to control the forming of marriage contracts, it is not impossible to conceive of a more intelligent public sentiment which would make an alliance with a family celebrated for physical, intellectual and moral superiority, a thing greatly to be desired; and conversely, which would lead to the abhorrence of an alliance with a family in which freaks, degenerates and incompetents, or in which a tendency towards lowered nutrition, too early maturity, or premature senility were frequent events.

Naturally this is not an affair of a generation, but it is unquestionably a doctrine which ought to be taught. The notion that acquired characteristics can have any transmitted influence on the character of the offspring, as formerly taught by the Lamarckians, is still doing great harm. Our young people should be instructed in the fact that the well-being of their posterity depends almost altogether on the native stamina of the germ-plasm with which they are endowed. They should be taught to understand the responsibility implied in maternity and paternity, and should be made to recognize that the greatest influence which they can have on the well-being of their children is in the selection of the spouse. The sentiment should be encouraged that parentage is a matter which concerns the public, and especially posterity, more than it does the parent; that the germ-plasm of the race is of all questions the most important which concerns it. Measures could be adopted which would make it more possible than at present for individuals to inform themselves concerning the family characteristics of the contemplated fiancée. A bureau for the precise registration of disease and causes of death, together with the chief facts in family and personal history, might be established through legal enactments, reinforced and made active by a high social sentiment. Such a bureau would afford the needed information, and the special study of the material thus provided would result in the formation of guiding principles in human biology and race development.

Such a system might seem to be contrary to our laws of personal rights, and, of course, the sanctity of reserve may not be easily disrupted. Nevertheless, with Emerson, "We shall one day see that the most private is the most public energy; that quality atones for quantity," and although we cannot attain at a bound to these heights of wisdom, we may, at least, begin to map out a way. He is short sighted who supposes that the complacency shown in the devolution of the race must continue, unchanged, eternally. We have only admiring applause for the remarkable accomplishment of Burbank in the vegetable world, and yet such are our deeprooted prejudices that we shrink from the application of similar principles to human uplifting even when we know it is possible. Shaler remarks that man "sorely needs a herdsman's care." The subject is painful, yet I think it will be acknowledged that susceptibility toward tuberculosis, insanity, alcoholism, epilepsy, *et cetera*, is hereditary. Granting this, it follows that a stock could be developed which practically would be immune to those diseases. Doubtless all will regard the realization of this suggestion to be remote and some may liken it to that of Maeterlinck who says: "Man may sometime master the secret of gravitation and by means of it steer his planet wherever in the universe he wills." The principle is open to such wide application that it may easily be obscured in absurdity. Nevertheless, here is an honest straight-forward truth not so far beyond our reach. It lies in a public demand that none but healthy parents shall be allowed to bear children. The brevity of middle age resides, first, in the inherited quality of the organized tissue; second, in the effects of its environal conditions on each organism. We physicians are making it our function to exterminate disease. Why should we be content with merely pointing out that certain disease tendencies are hereditary without taking some practical steps to prevent such disease transmission? As an illustration, it doubtless would be a hardship to the syphilitic to make procreation for him a penal offense. Nevertheless, such a course would be full of beneficence to the race. The amount of nervous and other disease in the innocent resulting from syphilis in progenitors is incalculable. The incompetence and misery which often overtake the unfortunate victim in middle life as the result of syphilis, one or two generations removed, must be considered. Those who have studied the subject carefully, regard this disease as responsible for one-fifth of all cases of arteriosclerosis, and of yet a higher proportion in those cases occurring in middle life. A man has not the moral right to beget disease. Notwithstanding that it usually comes through ignorance, it should not be allowed. The profession of medicine should make its convictions bear fruit, and should teach and should be expected to teach that the marriage of a large number of people whose nuptials they now help to celebrate, should either be prohibited or else made barren. To those who would regard the realization of these thoughts as unattainable, it may be remarked that the world is yet very young, and as a result, as Carlisle has said, in most things very stupid. At any rate it will be admitted that middle age could be considerably prolonged and the infirmities of old age largely mitigated if we could eliminate from the equation that faulty cell metabolism which arrives through inheritance.

The trend of modern thought is toward the development of the individual. Our researches in therapeutics, dietetics, immunity, gymnastics all alike are directed toward the betterment of the individual by making life possible to many who would otherwise perish, comfortable to many who would otherwise survive in misery—results in prolonging life. Our educational efforts concern themselves more and more with fitting for life the otherwise unfit, in so dealing with the neurotic, the semi-imbecile, the vicious and criminal that they may be practicable units in the body politic. The result is that individuals otherwise impossible are so modified that they are finding some happiness in life and become less disturbing elements in society as a whole. There can be no doubt as to the benefit to the individual, and no doubt as to the good which comes from the reflex effect on society. Perhaps nothing counts more for the moral up-lifting of the masses than the awakening of personal interest in all altruistic undertakings, but let me repeat, we must dismiss as untenable the views of the Neo-Lamarckians that acquired characteristics of the individual have any appreciable effect on the offspring. It is acknowledged that the natural tendency of defectives of all kinds is toward extermination. Left to themselves, many of these weak strains would disappear. In making it possible for these strains to continue to blend and to dilute the organic type of the race, we are unquestionably lowering the future standard of internal resistance and we are creating a threat to physical, intellectual and moral perfection.

On this subject Professor Woods Hutchinson of Portland has said some interesting things.

Is it unchristian or unethical to consider this question from the phylogenic standpoint, or, on the contrary, is it not from the highest ethical plane that we look forward to a means that may elevate man spiritually, strengthen him intellectually, increase his vital and physical vigor, thus widening the period of his usefulness and decreasing his sufferings as a whole? We find ourselves sustained in our efforts when they are directed toward helping the individual, but there seems to be a social veto placed on the study of generic betterment. Weismann and his followers have shown us that the character of the individual depends on the germ-plasm with which he starts life, and although education and favorable environments may modify greatly the individual, they have no effect whatever in improving the character of his posterity. The possibilities of an individual, his resistance to disease, his longevity, his strength and his intelligence are determined beforehand by his inheritance. It is known that it is possible to bring deterioration by introducing an inferior strain. No educational advancement can counteract the injurious effects of this preservation and inbreeding of the bad stock. Unless intelligent foresight be used to prevent this definite and ascertained source of degeneracy, we are likely to find a growing depreciation of our racial stock and, in spite of our modern preventive medicine, a progressive increase of mental and physical disease, and an abbreviation of the working years. By homely methods we have learned that aside from the question of perfect nutrition and proper exercise of function, there is nothing which contributes so unquestionably toward the improvement of organic life as intelligent study of what is known as breeding, in other words by the intelligent blending of the germ-plasm of healthy, resisting, long-lived stock so that there may result not inferior progeny, but offspring superior to the parental stock. I am aware that the question is not new, and that its mere mention exposes one to criticism, not only from the timid and ignorant, but even from the wise and philanthropic: and yet, no one can deny that in shutting our eyes to this truth which Nature spreads plainly before us and which she makes the subject of countless lessons illustrated by individual inferiority, perversity, disease and death, we are not doing all that we ought for the coming race, not all that we might toward assisting that evolution which we hope for, but which lingers so in the process. It will be said that no one can contemplate such a scheme as is here suggested without feeling strongly convinced of its impracticability. Of course, it must be admitted that the large fulfillment of such ideals is at present quite impracticable, but it is not impracticable to study the subject with the hope of finding certain aspects which may admit of modification.

By a study of the subject we would at least offer a reasonable antidote to the possible injurious effects of the modern rage for individualism. More than this, it may be possible, by more or less united action, so to modify established customs, social tendencies and common law that we may elevate the sense of family, and possibly municipal and national morality to a standard high enough to result in our placing the welfare of the community above the desires and the instinct of the individual. As we have somewhat meddlesomely diverted the natural tendency of deterioration and degeneration from its end, thus interfering with the action of the law of the survival of the fittest, it does not seem improper that individualism should recompense society by yielding some of its prerogatives for the welfare of the race; or, to put it more pointedly, it would seem only fair, since we have preserved the life of the weakling, that we should deny him the privilege of paternity, or since we have educated the defective or criminal youth into semi-useful citizenship that we should forbid him the right of increasing the number of his kind. In one of our states a legislative enactment looking toward this end was recently vetoed by the governor who accompanied his decision by a conventional lecture to the profession of medicine on its willingness to disregard the rights of individuals. This illustrates one of the difficulties in the way, and would seem to indicate still another field in which physicians must assume their rôle of public educators. The sentiment of the people is instinctively against public interference with personal privilege. This feeling seems to be particularly strong in the Anglo-Saxon people, and to be contrary to the nature of our institutions; yet, like every other privilege, it is susceptible of doing great evil if carried to its full logical extreme.

Are we not as an organic type suffering from an extreme application of individual rights? Are we not inflicting an injury on the race through permitting unwholesome privileges to the individual? Is it necessarily dangerous to attempt to create a public sentiment, a social feeling toward the making of new customs and the enactment of new laws which may result in the elimination of at least some of the more abhorrent and destructive elements that at present are blending with and antagonizing the evolution of the race? Would it not be desirable to have an aristocracy of health? That is to say, to see developed a zeal for physical and intellectual perfection, and to have that zeal supported by public sentiment, so that there might be created something like a caste, the attributes of which should be mental and physical wholesomeness, and from which should be excluded those families which are shown by carefully studied data to come of degenerate or unfit stock? This would result in a contest between the general and the particular. At present the particular, the individual, prevails; in the presence of rightly adapted social feeling the general would prevail. Evolution would thereby be speeded and not retarded as at present. The principle involved does not seem to be any more unethical than the application of the quarantine laws which now operate injuriously to the individual, but make greatly for the public good.

Let us now consider what may be accomplished in the way of postponing age by the reasonable treatment of even the poor material that comes to us. Undoubtedly the question is as broad as the whole subject of personal hygiene and general therapeutics, and so, for the most part, must be passed; there are, however, some aspects of the subject which deserve special consideration. One of these is the improvement in the nutrition of the aged as the result of good teeth. While all recognize the comfort and convenience which we owe to the dentists, it is doubtful if we fully appreciate how much they have contributed to good health and longevity. For another great advance we have to thank the oculists. Who can estimate the additional resources both of usefulness and happiness secured through the discovery of spectacles and the operation for cataract? Useful eyesight contributes much toward health and long life for the reason that it permits of a continued interest in living which otherwise would be lost. It permits of a struggle for an ideal and in this real happiness consists. The ideal, of course, is never reached, but, as Montaigne says, the reward is not found in the victory, but in the conflict. Perhaps no one factor is so important in maintaining courage and health in old people as the creation and continuance of some keen interest in life, and this interest, even in the otherwise enfeebled, may be kept up by means of useful eyes. Now comes the time-worn but neglected subject of arterial disease.

Too often our attention is for the first time attracted to arteriosclerosis by the appearance of fibroid or fatty degeneration, exhibiting itself in the figure, form and viscera of the individual. Even after these later changes appear measures may be adopted to stay the march of the process, but how much better it would be to anticipate it. For instance, by noting the high and rising blood pressure and the physical signs of cardiac strain, by estimating the decline in urinary solids and the rise in the urotoxic unit, by measuring the decline in respiratory capacity, or by detecting the falling off in cutaneous secretion and the loss of the pliability and softness of the skin, we may make ourselves aware that vascular degeneration is progressing. Heedless of these earlier manifestations we shall soon awake to the advent of the state which Sir James Paget has so marvelously described.

In the earlier steps of arteriosclerosis, if intelligent study be given to the individual, to his habits of life, to his excesses and to his deficiencies, very much can be done, and, by thoughtful men, is done, to delay arterial changes and to restore functional activity.

May I trespass so far as to emphasize the importance of judging and correcting the disturbed balance between assimilation and waste—the anabolic and katabolic processes? The facts are so well understood that one hesitates to mention them, and yet just here there is so much neglect of precious opportunity. There are successful methods of lessening the extent of auto-intoxication and of widening the field for the play of nutritional processes. This is so commonplace that we neglect it. Middle age often brings luxury and at the same period the contracting arteries narrow the field of physiologic activities. The circumstances of life and the taste of the man are for indulgence in appetite or for excess in undertakings, while the limitations of the organism are increased. The tendencies are thus in opposite directions and, with Munsterberg we ask, "How can they keep together who are going different ways?" Ultimately, they must separate, of course, but temporarily they may keep company if we help to preserve harmony between them. There is abundant proof that even advanced arteriosclerosis may be so far modified as to delay the oncoming degeneration and to admit of happy usefulness, but the victim must be content with moderation and not hope, like Mahomet, to cleave the moon in twain.

Advanced arteriosclerosis is too generally neglected, and intoxications of one kind or another are for the most part responsible for it. Our prophylactic and curative measures are readily understood. It is well known that the relatively great fatality of pneumonia and other acute diseases is explained by the greater toxemia which exists late in life. Besides this, the auto-intoxication increases the blood pressure and induces prematurely the fatal events of cerebral, cardiac and renal diseases. Almost as deplorable as these are the conditions of unnatural excitement, confusion and depression from which many people unnecessarily suffer in early old age. Still further there may be found in vascular disease the source of much severe pain from which old people suffer. This pain is often referable to the aorta, at times to those forms of aortitis which Clifford Allbutt has described, and also to aortitis and peri-aortitis of the abdomen recently so well set forth by Teissier of Lyons. The latter has also shown that the pain can be ameliorated, the progress of the disease stayed and even great improvement induced by rational treatment. Aortitis and peri-aortitis often greatly interfere with the flow of blood into the branches of the abdominal aorta, and as a result the organs supplied by these branches suffer special degeneration. In middle age and later life, intractable diseases of the stomach, intestine, kidneys and other organs could be dealt with much more successfully, and comfortable longevity secured, if more attention were devoted to this pathology.

There remains for brief consideration the question of what can be done to make old age more tolerable; in other words, to remove it to a physiologic basis. We find on close consideration that most of the derangements from which the aged suffer can be classified as belonging distinctly to pathology, but I am afraid there exists a tendency among us to dismiss these matters as necessary corollaries of senility, without giving them that careful consideration which similar processes receive in younger patients. To a few the diseases of old age have a peculiar charm, and these few who give senile diseases special study seem to agree that the complaints of the aged arise for the most part from toxic causes. Even the threadbare question of arteriosclerosis falls to a large extent under this head. There is good reason for believing that this toxic state which underlies the decadence of senility takes its origin for the most part in the colon. Metchnikoff supports the view that mammals have developed a large colon for the purpose of storing the products of digestion, and that man has inherited an enormous colon at the expense of his longevity. This organ harbors an immense number of bacteria leading to fermentations, putrefactions and the production of alkaloids, fatty acids and toxins which man has to combat for the length of his mortal days. While vitality is young and vigorous, the combat is not so unequal, but with failing powers auto-intoxication prevails in the contest between the internal resisting powers of the organism and the toxic adversary made potent by inheritance. Unfortunately the degeneration of age first produces functional insufficiency of the organs of elimination, then their degeneration, and as a result we find the skin, kidneys, lungs, liver incompetent in each individual overtaken by years. It is somewhat remarkable that facts so well understood as these do not receive more attention.

There are few text-books, there is little teaching devoted to the pathology and right management of senile disease, and yet experience teaches that few patients respond more satisfactorily than do the aged if their cases are approached with the principles in mind which are here set forth. It is not merely a question of dilatation of the colon, nor of any special defect of the organ; even in the absence of these, the source of auto-intoxication exists and becomes important because of the failure of the skin and other emunctories which, earlier in life, are relatively sufficient. The indications are obvious. In addition to the usual measures for improving the general circulation, old people are benefited by systematic colonic lavage, stimulating baths with superficial massage, prescribed pulmonary gymnastics and an abundant drinking of pure water. It is the almost universal neglect of these matters which has made it seem to me a subject of sufficient importance to call to your attention in a general address. There is something inspiring about youth which gives an incentive to our care of the diseases of childhood and adolescence, but there is something benignant in studying the problems that lead to the postponement of age and to the alleviation of the trials of senility. Old age is repulsive when it is pathologic, but is beautiful when it is physiologic, and it would appear as a fitting theme for the consideration of this great body at its meeting in this new land of the setting sun.

THE INFLUENCE WHICH THE ACQUISITION OF TROPICAL TERRITORY BY THE UNITED STATES HAS HAD, AND IS LIKELY TO HAVE, ON AMERICAN MEDICINE.

ORATION ON STATE MEDICINE AT THE FIFTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, PORTLAND, OREGON, JULY 11-14, 1905.

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It is a custom in many universities, both in this country and in Europe, to allow each professor leave of absence during every seventh year of service. This custom is doubtless based on the Sabbatical year of the Pentateuchal codes, an institution which demanded that the fields be allowed to lie fallow every seventh year. It is a question whether the Sabbatical year, as an institution, could not with benefit be introduced into matters medical, and whether we might not profit by resting every seventh year, and devoting our time, not to the strenuous throes of medical existence, but to a calm, dispassionate review of the progress of medicine in the preceding septennate, and the factors which have influenced that progress. With this idea in view I have chosen to speak to-day on an aspect of our medical progress which is now in its Sabbatical year.

It is at present almost exactly seven years since, by the terms of treaty following the Spanish War, the United States came into possession of tropical territory in both the eastern and the western hemispheres. It is unnecessary and inappropriate to discuss here the general significance of this territorial acquisition, its bearing on politics, its effect on commerce, its influence on public affairs in general; it is sufficient if we, as the representatives of the medical profession of this country, take stock of the medical questions involved, discuss their significance, and gauge the effect which they exert on American medicine in general. No doubt many of our hyperopic brethren foresaw, seven years ago, some of the effects which our acquisition of Porto Rico and the Philippines was to have on American medicine. There is just as little doubt that some of the results were entirely unlooked for, and have been complete surprises. It might appear at first sight that, from analogy, we should have been able to foretell the influence which increased commerce with our tropical territory, and the return of our soldiers and sailors with tropical diseases, would have on medicine in the United States. Obviously one would look to the experience of European countries, and notably of England, to form a basis for judgment, for these countries have had tropical possessions for generations. It must not be forgotten that the physical conditions here are different from those in Europe, for while Europe is almost entirely within the temperate zone, portions of this country are semi-tropic, and a few very small areas are actually within the tropical belt. The United States, therefore, presents a much more favorable soil for the transplantation of tropical diseases than does Europe. Realizing this, numerous American writers on tropical diseases have sounded, in the last seven years, notes of warning and alarm. Their apprehensions are based more on theoretical grounds than on observed facts, but for all that are worthy of our most serious consideration. The object of this inquiry is to determine, if possible, how great this danger is. What are the prevailing diseases of our tropical possessions? Which of them, if any, has appeared among us; which, if any, has gained a foothold on our soil; and which may possibly become widely distributed? Aside from endeavoring to answer these questions, we may with profit glance at the effect which the study of tropical diseases has had on the comprehension of cognate diseases in the United States, and also observe that it has led to the recognition in this country of unsuspected diseases of wide distribution, and great economic importance.

UNCINARIASIS.

Perhaps one of the most startling results of the increased interest in tropical diseases has been the discovery that large sections of the southern portion of this country are infected with the hookworm, and that large numbers of the inhabitants are suffering from uncinariasis (ankylostomiasis) or hookworm disease. The starting point of this remarkable discovery was, almost certainly, the work of Ashford in Porto Rico in 1900. This observer noted the great frequency of the disease in that island, and pointed out that, to a large extent, the disability and wretched condition of many of the natives was due to it. The credit for drawing attention to the probability that the disease was widespread in our southern states is due to Charles Wardell Stiles, the zoologist of the Bureau of Animal Industry, and to him also is due the credit of amply proving what he at first brought forward merely as a probability. It would be out of place here to go into detail as to the clinical history of this disease, or the minute structure of the parasite which causes it. Mention must be made, however, of Stiles' discovery that the American uncinaria differs from that of Europe. It will be of interest to consider the geographical distribution of uncinariasis in this country, the main facts connected with the method of its spread, and the evidence as to the likelihood that it will become more widely prevalent than it is at present.

Up to the year 1900 not more than ten authentic cases of uncinariasis were on record in American literature, though there are statements by southern physicians in the writings of the early part of the nineteenth century which leave little doubt that the disease was then prevalent. During 1900 and 1901 only nineteen cases of the disease were reported, but in 1902, following the publication of Stiles' monograph on "The Significance of the Recent American Cases of Hookworm Disease in Man," the number of reported cases rose at a bound to 524. In 1903, 273 cases were reported; in 1904, 334; the number this year will probably not be so large, as the disease is no longer a rarity to southern physicians, and they will not be so apt to record cases. Prior to 1900, then, possibly ten authentic cases of hookworm disease had been reported; since this date I have been able to collect from the available American literature 1,212 cases, of which 1,095 originated in the United States, and 117 were imported from other countries, mainly from Porto Rico and the Philippines. Of the latter 62 are reported by Gunn, and occurred in San Francisco, mainly among Porto Ricans.

If we separate the domestic from the imported cases we find that this disease is distributed mainly through the southern states along the seaboard from Virginia to Texas. But it is not confined to seaboard states, for Missouri and Tennessee are also infected. The states in which the disease is known to be indigenous, and probably widely distributed, are Virginia, North and South Carolina, Georgia, Alabama, Florida, Louisiana, Texas, Mississippi, Missouri and Tennessee. This list of states includes only those in which definite evidence of the presence of the disease has been furnished; it does not include, I think, all of the infected states. Taking into account the similarities of soil and climate, anyone who will take the trouble to make a map of the known infected area will feel convinced that Arkansas, Indian Territory, Oklahoma, West Virginia, Kentucky, and the southern portions of Illinois, Indiana, and Ohio are also probably infected. The physicians in some states have shown a lamentable lack of enterprise in investigating this disease, while in other states extensive and valuable studies have been made of it. As I have already stated 1,095 cases of domestic uncinariasis have been reported since 1900; 824 of these have been observed in three states, Georgia, Alabama, and North Carolina. This has been due to the interest and energy of single physicians, in Georgia of Claude A. Smith, Warfield, and Harris; in Alabama of E. D. Bondurant, and in North Carolina of Nicholson and Rankin. A knowledge of the distribution of the disease is not merely of academic importance, for the economic aspects of uncinariasis are paramount. There is little doubt that the stigma of laziness and general inefficiency which has attached for generations to the so-called "poor whites" of the South has been earned by them not as a result of qualities due to innate "cussedness," but because a large percentage are suffering from uncinariasis with the resultant physical and mental deterioration. This being the case, a plotting out of the infected areas is one of the first steps which must be taken preparatory to stamping out the disease. This is only one step, however, the others depending on our present conception of its method of spread. At present there are two main theories as to the means by which the parasite gains entrance to the body, the one presupposing that it enters through the alimentary canal, the other that it gains entrance through the skin. The advocates of the former theory hold that polluted drinking water, and food soiled by dirty hands are the means of introduction, the advocates of the latter, that the so-called "ground itch" is the point of entrance of the *Uncinaria rhabdites*. There is a good deal of evidence in support of both views, though the work of Claude A. Smith and of Nicholson and Rankin favors the idea that the cutaneous form of infection is the more important. In view of this the wearing of shoes, especially during the rainy season, becomes the most important prophylactic measure, though the necessity for pure water supplies and the proper disposal of excreta still remains of great importance. In all such matters the enforcement of hygienic laws can never be obtained without education of those who are at fault. As uncinariasis is essentially a country disease (I have not been able to find on record a single American case which originated in a city), the question is one which must be dealt with by the country physician, on whose back falls a heavy load of responsibility. The stamping out of this disease is, of course, of great economic importance to the South, but, further than this, the question arises whether it may not be of importance to other parts of the country. Is there any chance that uncinariasis may become more widely distributed than it is at present? The question is a hard one to answer. While there has not been a lack of physicians who have predicted such a spread, it cannot be said that there is much actual evidence that it has occurred. There are a few instances in American literature in which the evidence plainly points to infection of natives from imported cases. Such, for example, are some of the cases reported by Möhlau in Buffalo, where Polish and Italian laborers contaminated a brickyard. That such sporadic outbreaks can and will occur can not be denied, and physicians all over the country should be on the lookout for them. Whether the disease will ever become widespread outside of its present habitat is quite another story. It must not be overlooked that a variety of circumstances are necessary to its spread; the right kind of soil, sufficient heat, and enough moisture for the parasite, and a lack of certain hygienic precautions on the part of the inhabitants of the area to be infected. The absence of any one of these conditions may be fatal to the dissemination of the disease. Considering the fact that uncinariasis has existed in the South for at least 100 years, and probably longer, it does not seem very probable that it will ever extend much beyond its present limits. What is needed at present then, is a more accurate knowledge of its distribution, and the inauguration of an educational and sanitary campaign to effect its extermination.

DYSENTERY.

One of the first diseases which the American army surgeons in the tropics had to confront was that scourge of camps, dysentery. The study of the acute form of the disease had received a great impetus from the work of Shiga in Japan, and the investigation of this condition in the American troops in the Philippines, instigated by Flexner, has since been carried on by Strong and Musgrave, J. J. Curry, and Charles H. Craig. It can fairly be said, I think, that our conception of the etiology of dysentery, and particularly of the tropical form, has been completely revised in the last few years, and this revision has depended, in no small measure, on the work of American investigators. So far as tropical dysentery is concerned, the studies of recent years have taught us to recognize two distinct forms, the bacillary and the amebic. The bacillary form, of which the acute dysentery of the tropics represents the most common type, is due to an organism first described by Flexner, and closely allied to the bacillus described by Shiga in the epidemic dysentery of Japan. In the chronic forms the ameba seems to have held its ground as the main causal agent, though the earlier investigators in the Philippines seemed inclined to think that it was usually a secondary invader. Our knowledge of the life cycle of the ameba, of the differentiation of pathogenic from non-pathogenic forms, and of the cultivation of the organism, has been achieved in the past few years, and is associated with the names of Craig, Strong and Musgrave, and Caspar Miller. A more exact knowledge of the complications of dysentery has also resulted from the work of our army surgeons, and it is to be especially noted in this connection that the so-called "tropical" abscess of the liver is nearly always due to the amebic as opposed to the bacillary form.

The most surprising and unlooked-for result of the stimulus given to the study of dysentery has been the discovery that the same group of organisms which is responsible for tropical bacillary dysentery is also concerned in dysentery in this country, and in certain forms of the summer diarrheas of infancy. The first steps in determining these relationships were taken under Flexner's guidance during 1902. In that year Vedder and Duval published the result of their work on the dysentery of the United States, work which was based on both sporadic and epidemic cases, and which showed that certain types of dysentery all over the world were due to the Shiga group of bacteria. In the same year Duval and Bassett published their preliminary announcement of the isolation of bacteria of the same group from cases of infantile summer diarrhea. Subequent studies, conducted mainly at the large centers in the East, have, in the main, confirmed these observations, and have led to more accurate knowledge of both the clinical and bacteriologic aspects of these two classes of disease. Since 1903 investigation has been mainly focussed on the summer diarrheas of infancy, the scourge of the tenement districts of the large cities. These studies have resulted in the classification of the *Bacillus dysenteriæ* into three main types, a differentiation which was suggested in part by Gay and Duval in 1903, and which has since been rendered more exact by the work of Hiss and Russell, and that of W. H. Park and his associates. On the clinical side it has been shown that all classes of summer diarrhea are not due to organisms of the dysentery group, but that certain types associated with mucus and blood in the stools are nearly always associated with them. It has also been shown that these organisms, like the pus cocci, may give rise to primary infections, or may play the rôle of secondary or terminal invaders. Mild cases without blood in the stools may also be due to this group of organisms, accurate and early diagnosis only being possible in any type of case by means of a bacteriologic examination of the feces. The serum reaction, while of some value, appears late in many cases, and is not available for early recognition of the disease.

In his report on Philippine dysentery Flexner suggested the possibility of serum therapy in these cases, and the discovery of the relation of the *Bacillus dysenteriæ* to infantile summer diarrhea led to attempts at the production of a curative serum. During 1904 such a serum was used in a number of outbreaks of dysentery and summer diarrhea. The results, as a whole, have been disappointing, but will probably improve as we gain in experience. As Booker pointed out in 1903, little is to be expected from the serum in cases in which marked anatomic lesions are present. The work done under the Rockefeller Institute and summarized by Holt shows that the serum to be of value must be used early and in repeated doses. Judging from the results of Shiga in Japan more is to be expected for the serum treatment, and, as a matter of fact, it has not yet received a fair trial in this country. At present we need more knowledge regarding the natural history of the dysentery germ, its method of introduction, and the distribution of this form of infection in the United States. As regards the means by which the germ is introduced into the body there is already some evidence, both from the Philippines and this country, that contaminated water is at fault, but the whole matter needs more thorough investigation. The distribution of this form of infection has hardly been studied outside of the large cities of the East, and although the severe forms of infantile diarrhea are almost unknown on the Pacific Coast, there is little doubt that they exist in the South and middle West.

YELLOW FEVER.

At the time that the Island of Cuba was occupied by American troops in 1898, yellow fever had been endemic there for 130 years. The disease was not widespread, but was mainly confined to the coast towns, and was particularly prevalent in Havana, the continuous stream of non-immune Spanish immigrants serving to keep up the infection. A great deal of study had been devoted to the disease at this time, and in the years immediately preceding the Spanish war renewed interest had been awakened by the work of Sanarelli, who claimed to have found the causal agent in his *Bacillus icteroides*. His claims had met a good deal of opposition, especially from Sternberg in this country, and many yellow fever experts did not accept his results. In view of the prevalence of the disease, and the constant menace which it offered to our southern states, a commission composed of Walter Reed, James Carroll, Jesse W. Lazear, and Aristides Agramonte was detailed to Cuba to study it still further. The commission presumably started out with a disbelief in Sanarelli's work, for certain of the members had published investigations showing that the *Bacillus icteroides* was closely allied to, if not identical with, the hog cholera bacillus. While Sanarelli's work was repeated as a necessary precaution, and was proved to be erroneous, the commission concentrated its efforts on the investigation of the relation of the mosquito to yellow fever, a relationship which had been insisted on by Carlos Finlay of Havana for nearly twenty years, and which the work of Carter on the time limit between primary and secondary cases rendered probable.

It is not necessary to go into details as to the methods used by the commission in their work, further than to state that they were scientifically above reproach. It will be of interest, however, to consider their results, and the influence which they have had on the practical aspects of yellow fever quarantine. Briefly stated these results were as follows: The proof that Finlay's conception that yellow fever is conveyed by a certain variety of mosquito (*Stegomyia fasciata* of Theobald) is correct. The demonstration that a certain time must elapse after the mosquito is infected before it can transmit the disease; that the causal agent is in the blood during the first few days of the disease, that it can be destroyed by heat, and that it can pass through filters which hold back some of the smaller forms of bacteria. The explosion of the old idea that the disease can be conveyed by fomites, unless these are of a character to allow of transmission in them of infected living mosquitoes. These are the main results, and they have led to greater accuracy in our knowledge of the incubation period of yellow fever, increased study of the yellow fever mosquito, and an entirely new conception of the prevention of the disease. Since the original work of Reed, Carroll, Lazear, and Agramonte several independent observers have confirmed their findings, notably Guiteras in Cuba, Marchoux, Salembini, and Simonds in South America, and the working parties of the U. S. Public Health and Marine-Hospital Service in Vera Cruz, Mexico. The investigations carried on under the Public Health and Marine-Hospital Service have also supplied many details extending our knowledge of mosquito transmission, of the life history of the yellow fever mosquito, and of quarantine methods against the disease. Few discoveries in medicine have led to more rapid and more brilliant practical results than those above cited. The story of the remarkable change in the yellow fever history of Havana achieved by the work of Gorgas reads almost like a romance. When we consider that the annual number of deaths from yellow fever in Havana for the ten years preceding the establishment of the mosquito theory averaged about 500, and that under Dr. Gorgas' administration they were cut down in two years to nothing, we can enthusiastically echo the sentiments expressed in a resolution of the conference of State and Provincial Boards of Health, in which they say: "We regard (it) as one of the most brilliant achievements of the application of sanitary science to public health work ever accomplished." Judging from recent reports it seems likely that Gorgas will repeat his Havana success in the Isthmian Canal zone. We have still to discover the cause of yellow fever, and we have still to ward off its advances in our southern states. So long as our Central and South American neighbors pursue their present lax sanitary methods we are liable to have sporadic outbreaks of the disease in those regions in which the *Stegomyia fasciata* can multiply. As Carter and Howard have shown, this mosquito is widely distributed in the subtropic portions of our country, and it behooves us to continue with the work of mosquito extermination, to increase its range as rapidly as possible, and to keep up with its oldtime strictness the quarantine of vessels, especially sailing vessels, from infected ports. The protection of our land boundaries to the south will, of necessity, be much more difficult, and judging from the recent experience in Texas, it is by this route that infection is now most likely to reach us.

MALARIA.

The soldiers returned from Cuba and Porto Rico, and later those from the Philippines, offered an opportunity for the study on a wholesale scale of certain aspects of malaria, an opportunity which was grasped by both military and civilian physicians. During and immediately following the Spanish War the accomplishment of greatest importance resulting from this study was the overthrow of the refuge of the careless diagnostician, typho-malarial fever. Those physicians who had studied malaria and typhoid fever carefully before the war, and who had controlled their diagnoses by blood examinations, had always been skeptical about the existence of combinations of the two diseases, and had published from time to time protests against the indiscriminate use of the term typho-malarial fever. It needed the studies of the camp fevers, however, to prove to the satisfaction of most physicians that the combination was exceedingly uncommon, and that when it occurred the malarial fever preceded, or more commonly, followed the typhoid fever. In his remarks on the subject, based on the examination of the blood of 159 typhoid cases at Camp Wikoff, Ewing says: "In no case of undoubted and established typhoid fever were malarial parasites found in the blood in connection with any of these sudden rises of temperature (in typhoid), but only at the onset of the disease or during convalescence," and later in his article, "In short, in spite of painstaking effort, the attempt to find a case of typhoid fever and active malaria progressing simultaneously was unsuccessful." Aside from this, the clinical study of the disease has received but few important additions since 1898, though mention must be made of the valuable studies of Craig on latent and masked malaria, studies which showed how great the danger to a community might be from soldiers returned from the tropics. In his article published in 1904 Craig states that 25 per cent. of the soldiers returning from the Philippines show latent or masked infections, and in a large percentage of these cases the parasite is the estivo-autumnal crescent, a stage of the organism capable of development in the mosquito. The same observer cites one company of 60 men in which 41 had parasites in their blood, and yet but 14 complained of illness.

As far as the parasitology of malaria is concerned, the past seven years have been marked by great simplification in staining methods, but discoveries of paramount importance have not been numerous. The studies of Craig on estivo-autumnal fever have tended to confirm the views of the Italian school as to the duality of its parasite, and the work of Ewing on the tertian parasite has thrown light on its early sexual history in the circulating blood. Working Party No. 2 of the Yellow Fever Institute has been able to show that at the time of the malarial chill there is present in the blood a toxin, and have been able to produce a chill by the intravenous inoculation of filtered blood extracted during the paroxysm.

The study of the distribution of the malarial mosquito has been carried on in a few places, in Boston by Theobald Smith, in the Valley of the Androscoggin by Jordan, and in Baltimore by Hirshberg and Dohme, but the amount of work which has been accomplished in this direction, and the time and money which have been expended in the attempt to exterminate the malarial mosquito, is almost infinitesimal when we consider the territory affected by the disease, and the losses resulting from it. Woldert estimates the annual financial loss in Texas alone at over $5,000,000, and if all the infected zones in the United States are considered the loss must be appalling. Like yellow fever, malaria is a perfectly preventable disease, but to stamp it out requires either destruction of malarial mosquitoes, or protection and sterilization of infected individuals. In this country mosquito extermination has always been the favored plan, but before it can be accomplished a much more complete knowledge of the distribution of the anopheles is necessary, and much more thorough education of the public as to the necessity of the work. The danger that the disease may be introduced into uninfected areas by soldiers returning from the tropics is a real one, though, as Theobald Smith has shown, it is unlikely that the estivo-autumnal parasite will be introduced into the northern states. Still, we have plenty of southern territory not yet infected, and the extermination of mosquitoes would prevent the possibility of such contamination. The question is one which has not yet been seriously considered in large sections of the country, but is, nevertheless, of the greatest importance.

FILARIASIS.

The work of Ashford in Porto Rico, and of Calvert in the Philippines has shown that filariasis exists in both places. In Porto Rico it is probably widely distributed, as Ashford found it in 30 out of 250 soldiers in the Porto Rican regiment. Cases of Gunn and of Brown have shown that infected individuals from this source have already reached this country. In the Philippines the extent of the disease is doubtful. Calvert found the filaria in only two out of 426 Filipinos, but it is to be noted that both of these individuals came from the same district, and it is likely that the disease is much more prevalent in some places than in others. In this country several domestic and imported cases have been reported since 1898. It seems extremely likely that the disease is much more common in the South than the literature would indicate, and that it is often overlooked. The fact that one man, De Sassure of Charleston, was able to report 22 cases, most of them originating in the United States, is pretty strong evidence that the disease is much more prevalent than is generally supposed. It is certain that there are present in this country varieties of mosquito capable of transmitting the filaria. As these generally belong to the *Culex* family, which is widely distributed throughout the United States, it seems possible that there is real danger of new districts becoming infected by returning soldiers or Porto Rican laborers. Before the matter can be definitely settled we need more information as to the exact varieties of mosquito which can transmit filariasis, and their distribution in this country. At present it is quite generally assumed that a number of varieties of *Culex,* and at least one of *Anopheles* can transmit the disease. We believe it was Myers who brought forward evidence to the contrary, and the matter is one which needs further investigation.

MALTA FEVER.

The fact that Malta fever was present in Porto Rico was first demonstrated by Musser and Sailer, and later by Cox and Curry. In 1900 Strong and Musgrave called attention to its occurrence in the Philipines, and still later cases occurring in returned soldiers were described by Curry and Craig. The number of cases which has been described is small, and practically all of them are in soldiers and sailors. In the seven years which have elapsed since the first case was reported in this country, no case originating here has been described, and it seems that there is little likelihood of the disease becoming disseminated in the United States. It is within the bounds of possibility, as Curry pointed out, that it already exists in the southern states. In its acute form it is easily confounded with malaria, and in its chronic stages it is generally diagnosed at first as chronic rheumatism. The serum reaction of the disease is so reliable, and the test is so easy of performance, that all cases with doubtful fevers in the southern states should be subjected to it. It seems highly probable that if this is done systematically the disease will be found to be present.

TRYPANOSOMIASIS.

The relation of trypanosomes to animal diseases was observed in the middle of the last century, and renewed interest has been awakened in these parasites in recent years by the discovery of new forms of animal trypanosomiasis, and by the observations on human trypanosomiasis initiated by the work of Dutton. The presence of the trypanosome infection known as surra among horses and buffalo in the Philippines was noted soon after the American occupation, and the results of American researches on this disease may be found in the valuable monograph of Musgrave and Clegg. Up to 1903 attempts to isolate trypanosomes in pure culture had been ineffectual, but in that year McNeal and Novy published the results of their work on the rat trypanosome. They were able to obtain the first successful pure culture of a pathogenic animal parasite with the absolute demonstration of its causal relation to the disease. Up to this time many observers believed that the different forms of animal trypanosomiasis were due to the same organism, but during 1903 and 1904, Novy, McNeal, and Ward were able to cultivate the trypanosome of nagana or tsetse disease, and also that of Philippine surra, and could demonstrate that the parasites from these different diseases showed variations in structure and mode of growth. Later Lewis and Williams succeeded in cultivating the frog trypanosome, showing that this also differs from the other forms. Some forms of animal trypanosomiasis have appeared in the United States, dourine having been observed in Nebraska. Whether there is any possibility of the introduction into America of human trypanosomiasis will be difficult to determine until we know more of certain forms parasitic in man, and the method of their spread. The form of the disease which is most likely to be found in the Philippines, and hence most likely to appear in this country, is the affection known in India as kala-azar or dum-dum fever. The parasite of this disease, usually spoken of as the Leishman-Donovan body, has recently been shown by Rogers and Chatterjee to belong to a sub-family of the trypanosomes. The method of transmission of this form of the disease to man is not definitely known so far as we can determine; it is probably transmitted like nagana by an insect, most likely a mosquito. The possibility of its introduction into this country will probably depend on the presence or absence of some insect host.

DENGUE.

A disease which does not seem to have received the study which it merits, considering its frequency, is dengue, or break-bone fever. The Reports of the Surgeon General of the Army for 1902 and 1903 show that in the Philippines it caused, in the former year, 31.67 cases of sickness per 1,000 of strength, and in the latter year 171.39 cases per 1,000 of strength. Presumably it has not been carefully studied in the Philippines, or in the South, where it also occurs, on account of its short duration, and the almost absolute lack of fatalities. In the Isthmian Canal Zone it has been studied in the last two years by Sutton and Carpenter. They have shown that it is probably not of the malarial class of diseases, but that it may, as Graham claimed, be transmitted by the mosquito. Their studies of the blood show that it is one of the diseases accompanied by leucopenia and relative lymphocytosis, and their bacteriologic studies suggest that a bacillus similar to the influenza bacillus may be the cause. The disease is one which, judging by its past history, is unlikely to spread beyond the southern parts of this country. It is worthy of more extended study by modern methods than has yet been devoted to it, and American physicians in the Philippines and the Isthmian Canal Zone will probably have excellent opportunities to clear up many moot points in connection with this disease.

ASIATIC CHOLERA.

During 1902 Asiatic cholera appeared in Manila, spread to the neighboring islands, and caused over 90,000 deaths before it was stamped out. The incidence of the disease among the whites was comparatively small, but among the natives it ran rife, owing to their lack of hygienic precautions and the favorable temperature conditions. In many instances the disease was not carried, as usual, by contaminated water, in fact, in the large cities indirect contact through food was a much more frequent method of spread. On account of the violent local reaction produced by Haffkine's cholera prophylactic the natives objected to its use, and as the scattered distribution of the population made it almost impossible to control them, this method was given up. The objections to Haffkine's prophylactic lead R. P. Strong to attempt the production of a protective serum lacking in the irritating properties of those hitherto used. By a process of bacterial autolysis followed by filtration of the culture he was able to produce a practically non-irritating protective. From the experimental standpoint Strong was able to show that animals and men treated by his method showed but little local reaction, yet developed in their blood substances strongly bactericidal to the cholera spirillum. As the cholera had practically disappeared from the Philippines at the time that Strong's work was completed there has as yet been no opportunity to put his method to a practical test. From what we know of the disease there is little likelihood that it will ever get a foothold in this country under our present quarantine regulations.

PLAGUE.

The appearance of plague in several parts of the civilized world in 1900, and especially its appearance in San Francisco and the Philippines, called the attention of American medical men to this disease. Luckily, but few of them had an opportunity to study it, and most of the American work on this disease has been done in the Philippines, where, according to Munson, 970 cases with 812 deaths occurred between January, 1900, and September, 1903. It can not be said that anything startlingly new was discovered during this period, but a good deal of valuable confirmatory work was turned out. In this connection must be mentioned the work of Barker, Flexner, and Novy on various aspects of the subject, the work of Calvert and Ewing on the occurrence of plague bacilli in the circulating blood, and the work of Herzog and Hare on latent and ambulatory plague. The outbreaks of the disease in Australia, in Honolulu, in Glasgow, and in San Francisco have served to warn us of the necessity of being constantly on guard against its insidious approach. The recent outbreak in Leith, in which, as in the San Francisco outbreak, the origin of the disease was in doubt, shows us that at all our seaports constant vigilance must be maintained, and this must be the case so long as endemic foci are present in Asia. In the preventive work in this country, in this as in other infectious diseases, too much praise cannot be given to the officials of the U. S. Public Health and Marine-Hospital Service who, besides having to bear the burden of their appointed work, have often also to suffer the slings and arrows of outrageous politicians, and the contumelious taunts of misguided citizens.

CONCLUSION.

We have now considered the more important of the tropical diseases which occur in Porto Rico, the Phillippines, and the newly acquired Isthmian Canal Zone, the effects which their study has had on American medicine, and the chances of their becoming domiciled in this country. It has been possible to touch on many important subjects but lightly, and I ask your indulgence for the sketchy manner in which the subject has been treated. Of necessity a number of tropical diseases have not been mentioned, tropical ulcer, frambesia, bilharziasis, and blackwater fever, for example. These diseases are all present in our tropical possessions, but are of relatively minor importance, and as yet have received but little attention from American observers. Two general conclusions are forced on us as a result of this study, one being that many of the so-called "tropical" diseases are widely scattered through the subtropical portions of this country, the other that the acquisition of tropical possessions by the United States has had a markedly stimulating effect on American medicine, and has led to valuable work, some of it of the very first rank, all of it showing evidences of earnest and painstaking effort.

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A CASE OF PERIPHERAL NERVE SYPHILIS.*

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CHICAGO.

That the peripheral nerves, both cranial and spinal, frequently become affected in the course of cerebrospinal syphilis, is every-day experience. Disease of peripheral nerves or nerve-roots without co-existent syphilis of the central nervous system, is rather unusual. Of all cranial nerves the trigeminus is most often affected singly by the specific process. This may occur as part of a periostitic process in the foramina of exit; at the optic foramen, foramen ovale and foramen rotundum; or as a result of destructive processes in the nucleus by hemorrhage, softening, sclerosis or tumor. Isolated disease of the trigeminus, however, is exceedingly rare. The rule is for other nerves to be involved along with the trigeminus in the following order: Optic, facial, oculomotor, abducens, auditory, olfactory, trochlear. The facial, acousticus and motor nerves of the eye are frequently affected together and constitute part of a basal meningitis.

The clinical phenomena of peripheral nerve-syphilis manifest themselves either as neuralgia, polyneuritis, or root neuritis. Of the cranial nerves the trigeminus is usually the seat of isolated or simple neuralgia, which differs in no respect from ordinary trigeminus neuralgia from other causes. The same is true of the symptomatology of facial and auditory neuritis. It is evident that the diagnosis can not be made from the symptoms, but from the history of specific disease and the discovery of the stigmata of syphilis.

Nonne in his book on "Syphilis of the Nervous System," best describes root neuritis in Kahler's words:

> In an individual, the subject of syphilis, or who has had syphilis, there appear besides other cerebral symptoms, or without any brain symptoms, gradually progressive paralyses of various cranial nerves, which are recognized as peripheral, for instance, facial paralysis. One nerve after another is attacked in a most irregular succession. In the second place, there may appear gradually increasing neuralgias in various spinal nerves, with hyperesthesias, or girdle pains, as a consequence of posterior root involvement. Disease in the anterior roots will manifest themselves by corresponding motor paralysis of the peripheral type.

Patient.—A. Y., German, aged 40, single, a cook, entered the Cook County Hospital, March 17, 1905.

History.—His family history is negative. He is a moderate smoker, never drank spirits and but little beer. He had several venereal sores about 8 years ago; one of these was a hard chancer. This was followed by secondaries, such as sore-throats, alopecia, mucous patches and eruptions. About seven years ago he suffered from what he calls acute articular rheumatism. His joints were swollen and painful for three months and the disease disabled him altogether for about six months. Last September he experienced severe pains in his left thigh which he considered rheumatic. After the application of some liniment he discovered that not only was his thigh smaller and weaker, but that his left eye was also turned inward and that he saw double. A two months' stay in the hospital brought about much improvement and subsequent treatment at the Illinois Eye and Ear Infirmary completed the cure. The condition of the thigh, however, has remained unchanged.

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* Presented before the Chicago Neurological Society, 1905.

He now comes to the hospital on account of severe pains in the entire right half of his face, which affect principally the right ear, but also involves the lower maxillary region. For a week he suffered constant pain, which even a tooth extraction failed to relieve.

Examination.—The patient is a small, poorly nourished man of middle age, who talks rather rapidly and stammers considerably. His face presents a typical peripheral facial paralysis. The wrinkles on the right half of his forehead have disappeared, the right eye does not wink, the right half of the face has lost all expression, the right corner of the mouth droops, while the left is drawn up high. When he attempts to wrinkle his brow the right half remains motionless. Sniffing is only done with the left half of the nose, in speaking only the left half of the mouth functionates, and in an attempt to uncover the upper teeth, only the left side responds.

In an effort to close the eyes, Bell's phenomenon is elicited on the paralyzed half of the face, to-wit: the affected lid fails to completely cover the eye-ball, and, instead, the latter turns upward and outward so as to hide the iris.

The pupils are equal and react well to light and in accommodation. While there is subjective pain in the region of the ear, there is no tenderness over the mastoid, and objective sensory disturbances can not be elicited. No signs of external or middle ear disease can be found. There is no nerve-deafness. The tongue is protruded in a straight line. Taste is markedly impaired in the anterior two-thirds of the right half of the tongue. The post-cervical and inguinal glands are slightly enlarged.

The left thigh is considerably smaller than the right, and its strength is greatly reduced. There is tenderness at the point of exit of the sciatic nerve. When the sciatic is put on the stretch there is some pain. The thigh muscles on the left side are soft and flabby and present distinct atrophy.

On the middle third of the right leg there is an old scar of about the size of a half dollar, which has pigmented edges and a parchment like center, evidently the remains of a tertiary syphilid. There is a distinct perforation of the soft palate, painless, and therefore unknown to the patient, probably syphilitic in origin. The grip in both hands is about equal and normal. Sensation is nowhere disturbed. The superficial reflexes are present everywhere. McCarthy's reflex is absent on the right side. The deep reflexes are normal in the upper extremities. Kneejerk is exaggerated on right side, and considerably reduced on the left side. The Achilles jerk is present bilaterally, but somewhat less marked on the left side. Gait is about normal. Co-ordination shows nothing abnormal. The eye-grounds are normal.

Large doses of mercurial inunctions and of potassium iodid up to 12 drams daily failed to produce any decided improvement during a course of treatment of two months' duration. The only change noted was a disappearance of the pain in the trigeminus region, which can not positively be attributed to the antisyphilitic treatment. The patient has now left the hospital and treatment had to be discontinued.

SUMMARY.

We find in this patient, with undoubted syphilitic antecedents and with the positive stigmata of syphilis, a right trigeminus neuralgia, a right-sided peripheral facial neuritis, neuritis of the left sciatic and left anterior crural nerves. These various nerve affections must be ascribed to syphilis, as we are unacquainted with any other single etiologic factor capable of producing such irregular nerve lesions.

100 State Street.

A METHOD OF TREATING FRACTURES OF THE SUPERIOR MAXILLA.*

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Although the body of the superior maxilla is not frequently broken, the surgeon occasionally finds fractures of the processes as the result of direct violence. The alveolar arch may be broken by a heavy fist blow, and the deformity which results is many times considerable and difficult to maintain in proper reduction. The ingenuity of the operator who treats these conditions in emergency practice is often taxed to the utmost. While it may be necessary for him at times to call a skilled dentist to his assistance, still it will be possible for him to treat nearly all these fractures single handed.

I have previously laid stress on the fact that the oral functions should be maintained in fractures of the jaws. To reduce properly and to immobilize the fragments, to retain the power of speech and the ability to take food, and to avoid the dangers of sepsis by providing for strict oral hygiene, are the conditions which the surgeon must meet.

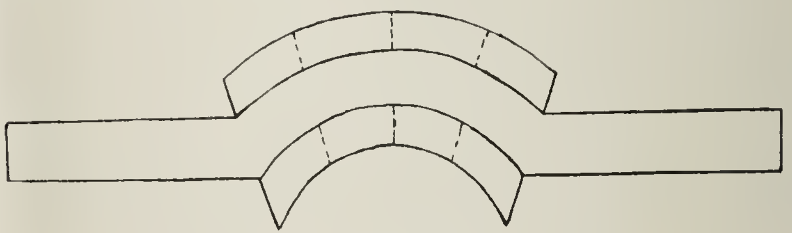

Fig. 1.—Plan of interdental splint.

It will hardly be essential to discuss previous methods which have been employed in fractures of the superior maxilla. While the literature on methods of retention in lower-jaw fractures is voluminous, that on fractures of the upper jaw is most meager and is limited to refined appliances which have been successfully employed by dentists, but which are outside the scope of the general surgeon.

The necessity for a simple, practical method of treatment was made manifest by the following case:

J. M, a laborer, aged 40, was assaulted by footpads. He received a heavy blow directly on the lips from the fist of one of his assailants. He was knocked down and remained unconscious for some time. He did not present himself at my service in the surgical dispensary of the University of California until two days after the injury. When first seen by Dr. Henry Horn and myself he was in a pitiable condition. His upper lip and gums were lacerated and greatly swollen. The upper two middle incisors and left lateral incisor were displaced downward about one centimeter, the alveolar arch being fractured. The teeth were loose in their sockets and the fragment of the alveolus bearing the three teeth could be moved up and down as if on a hinge. There was a large amount of clotted blood about the roots of these teeth.

In such fractures as this, Malgaine's dictum is to be remembered. "In all complicated fractures of the upper jaw," he says, "there is one principle which surgeons can not too much study, namely, that all fragments, however slightly adherent they may be, ought to be most carefully preserved, and they will be found to unite with wonderful ease." The advice is sound, for the blood supply of this region is very rich and the vitality of the bone is great. Although necrosis of small fragments sometimes takes place, it is the exception and not the rule. We, therefore, determined to save the much displaced teeth and the alveolar fragment.

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* Read before the San Francisco County Medical Society, 1905.

The patient was given an anesthetic, the fracture reduced and a temporary dressing applied. This consisted of an interdental portion, made of a thin, narrow piece of wood, maintained in position by dental compound molded over the incisor teeth and supported by the headpiece to be presently described. This held in position very well, but was replaced on the next day by the permanent apparatus.

This splint consists of a head piece, which is the suggestion of Dr. Horn, and an interdental plate of aluminum, the two parts being united by means of two strong rubber bands. The fracture is held reduced and an outline of the curve of the upper teeth obtained. This is best accomplished by making an impression in dental compound, softened by immersion in hot water. Sheet aluminum of No. 20 thickness is then taken and the pattern (Fig. 1) laid out on it. The curve corresponds with that of the incisor and canine teeth, and the width should be a little greater than the widest part exhibited by the impression. The two lateral arms are one centimeter in width and four centimeters in length and emerge from the body of the splint at a point about opposite the canine and bicuspid teeth, the object being that these arms shall not exert pressure on the corners of the mouth.

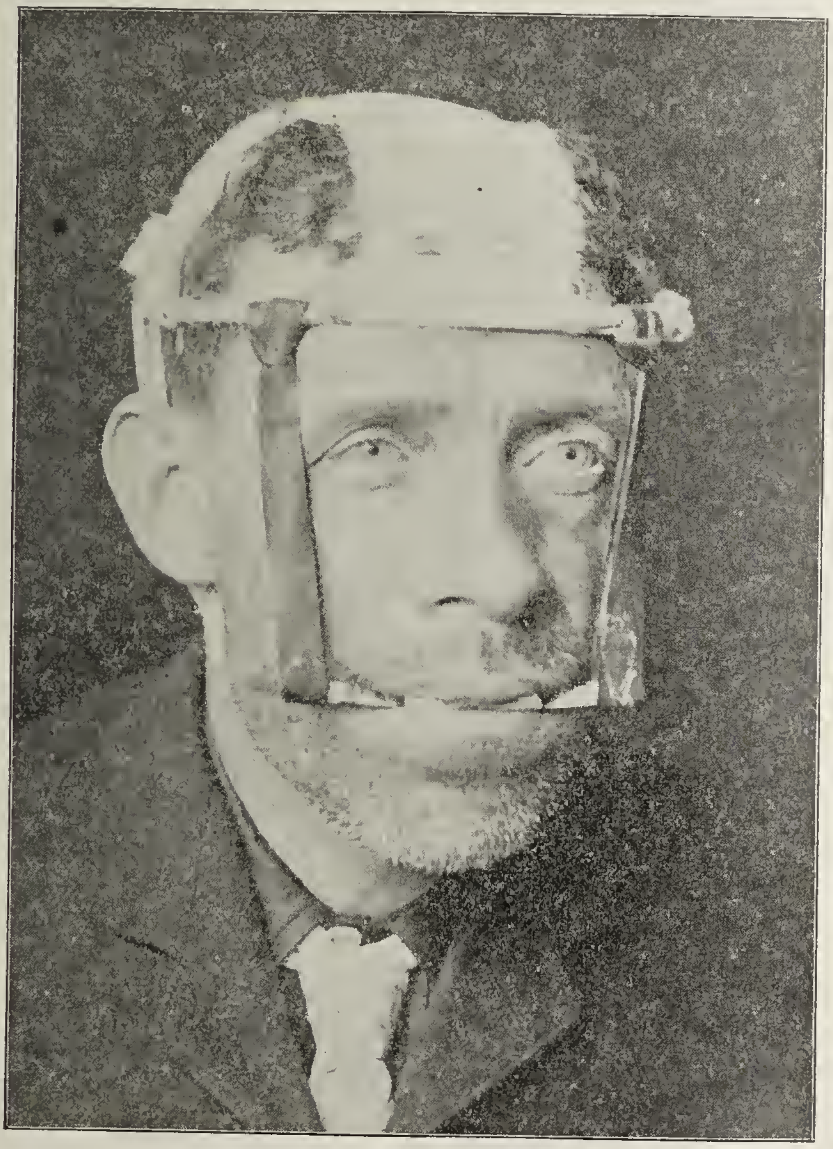
Figure 2.

The splint is then cut out by means of a pair of heavy shears. The lateral pieces are cut, as shown by the dotted lines, so that they may be turned up, thus forming the sides of a narrow curved gutter. Before this is done, however, it will be best to reinforce the apparatus by an extra piece, cut so as to conform with the base and arms of the splint. Over this extra piece the side pieces can be easily turned up by means of a pair of small pliers. The base can also be reinforced by a piece of heavy wire, bent so as to conform with the posterior curve of the splint. The tops and sides are then trimmed and the reinforced arms protected by wrapping with narrow adhesive plaster. The sides of the gutter should not extend so high as to interfere with the gums.

The head piece is made of heavy wire or whalebone, neatly shaped. It should be well padded and wound with adhesive plaster or a narrow roller bandage. The band is prevented from slipping downward by means of two strips of muslin bandage, crossing at right angles. Two heavy rubber bands are looped over the head band so that they run just to the outer sides of the eyes.

The interdental splint is placed in hot water, and the gutter filled with softened dental compound. It is then clapped on the teeth, pressed up firmly and maintained in position by slipping the rubber bands over the projecting arms. There is a tendency for the head piece to work forward, and this should be guarded against by fastening a bandage to the band above the occiput, then carrying the ends down and tying them securely well under the chin. The elastic pressure is most satisfactory. The splint does not loosen and has given us no trouble. The interdental gutter may be carried back beyond the projecting arms, so as to embrace all the upper teeth if desired.

The progress of this case was excellent. The mouth was kept clean by an antiseptic solution and the splint was frequently removed and cleaned by boiling. Union was found to be quite firm in twenty days and the patient was discharged five weeks after beginning treatment.

751 Sutter Street.

AN AMERICAN MEDICAL ASSURANCE.

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There are three chief purposes subserved by the American Medical Association—the advancement of science, the promotion of sociability, and the strengthening of the material interests of the members of the profession. The first purpose is accomplished with much success by the activities of the Association and its subordinate societies. The second purpose is inevitably aided by the meetings that are so frequently held and so well attended. But the third purpose, so far as collective action is considered, is generally neglected except by a very few local associations.

It is self-evident that any plan that improves the financial welfare of physicians and that has the aid and sanction of the American Medical Association must conduce to the creation of strong fraternal relations among the members and thus consolidate the Association itself. The feeling of brotherhood would be quickened by the knowledge that the misfortunes of our fellow-members are not matters of indifference to us, and that we, as an Association, are willing and able to furnish means of alleviating some of the unhappy experiences that may come to a worthy physician in the course of his life.

The foregoing are some of the reasons for suggesting that the American Medical Association should sanction the institution of a life-assurance company of strictly first-class character and operating all over the United States and Canada. This company, in its articles of incorporation, should devote 4 per cent. of its surplus profits to form a medical benevolent fund for the benefit of deserving members of the Association who are unfortunate. The British Medical Association has a benevolent fund that is often of much service to members, and which acts as a bond to hold the units of the association in fraternity. This fund should be placed in the direction of three trustees, elected for six years by the Association, which should also fill all accidental vacancies in the board of trustees. There should be an election of one trustee every two years at the general session. The local societies may voluntarily aid distressed members by helping to keep up insurance, or by providing small annuities, etc., and the trustees of the fund may contribute something in aid of the local efforts. Members who are provident enough to insure their lives would naturally have the preference in receiving aid from this benevolent fund.

In starting the assurance company certain principles should be kept prominently in view. It should be a first-class company in every respect, and should be based on the most approved statistics and conducted according to the best methods. The medical profession possesses much valuable experience in relation to life insurance, and it could be utilized here. The company must have all the elements that will make it a certain success, and it should be formed on conservative lines so as to secure the patronage of the profession generally and the public at large. The company suggested, through the support of medical practitioners in every locality, would be enabled to operate in an economical manner, saving the enormous cost of advertising, fees to agents, expensive building and lavish display; the extra profits resulting from these savings should be applied for the benefit of policy holders, either by reducing the premiums or by increasing their dividends. The very best expert assistance should be secured, both in drawing up the constitution of the company and in managing it. It should be a mutual company, in the sense that policy holders should share in its profits.

The philanthropic feature must not dominate the company, which, to succeed, must be a business conducted on purely business principles. It can be chartered in any state, but should prefer a state that has strict insurance laws. Every possible security should be given save increasing premiums in proportion to the advancing age of policy holders who have long been holding insurance. On the contrary, there should be a plan to make the payments less onerous to those who have carried a policy for many years. There should be as favorable options as are offered by any company, and endowments and annuities should be given. There should be no freezing out of policy holders nor any calculation to make increased profits by dropped policies. Policies should be non-forfeitable after the first year. The company should offer the best and lowest rates that are compatible with a perfect assurance. Young members of the profession and medical students should be encouraged to take out policies, and every member of the profession should constitute himself an agent of the company to assist in securing for it a large and profitable business.

The plan of organization is for three or more members of the Association to secure comparisons of the constitutions of some of the best companies, and with expert assistance, to draw up the constitution of this company. Then they should secure a charter, paying the expenses by an assessment of themselves. They should take power to issue stock, the amount at first not too large, with power to increase it. Four per cent. of the stock should be devoted to the benevolent fund; the majority of the stock should be held by members of the American Medical Association and the stockholders to pay 25 cents on the dollar to form a fund for beginning operations. For the first year 70 per cent. should be allowed as commission on new business, to be turned into the expense fund. After the first year, agents should be allowed a reasonable commission, and physicians may be agents. Competition with other companies should be avoided, but an energetic canvass by the agents is desirable. There are new life-assurance companies being organized every day, and the one now proposed has as fair a field as any, and it may easily command all the capital that is needed to make it a going concern and one that promotes the common interests of the public and the profession.

THE ETHICS OF PHARMACY.*

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It is rather a peculiar feature of life that some of the best advice we get is from those who know the least of what we do. The charming sarcasm of Pinafore in the representation of Sir Joseph Porter, K.C.G., at the head of the British Admiralty is only excused by the truthfulness of the application. Many of our great secretaries of war and of the navy have been ignorant of the principles of land and sea warfare. Some of our great presidents have known nothing of statecraft on their accession to office; great lawyers often do not know how to draw a will, and great physicians have been among the most distinguished legislators of the world. It is perhaps, therefore, not entirely amiss to have an address on the ethics of pharmacy from one who is not in the profession. A man who stands by at a game of chess sees the brilliant move which would gain the victory, which the master overlooks, and from the external viewpoint the non-professional may have a clearer idea of relations than one on the inside.

The profession of pharmacy has become more and more a truly scientific vocation. In nearly all the states, those who enter on this profession are required to secure a license, just as in different communities the physician must qualify before a competent board. Schools of pharmacy have been established in almost every state and territory where young men may have the opportunity to prepare themselves for the important and responsible duties connected with their business.

In speaking of the ethics of pharmacy, therefore, I shall regard my subject largely in the scientific rather than in the commercial aspect. I realize as clearly as any one can the fact that people do not enter professional life as a rule, from mere sentiment or mere love. Most of those, and perhaps fortunately, who engage in professional life have no fixed income and must depend on their professional services for their living. I, therefore, am not one who looks with contempt on the commercial side of the profession of pharmacy. Its existence depends primarily on its bread-winning opportunities and when discussing the ethics of pharmacy the fact that it is a money-making profession, or at least should be, ought not to be forgotten.

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* Address delivered at the graduating exercises of the National College of Pharmacy, 1905.

I am not one of those who believe that endowed science is always the best kind, but in all scientific pursuits, the spur and the whip, and the necessity of putting a little money in the purse, are useful not only for the purpose for which they are intended but also from the purely scientific aspect of the case. It is, therefore, not at all surprising to find in such professions that the best code of ethics, when followed out, is likely to lead to the greatest pecuniary gains. I shall not go to the dictionary either Greek or English, to quote you the definitions of ethics. For our purpose, it is sufficient to know that ethics include simply the proper conduct of affairs. Granting this as the basic principle of the discussion of ethics in the logical development of this subject, it is necessary to see the definite classes of relations which the pharmacist bears to the community. A simple analysis of these conditions shows that there are three important and separate interests with which the pharmacist holds intimate relations:

First. Those of his own profession;

Second. Those of the great medical fraternity, and

Third. Those of the public.

In order that this address may possess some unity of structure, I will briefly discuss the ethics of pharmacy in these three particulars. I wish to say, however at the very outset, that I have nothing at all to offer in relation to that part of the business of the pharmacist which relates to dealing in articles not remedial in their nature. I well understand the fact that it is very probable the belief in the potency of drugs is greater than their merits warrant. The very moment any disturbance of the physical functions occurs, the tendency is to "take" something, usually without much discrimination as to what it may be. There has undoubtedly developed in this country and in other countries in the last few years a distinct drug habit which is certainly reprehensible, and ought to be corrected, but unless we make light of the results of experience and of scientific inquiry, we must admit the potency and usefulness of drugs. In the last few years, the whole science of physiology, and with it pathology, has received a new light from the researches made by the chemical profession. We have seen gradually crumble and decay the old theory of the mysteries of vital force. We have seen formed and strengthened the idea that the growth of a living body, its functional activity, its diseases and decay are due to certain reactions which go on within the body, which are purely chemical in character. The principles of physical chemistry explain the last of the mysteries of so-called vital activity. Thus, having established the doctrine that these changes in the body are strictly chemical in their nature, we have laid broad and deep the foundation which justifies the use of drugs.

Perhaps one simple illustration of this principle may be of use, namely, the injection of saline materials in certain disturbed and weak actions of the heart for the purpose of stimulating this organ and with it the general cellular tissues of the body. The good effects of these drugs are based on indubitable chemical principles which it is scarcely in place to outline here. I will admit without question that up to the present time and even at the present time the use of drugs is largely empirical. It is not always possible for the physician to foretell nor even to foresee the effect of some of the drugs he administers, but there are large classes of remedies of which this is not true; remedies which have a specific physical and chemical action, which is well known, and the variations from which are determined by the idiosyncrasy of the patient himself. This class of remedies forms the bulwark on which rest the great professions of pharmacy and therapeutics. In general it seems to me, therefore, that the relation of pharmacists to the profession itself may be defined in a few words, namely, that the pharmacist should only keep and dispense those remedies whose standards are fixed by the acknowledged authorities of his profession and which are of the purity and strength required. In this case, the pharmacist depends largely on the manufacturer, and it seems to me the duty of the profession to itself as a profession to patronize only those manufacturers whose wares are of the quality and strength specified. In other words, the ethics of pharmacy require that the pharmacist should keep in stock and sell only preparations which are pure, which are true to name, which are unadulterated and which are of the strength and quality required.

This leads us to the discussion, briefly, of one of the great temptations to which the pharmacist is exposed very frequently in this respect. It may be represented to him that a product which is not that which is required in a given instance is described as being of the same quality and usefulness and as serving the same purpose and, therefore, as being a wholly proper substitute therefore. Since it can be offered at a very much reduced price and sold at the same price as the genuine article, if the pharmacist is convinced of the truth of the representations made to him, he may fall a victim to this temptation. The very moment that this happens he commits a moral crime which, although in itself perhaps not threatening seriously in every case the health or welfare of the community, opens the door to a series of offences of the same kind, which may end in the total degradation of the character of the wares which he keeps.

This leads us to the second factor in the relations of the pharmacist to his professional brethren which is of a very important character, namely, that for the sake of gaining trade it is highly reprehensible for the pharmacist so to reduce the price of an article as to temporarily make its sale unprofitable with the hope of establishing a trade therein and then raising the price to the profitable basis. Such practices as these are simply introducing into pharmacy the principles of the great trusts, which, by reason of the funds at their command are able at will to depress the price of a commodity below the point of profit and thus to crush and eradicate the weaker competitor. The very moment that the pharmacist depresses his prices below the point of profit he enters on a career which threatens the existence of his profession. Better far to have no trade at all than trade of this kind. Naturally, there is another extreme in this matter which must also be avoided. That is a union of pharmacists or an agreement between them to raise the prices to an unwarranted extent beyond the point of reasonable profit. Such a practice is just as reprehensible and just as dangerous to the profession as the one just mentioned. I believe in united effort, in organization, whether it be of labor or trade or manufacture, but the object of such organization should always be a legitimate one and never for the purpose of securing in any way a pecuniary advantage not commensurate with the value of the service offered. Labor should be paid living wages and the laborer should do good service. The trade should make legitimate profits and its offerings to the public should be pure and wholesome. Manufacturers should be able to declare reasonable dividends, by studying the conditions of the market and not by destructive organization eliminating the weaker competitors, and their products should never fall below the standard.

I have mentioned only, as you have noticed, the chief points of ethics of pharmacy in their relations to the profession—purity of products, legitimate profits, freedom from debasement and substitution.

The relations of the pharmacist to the physician is perhaps the most important of all from the viewpoint of ethics. One of the most important of these relations is a point already mentioned, namely, to have in his possession only pure and wholesome products, so that when the physician sends his prescription to the druggist written, let us hope, in an intelligent way and by an intelligent man, he may have compounded the article asked for. But the pharmacist should remember that the physician has rights in the community as well as the pharmacist. He has trained himself to be a guardian, as it were, of the public health. The unselfish physician is more inclined to prophylaxis than to therapy. His object is more to conserve the public health than it is to cure the sick. Usually, however, the public does not feel like calling on the physician until it is ill. It pays very little attention to his appeals for sanitary regulations, but is quick to employ him when sickness occurs. If we admit that the physician thoroughly qualifies himself for his profession, that he has the qualifications which every true physician should have, with that high regard for the ethics of his profession which is the salvation of his work, he has rights which, as I have said, the pharmacist must also respect. One of these rights is the one by which he is charged with the care of those who are ill in the community. In this country, however, there has grown up a system of the practice of medicines which is not only reprehensible but thoroughly dangerous. It consists in the concoction of preparations many of which are valuable remedies, which are sold under fanciful names and with no indication of their composition, by means of advertisements in the public journals, directly to the patient himself. Unfortunately the pharmacist is made the instrument by means of which these unethical remedies are supplied. For the sake of a small profit, usually very small which can be made on these preparations, he consents to act as go-between and supplies to the community remedies which should be prescribed by the physician and compounded by the pharmacist himself. In this way, the pharmacist deprives the physician of legitimate practice and, as I believe, with far less profit to himself and benefit to the community than if he absolutely refused to degrade his profession by dealing in articles of this kind. To such an extent has this practice grown that even the physician is almost compelled to prescribe by name many of these articles, the composition of which he himself does not fully understand. Of course I do not include in this category as reprehensible those which are truly ethical that is, those which bear on their label their composition and which are not advertised by the public press or otherwise directly to the consumer. I do not consider that there is a greater evil to-day in our land affecting the profession of pharmacy than those so-called proprietary remedies. I do not deny the virtue or efficacy of many of these remedies, I only deprecate the way in which they are employed. It is with a feeling of humiliation and shame that I look into the reputable magazines and newspapers of this country day by day and see portrayed in picture and headline the virtues of concoctions the ingredients of which are never mentioned. Why, may I ask, should the pharmacist by law be compelled to label a bottle containing opium with a distinctive mark with the word "Poison" and with the skull and cross bones when he opens it to fill a prescription written by the physician, when he is permitted to sell the same substances without restraint or restriction and without mark or name to any citizen who enters his store and asks for a certain preparation under a certain name? There is no justice in such a business. It is unethical in the extreme. It is not treating the medical profession as it should be treated. It is helping to deceive and to defraud the public.

I have sometimes heard objection made to the filling of prescriptions because of the enormous profit which the pharmacist is said to make thereon. Now it seems to me that such an objection is wholly untenable. In making up the prescription, the pharmacist exercises skill which has come to him by long study and experience, which has cost him perhaps many thousands of dollars. Why should he be asked to charge for the prescription only a fair profit on the ingredients which it contains? There is no reason. He is entitled to a just profit and to pay for his skill and experience. The great artist who places on canvas a picture may just as well be required to sell it, for the cost of the paint, of the canvas, of the frame and of the time which he devoted to it. It seems to me that the chief legitimate field for the pharmacist is the prescription field and just as soon as the use of patented and proprietary remedies is eliminated from this land, the pharmacists will find that the total profit which was derived from them was very small, as compared with the sale of ethical remedies which will take their place.

To sum up briefly, the ethics of pharmacy in its relation to the medical profession consists in the training of skilled pharmacists who shall be able to compound in the most artistic way and with the best results to the patient the prescription which the physician may present.

The relations of the pharmacist to the public is the third subject on our list. This has been largely outlined in the previous paragraphs, but there are some special features of the relations to the public to which I would like to call attention.

In the first place, the pharmacist should be protected in his relations to the public as against other branches of trade in the dealing in articles not connected with remedies or prescriptions, but which are by general consent permitted to the drug store. He should be protected in his relations to the people against the dealing of grocers and others in articles which are peculiar to his own business. The mere dispensing of medicines on the physician's order might not be a sufficient business to warrant the highest degree of experience and talent in entering the profession of pharmacy. There are, however, dozens and perhaps hundreds of articles in common use which are commonly found in the drug stores of our country. I may say that among them is one to which I am not particularly devoted, namely, the soda water fountain but it is one which receives universal patronage. I do not, I hope, convey the impression that the drinking of carbonated water mixed with a syrup and flavored with a fruit, is objectionable. What I do object to, however, is serving to the community those articles which are not of the proper quality. When the pharmacist dispenses artificial flavors and artificial colors to the public under the guise of the genuine article, he is certainly overstepping the rules of ethics regulating his relations to the consumer. Of course, there are objections to the ice cold character of the beverage, especially in the heated months when large quantities of such ice cold drink are consumed, but since I know of no way to raise the temperature of the beverage without disappointing the consumer and injuring the business, I shall content myself by urging on the pharmaceutical profession the necessity of inducing their customers to drink slowly and deliberately, thus adding to the pleasure of the consumer and detracting nothing from the profit of the dispenser. It might be well if above each soda water fountain should be hung a placard, so that all should see—

"Full many a man, both young and old,
  Has gone to his sarcophagus
By pouring water icy cold,
  Adown his hot esophagus."

Then again, the pharmacist is in many cases an emergency physician. In his studies he must learn the principles of therapeutics and to a certain extent their practice. He must be appealed to from time to time in cases of emergency and accident for immediate help, and, therefore, in his relations to the public he must be so much of a physician as to extend at least the first aid in the way of drugs and remedies and other help.

The pharmacist, finally in his relations to the public, must not allow himself to keep a saloon. There are many of the so-called proprietary remedies, to which I have alluded, in which the principal ingredient is alcohol. God only knows the source of this alcohol, but at least it is a stimulant and an intoxicant. No pharmacist who regards rightly the principles of ethics toward the consumer will sell or keep on sale such beverages. If he does, he should at least obey the laws and take out a license therefor. If, by the rules of his profession or by the laws of the country the pharmacist is not allowed to sell the genuine alcoholic beverages, such as beer, wine, whiskey and brandy, he certainly should not be allowed to deal in any kind of misbranded and perhaps injurious compounds containing practically the same active principles under fanciful, misleading and deceptive names.

Finally, I would say that both the pharmacist and the physician should cultivate the most friendly relations toward each other in their professions. Sometimes each must exercise the profession of the other. Thus the physician, especially in the country, often must exercise the functions of the peripatetic pharmacist. So the pharmacist in the city is often called on to exercise the functions of the resident physician. It is a pleasing fact to know that the great national associations of pharmacy and medicine are drawing closer and closer together and there is no reason why they should not amalgamate into a single body, having for its object the strengthening of the great principles on which the two professions are based and the good of the whole community which they are called on to serve. To this end, I should like to see more and more entering into the schools of pharmacy the elementary principles of medicine, and I should like to see introduced more and more into the medical schools the true principles of pharmacy. There is one science which serves perhaps more than others to bind these two professions together, that is the science of chemistry. The physician first of all must be a chemist and must understand the intricate and wonderful chemical reactions which are taking place constantly in the body, and which, when disturbed, can only be brought back to normal conditions by the supply of proper chemical reagents. The pharmacist must understand first of all the principles of chemical reactions. His profession deals in the source of compounds, not merely of vegetable and animal origin, but covering the whole range of chemical products. Chemistry is the bond, then, which unites these two great professions and I am glad to know that in this school you have had instruction in chemistry which must be of the best. I have known your professor for years and there is no one who stands higher in the profession of chemistry, not only in this but in other countries, than Dr. Hillebrand.

You have now completed the course prescribed for the beginning of your professional career. You expect in this profession to earn a livelihood. To stand well in the community remember that first of all it is the duty of each citizen to be a patriot, to be devoted to his country and its interests, and to this end he can best serve his country by best serving his profession by standing immovably on the principles of ethics which I have briefly set forth. You should resolve that you will do what is right by your profession, by the physician and by the public; that you will never deceive a patron; that you will never take unfair advantage of a professional brother; that you will never put into a physician's prescription anything that he does not ask for; that you will never sell clandestinely to a customer an article which you would not be allowed to sell by its own name. By practicing honesty and industry you will succeed; you will become successful pharmacists; you will become good citizens.

ACUTE EPIDEMIC DYSENTERY.*

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The history of the study of the dysentery bacillus began with the discovery by Shiga, in 1897, of an organism whose presence he was able to demonstrate in every one of a large number of cases of acute dysentery. This bacillus differed from the colon bacillus especially in that it did not ferment glucose with the formation of visible quantities of gas, that it did not produce indol, and was motile only when freshly isolated from the intestine. It reacted with the serum of those sick with dysentery and usually for months after convalescence, and did not react in the trials made with the serum of those who had not had dysentery. There were more than 89,000 cases of dysentery in Japan in 1897, and Shiga has demonstrated that in the majority of these cases the bacillus described by him is the exciting factor.

Following Shiga's investigations, Flexner examined bacteriologically a number of cases of Philippine dysentery and found the Shiga bacillus in all of the suitable cases. Strong and Musgrave also found the bacilli in many acute and in some subacute cases in the Philippines. Of 111 fatal cases among soldiers, they class 21 as acute specific (bacillary) dysentery, 11 as subacute specific dysentery, and 79 as amebic dysentery. In the same year (1899), Kruse found the same bacilli in Germany and Spronck in Holland.

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* Read before the Lancaster County Medical Society, 1905, and before the Omaha and Douglas County Medical Society, 1905.

The investigations made during 1901 were principally carried on by E. B. Vedder and C. W. Duval, working under the direction of Flexner. They found similar bacilli present in the stools in 5 cases in Philadelphia, in 3 cases in Lancaster County Almshouse, and in 14 cases examined in an epidemic at Springside House, New Haven, Conn., where 50 out of 350 inmates were attacked. In the summer of 1902 (under Flexner's direction), Duval and Bassett found similar bacilli in a number of cases of dysentery in a children's hospital in Baltimore. Some of these were cases of dysentery and some were simply cases of summer diarrhea. Park and Dunham and Wollstein succeeded in isolating the bacillus from a few cases in Seal Harbor, Maine, Tuckahoe, N. Y., and New York City. Kruse found bacilli, which resembled the Shiga bacillus, in an epidemic in an insane asylum, but which failed to agglutinate in the blood of animals infected with Shiga bacilli, nor did the blood of these patients agglutinate the Shiga bacillus.

The cultural characteristics of the dysentery bacillus were given quite fully by Shiga in 1898, and are in many respects similar to those of the typhoid bacillus. Vedder and Duval gave some details of methods for obtaining the bacilli from the feces. The bacilli described by Shiga are small, thick rods with rounded ends similar in appearance to the colon bacilli. In cultures they are usually found singly and in pairs. When discovered they may be somewhat motile, but if so the motility is lost after prolonged cultivation on artificial media. Flagella can be demonstrated with difficulty. The bacilli are easily stained and are negative to Gram. They grow in ordinary nutrient media, better in the presence of oxygen. Gelatin is not liquefied. The optimum temperature is about 37 C., but they develop slowly at temperatures below 20 C.

Duval and Bassett recommend collecting the stools from infants on a sterile gauze pad placed, in the usual manner, over the buttocks after cleansing the parts with bichlorid, the pad being retained by a napkin. The stool should be examined immediately, if possible. Stools containing blood and mucus are especially favorable for isolating the bacillus of dysentery. Enough material, usually from three to six loopfuls, is taken from the blood or mucus in the stool to render cloudy about 10 c.c. of sterile bouillon. The dilutions are made in the usual way, after the settling of the coarser particles, by carrying two, four, six or eight loopfuls of the suspension, depending on its opacity, into a second bouillon tube and from this into melted agar tubes from which plates are formed. The most successful plates present from 25 to 200 superficial colonies. The most favorable material is obtained at autopsy, after opening the lower intestine with sterile instruments, by scraping the mucous membrane with a sterile knife; the scrapings being introduced into a bouillon and plated as above. At the end of twenty-four hours' incubation, the first crop of colonies on the plates should be marked off with a blue wax pencil, as described by Vedder and Duval, and the plates returned to the incubator for another twenty-four hours. The second crop of colonies is then examined and those presenting the character of *B. dysenteriæ* are transplanted to glucose-agar. *B. dysenteriæ* is to be sought among the non-gas forming varieties. Duval and Bassett describe the agar plate colonies at the end of twenty-four hours as being delicate and semi-translucent and bluish-white in color; at forty-eight hours, they are more opaque, whiter, of dull reflection and not elevated perceptibly above the medium. Under low magnification, a triple zone is evident. Colonies older than forty-eight hours can not be regarded as readily distinguishable from those of *B. coli.* Five types of the organism have been isolated: (1) The Shiga type, which attacks glucose and no other sugar; (2) the Flexner-Harris type, which attacks glucose, mannite and dextrine, but not lactose; (3) "Bacillus Y" of Hiss and Russell, which attacks glucose and mannite; (4) Duval and Shorer "Bacillus A," which attacks glucose, mannite, and lactose; (5) Duval and Shorer "Bacillus B," which attacks glucose, mannite, dextrine, and lactose. The Flexner-Harris type has been most frequently encountered in this country.

Bacteriologic reports on the investigations of 1903 were made by Duval and Shorer, Wollstein and Dewey, Gay and Stanton, Cordes, Waite, Kendall, Lewis, and Bassett. A pathologic report was made by John Howland, a report on blood reactions by Charles K. Winne, and clinical reports by La Fetra and Howland, Knox, Cordes, Amberg, Freeman, Warfield, Hastings, Reed.

Martha Wollstein also reported on the "Dysentery Bacillus in Relation to the Normal Intestines in Infants." The investigations were carried on in the cities of New York, Philadelphia, Boston and Baltimore under a grant from the Rockefeller Institute. In all, 412 cases were studied, and of these, 279, or 63.2 per cent., yielded the dysentery bacillus. These represent nine separate and distinct groups of cases studied by different bacteriologists, and one group gave as high a percentage as 94 per cent., while in another only 25 per cent. of the cases yielded the organism. This, however, was in the tenement district in New York, where the stools had to be transported to a considerable distance before being examined and where delay made the isolation more difficult. The same investigators working in Bellevue Hospital found the organism in 65 per cent. of the cases examined. The character of the stools was reported in 397 cases, and of these 120 were composed of blood and mucus, 36 of mucus, 226 of mucus and feces, and 15 of feces alone. The bacillus was recovered from 265 of these stools, from 88 which contained blood and mucus, from 25 which contained mucus alone, from 148 containing mucus and feces, and from 4 containing apparently nothing but feces. Therefore, only 4 successful cases contained neither blood nor mucus. Visible blood was contained in about one-third of the successful specimens. The most successful specimens, then, were those containing mucus and feces. Shiga, Flexner, Kruse, Duval and Bassett and Wollstein have in turn sought the organism in the discharges of healthy adults or children, but unsuccessfully. In 1903, Duval isolated a very few dysentery bacilli from the stools of two healthy milk-fed children to whom mild cathartics had been administered.

Flexner mentions the fact that while infections with the dysentery bacillus in adults often extend with epidemic severity, the cases of infection in children seem to be examples of individual inoculation, although occasional examples of contagion from child to child and sporadic infection among adults does occur. It can only be conjectured whether the bacillus gains access to the intestinal tract with milk, water or other substances. It may possibly exist as a saprophyte in the intestinal contents and become parasitic only after repeated insults to the mucous membrane. Flexner considers it possible that two modes of infection may occur, autoinfection and "extra-infection." Most of the infants whose stools were examined and who were not in hospitals and institutions had been given unboiled water, but the organism has not been isolated from water.

Shiga tested the agglutination reaction with the blood serum of something more than 100 persons who either had dysentery or were convalescing from it, and found that in most cases, after a week or ten days, dilutions of 1 part of serum to 30 of water gave agglutination, and often 1 part to 50 or more. The reaction was absent with persons who had not had dysentery, but with convalescents the reaction remained over a varied length of time, in one case as long as eight months. Shiga was disposed to regard the occurrence of the agglutination reaction in even those low dilutions as of great diagnostic significance. In summing up his remarks on this subject, he said: "*B. dysenteriæ* is agglutinated only by the blood of dysenteric patients; never by the blood of those sick with other diseases or of healthy individuals."

These conclusions were apparently confirmed by findings of Kruse, Flexner, Strong and others. Lieutenant Strong tested his Manila bacillus with serum from 100 individuals, of whom 12 were well and the others suffering from various disorders. The result showed a partial reaction in the case of one healthy individual and a positive reaction in one surgical case, a 1 to 10 dilution being employed and observation made at the end of thirty minutes.

It came to Dr. Park's notice that in some instances the bacillus did react with the blood of non-infected persons in fairly high dilutions, and he suggested that I investigate this phase of the subject. The bacillus was tested with the blood serum of 114 patients in Bellevue Hospital and the dispensary of the University and Bellevue Hospital Medical College. The bacilli employed were from Shiga's Japan (alkali type) and Flexner's Manila (acid type) cultures. Dilutions of 1 to 10, 1 to 20, 1 to 50 and 1 to 100 were employed, and the average time of observation was from two and one-half to three hours. An attempt was made not only to signify the presence of a reaction, but to indicate the degree of completeness of the clumping which occurred. It was found that in all cases of infants under one year, there was a complete absence of reaction, except in one case of a 10-months-old child where very slight clumping occurred in a 1 to 10 dilution. In all cases over one year, clumping occurred in some dilution. The conclusions[1] were to the effect that the serum of non-dysenteric adult persons does agglutinate the bacilli frequently in a 1 to 20 and some in a higher dilution; that the agglutinating power is wanting in the blood of non-dysenteric young infants (under one year); that the Shiga type clumps a little more readily than the Flexner type, and that a decided and prompt reaction in dilutions of 1 to 20 or higher in infants under one year and in 1 to 50 or higher in older persons who have not recently suffered from intestinal disease is probably pathognomonic of acute epidemic dysentery.

Among the conclusions reached by Dr. Flexner, after surveying the results of the investigations of 1902 and 1903 in this country, are the following:

1. The *B. dysenteriæ* can be isolated from the intestinal discharges, and the intestinal mucosa of a large percentage of children suffering from the diarrheal diseases prevailing along the Atlantic seaboard of the United States during the summer months.

2. The bacillus is to be sought, especially in the mucus thrown off by the intestinal mucosa and in the substance of the mucous membrane itself.

3. Blood admixture makes the isolation easier, as it generally indicates severe infections.

4. The number of colonies recoverable has some relation to the severity of the lesions and the symptoms.

5. The number of colonies obtainable is usually far below the number of colonies of the ordinary intestinal bacteria which develop on the plates.

6. The type most often found is the so-called Flexner-Harris organism.

7. Types of *B. dysenteriæ* of less well-established properties have also been encountered.

8. The blood of the children suffering from diarrheal disease agglutinates at times the bacillus of dysentery in high dilutions; but this agglutination by the blood does not proceed hand in hand with the occurrence of the bacillus in the intestine. The agglutination reaction is not to be treated as an index of the presence of, or infection with, *B. dysenteriæ*.

9. The close association of *B. dysenteriæ* with the intestinal mucosa, the increased numbers of the organism found under definite pathologic conditions, the established pathogenic action of the bacillus for human beings, and the specific blood changes met with in many of the cases of diarrheal disease, all speak for a relationship of cause and effect between the bacillus of dysentery and the lesions of the intestine.

10. It is probable that *B. dysenteriæ* appears, at times, among the saprophytic bacteria of the contents of the intestine.

11. The contagiousness of bacillary dysentery among adults and the rarer instances of diarrheal contagion among children prove the necessity of recognizing an "extra-infectious" origin of the disease.

12. The possible action of any of the many bacteria of the discharges, including the streptococcus, is not excluded by the special findings of the investigation.

13. The central fact brought out by the collective investigation is the frequent occurrence in the diarrheal diseases of children of a specific micro-organism, which hitherto has been held to be of special pathogenic action in human beings, and to be the cause of that form of dysentery among adults and children which is characterized by necrotic and pseudo-membranous lesions of the intestine and marked infectiousness.

14. The lesions of the intestines observed in the children who succumbed to the diarrheal diseases treated of in the reports were very varied in character, but there were rarely found among them the particular kinds of pathologic changes which characterize pseudo-membranous entero-colitis.

Dr. Holt, in reviewing the results from a clinical standpoint, mentions the following points: 1. Infection with the *B. dysenteriæ* occurs under quite a wide variety of conditions. It is seen in breast-fed infants as well as in those artificially fed. 2. It occurs as (*a*) an acute primary infection in children previously well; (*b*) as a subacute infection without previous acute symptoms; (*c*) coincident with or following other acute diseases, such as measles, pneumonia, etc.; (*d*) it is often seen as a terminal infection in children suffering from extreme malnutrition or marasmus. 3. It occurs as a mild intestinal disorder with few symptoms, and these hardly more marked than those belonging to intestinal indigestion; also with local symptoms of considerable severity, yet with very little fever or constitutional depression, and finally, in its most severe form, with both local and constitutional symptoms of great severity. 4. It is not a disease of any one locality, having been seen with great and about equal frequency in all the large cities in which investigations were carried on, the only variation in type being that in the warmer cities the proportion of severe acute cases was rather larger. Nor is the disease one of tenements and hospitals, a number of the cases observed being in children living in the best surroundings, even in the country. In its prevalence, it appears to be as widespread as are summer diarrheal diseases.

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[1] Medical News, Dec. 5, 1903.

The clinical reports include observations on 237 cases, and of these 26 children were previously breast-fed. Most of the breast-fed infants exhibited a milder type of the disease than the others. Of the cases studied, 91 were classed as examples of severe infection. These were characterized by much mucus and generally blood in the stools, usually fever, but not always high, and by marked general prostration. There were 81 examples of moderately severe infection, in which there was much mucus, and often blood in the stools, some fever, but not much constitutional depression. There were 63 examples of mild infection, in which the constitutional symptoms were very few; blood was seldom present; there was little or no fever; but the stools almost always contained mucus. There was only one case which at all approached the type of cholera infantum. Seventy-three of the 237 cases were fatal. In the matter of diet, there is some difference of opinion as to the desirability of withholding milk in cases of moderate severity. The intelligent use of milk seemed to give much better results than the substitutes usually employed. In some cases the infection is slight, while the digestive disturbance is severe. On the theory that spreading takes place through the discharges, the Babies' Hospital made a rule that the nurse in charge of the children's napkins should not at the same time have anything to do with the food or feeding.

In all, there were 83 cases in which the antidysenteric serum was employed, and 38 of these terminated fatally. On the whole, the results were disappointing. No unfavorable symptoms followed its use in any case. In only 12 cases did a noteworthy improvement appear to follow its administration. Dr. Holt does not consider that it has been given a sufficient trial. In cases of moderate severity, a dose of 10 c.c. a day is recommended, and in severe cases three times that amount. Of 372 cases studied during the past summer, 73 proved fatal. The antidysenteric serum used was made from horses by the injection first of dead cultures and later of living cultures of the dysentery bacillus. The results of serum treatment were again disappointing, but I have seen no extended account of the investigation. Dr. Louise Tayler-Jones isolated the bacillus from 6 out of 20 cases of dysentery in Washington, D. C., and described 6 other cases as being clinically suggestive of the presence of the bacillus. This proves Washington to be within the zone of distribution.

To epitomize Dr. Knox's experience with serum treatment at the Thomas Wilson Sanitarium, he found it to be of benefit in 5 cases, of doubtful benefit in 5, and inert in 10 of the 20 cases in which it was employed. It seemed to be of more benefit in severe toxic cases than in those of inflammatory type. Most of the cases benefited were those in which comparatively small amounts were given early in the disease. He emphasizes the necessity of promptness in treatment, and goes on to say that if the food can be stopped and the alimentary tract emptied within a few hours after the onset of symptoms, most infections can be aborted. In all his acute cases, milk was stopped for varying periods, and boiled water, with or without egg albumin, dextrinized cereal waters or broths, and later whey was substituted. Gastric lavage was resorted to occasionally and colon irrigation in nearly every case. Calomel or castor oil was given on admission, and large doses of bismuth subnitrate were employed as an intestinal astringent. Opium was sparingly employed. Whiskey or brandy, strychnia, digitalin and atropin were found useful as stimulants. Of 14 patients who had been previously fed on condensed milk, 8, or 50 per cent., died at the sanitarium in spite of treatment, while of the 26 cases given at their houses some form of cow's milk, but 8, or 29 per cent., died, 7 were improved and 10 were permanently cured. Of 17 infants under 6 months in Dr. Knox's series, 10 were bettered and 1 improved, while 6 died, a mortality of 34 per cent.; but of 18 infants between 6 and 12 months of age, only 8 were better, none improved, and 10 died, a death rate of 55 per cent. This difference he attributes to the fact that the untoward effects of improper artificial feeding are most in evidence in cases with weakened constitutions, rickets and the like, during the second half year of an infant's life. Of the 18 children older than one year, but 1, aged 13 months, died.

THE COMMERCE OF SURGERY.*

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"It is further to be observed that just as the self-assertion necessary to the maintenance of society against the state of nature will destroy that society if it is allowed free operation within, so the self-restraint, the essence of the ethical process, which is no less an essential condition of the existence of every polity may, by excess, become ruinous to it.

"In a large proportion of cases, crime and pauperism have nothing to do with heredity; but are the consequence partly of circumstances and partly of the possession of qualities which under different conditions of life might have excited esteem and even admiration. The benevolence and open-handed generosity which adorn a rich man may make a pauper of a poor one; the energy and courage to which the successful soldier owes his rise, the cool and daring subtlety to which the great financier owes his fortune may very easily under unfavorable conditions lead their possessors to the gallows or to the hulks.

"Unless a man's inheritance from the ancestors who fought a good fight in the state of nature, their dose of original sin, is rooted out by some method at present unrevealed; at any rate, to disbelievers in supernaturalism, every child born into this world will still bring with him the instinct of unlimited self-assertion. He will have to learn the lesson of self-restraint and renunciation. But the practice of self-restraint and renunciation is not happiness, though it may be something better.

"One of the oldest and most important elements in any system of government is the conception of justice. Society is impossible unless those who are associated agree to observe certain rules of conduct toward one another; its stability depends on the steadiness with which they abide by that agreement; and, so far as they waiver, that mutual trust which is the bond of society is weakened or destroyed.

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* Read before the Illinois State Medical Society, May, 1905.

"Evolution does not necessarily involve perfection, it involves remodeling; but its upward or downward tendency, depending on many conditions, will have to be judged by posterity. Many movements are undoubtedly retrogressive; there is more or less pain and suffering for us all. Error, which is not pleasant, is surely the worst sort of wrong. One man fights out the struggle for existence like a barbarian, a more enlightened one devotes his best energies to setting limits to the struggle. Science demonstrates to us that in prehistoric times man, like other animals, spent his life in struggle with his enemies and in competitive preying on the weaker and less cunning, who went to the wall, though these latter may have been the best. Perpetual war was the normal state of existence. The history of society is a record of the attempts of our race to escape and to enjoy happiness, and of all the successive stages of society that one is the most perfect in which the war of one against the other is most limited. To seek the common weal as much as his own is the matter of the ideal of the most perfected type of man and an essential part of his own welfare."

These quotations from Huxley are intended to place you in a mental attitude which will allow you to view the subject judiciously, without prejudice and without rancor. The matter is certainly one which deeply concerns our profession at present. We physicians, it is said, are no less deeply stained with the supposedly unfortunate taint of commercialism than our brethren, whether they be professional shopkeepers or artisans. The coin is supposed to clink melodiously to many in our ranks and, with the strenuousness of all Americans, we possibly are rushing the financial issue with undue ardor. This is to be no lugubrious address, filled with pessimistic forebodings, but a statement of facts bearing on the issue suggested by its title. To make the matter plain we will put the question plainly, and say:

Does the commercial attitude of the present day American physician interfere with his efficiency or with the progress of the medical profession? Does it lower the standard of the profession before the world and if so, wherein are we at fault and what is the remedy?

Without admitting that physicians are unduly commercial, a phase of the subject which we will discuss presently, it may be stated without fear of contradiction that the efficiency of the medical man was never more evident than at the present time. Never was greater industry or more strenuous effort displayed by any profession, never were more arduous labors performed, never were more sacrifices endured, never was more proficiency advocated and never were more glorious results obtained. The magnificent advance of the art of surgery has blazed the way, and has made possible the solution of innumerable problems by our associates in other departments of the profession, and if the sum total of human happiness is to be measured by the saving of life, then, indeed, should modern surgery be honored and its masters revered!

What concerns us most at present, however, is the part that so-called "commercialism" is playing in the development and efficiency of our art. Primitive man knew no further than the display of his self-assertion in grasping that which suited his fancy or gratified his senses. He slaughtered his neighbor that he might gain his possessions. As soon as his perceptive faculties become developed the babe of to-day grasps that which excites his desires and that inherent desire of possession and enjoyment underlies our very nature—a legacy of man's continual struggle with the forces of nature. In the evolution of society, it becoming evident that unlimited gratification becomes destructive to happiness, we have learned self-restraint, but the old instinct, though skilfully concealed, continues to guide the actions of many. Pelf, power or position is the mainspring which guides progressive man, and ambition, the underlying instinct of normal, active man; he who possesses it not is intellectually dead, or degenerate, or abnormal. To a greater or lesser degree we are all continually struggling for gratification, which, if allowed sway would logically bring us to destruction; and, hence the experience of danger, as noted in the history of our race, has brought us charity, humanity and religion instinctive of self-preservation, in the sense that they prevent the disintegration of society.

Physicians are no more exempt from the inborn desire to possess than other classes of society, and to this attribute is due much of their activity and success at the present time. Remove this motive, give them all they can enjoy, and their efforts would cease and the wheels of medical progress would rust. It is all well to talk of charity and humanity as incentives, but these alone would never suffice. The history of medicine shows this but too plainly.

From time immemorial, to our knowledge many centuries before the Christian era, certain individuals in all societies were recognized as healers of the sick. Our ancestors of those days were nothing to boast of. Probably from the sacrifices imposed on them and transmitted to the present, arose the idea, so difficult to eradicate, that the practice of medicine bears its own reward, in the satisfaction of its devotees in giving their knowledge for charity and humanity. "For thousands of years, the waters of the Ganges have been curing the Hindoo natives and for thousands of years the Brahmans who live in the shadow of the temples of Benares have been chanting the same conjuring formulas, the words of which have not even been changed" (Dr. Paul Bruzon), and ever since the plague has been decimating the ranks of the populace, "The superhuman inertia of their faith opposing all modern progress." "The medical student must abstain from all sensual desires, from anger, from dancing, music, quarrels and games." Even though pestilence and death walk among them unheeded. But even then, thousands of years ago, we see the footprints of boodle, for in spite of the oath of "The Charaka" the students were expected to propitiate their masters by presents of land and gold and cows, horses and rice. And as among the Hindoos so through all ancient tribes of which we have record, the healer's art was supposed to be practiced by conjurers, sorcerers and exhorters without compensation, though it became a matter of history that to cast out the evil spirit from the body of the rich native took many days and a great expenditure in sacrifices of gold and horses and cows, and, probably, because of the lack of fees and definite compensation, botanical gardens and temples of medicine fell into ruin. King Solomon of old, who was a great physician, did not charge his patients, but the mendicant practitioner who succeeded him held out his hand and so did the barber of a few centuries ago, while it is reported that the itinerant surgeon of that era always managed to get away with much stuff if the patient survived.

When scientific medicine became established, that is, when dissections were recognized as essential and physiology was placed on a firm basis, physicians began to expect definite remuneration, though its amount was ago, when my father visited Nélaton, in Paris, each usually left to the generosity of the patron and was largely influenced by the results obtained. Fifty years patient placed his honorarium on the mantel before retiring and pennies and gold pieces were raked in without question as to the standing of the giver. Even to the present day the *"nach belieben"* of the German, and the *"comme vous voudrez"* of the French are still somewhat in vogue and it is not unusual for physicians to delay the sending in of their accounts for several years. The English and Americans were among the first to make it plain to their patients that a definite amount was expected and now they have taken the matter entirely into their hands until the practice of medicine and surgery has in many cases become a business transaction, with "pay on the first of the month" as its guiding motto. Surgeons are even more commercial and many real modern gentlemen of the knife demand pay at the time of rendering service, which, in view of many circumstances surrounding operative work is perfectly legitimate and a matter for each to decide; it should not be subject to criticism and is no concern of others among their fellows. Call it "prompt collection" or "commercialism" if you will, it is a personal matter and does not involve any factor calling for discussion.

Different, however, are practices prevalent among surgical men undertaken with a commercial object in view, which tend to lower the general standing of the profession before the public or to lessen the dignity or self-respect of our individual members. Before entering on this phase of our subject, however, it may be proper to explain briefly why it seemed best frankly to choose this subject for an address, in spite of the many warnings of possible mischief which open statements might entail. A long life of earnest professional labor entitles me to the credit of proper motives, while a careful consideration of present conditions in this regard makes it evident that truthful, unbiased statements, presented in becoming spirit, may assist in preventing much feeling and tempestuous discussions in the future.

Never have the prospects of our great profession appeared brighter, never has our organization reached such high degree of perfection and yet seldom have we seen so much disturbance and personal feeling created as by this question of commercialism among surgeons, until it threatens to undo the efforts of years in making our work effective. To fulfill our destiny as the greatest of all professions, which it is bound to become, we must acquire power, and to gain the latter we must perfect the centralization of our organization, but we must do this with perfect regard for the referendum, which calls and always will call for sufficient publicity among ourselves to attain harmony. It has also been said that open statements of our frailties might attract the attention of the public and discredit our calling. This in my opinion is sheer nonsense and simply indicates the sensitiveness of some of our members. The mass of our men have always stood for frank statements and no evasions, strong in the knowledge that for labor done and results obtained the physician can stand out in the open. I will only dwell long enough on the story of our weaknesses to demonstrate the logic of the conclusions. I have prayed earnestly for guidance to enable me to be tactful, with the hope of throwing oil on the troubled waters.

Remember that "evolution does not necesarily involve perfection; it involves remodeling, but its upward or downward tendency, depending on many conditions, will have to be judged by posterity. Many movements are undoubtedly retrogressive; there is more or less pain and suffering to us all; error which is not pleasant is surely the worst sort of wrong." To desire to make money is a natural instinct of man; money buys bread and if associated with merit and ability it buys power and position. A German writer by the name of Zimmerman, has just edited, in Berlin, a book in which he says that Americans are utterly sordid and egotistical, depraved and without heart and unable to grasp the conception of an ideal. In answer to such absurd statements, it may be asserted as a provable proposition that commercialism and idealism are not incompatible and that the most vulgar forms of the former have frequently been associated with actions indicating the highest type of ideals. In spite of its commercial supremacy, which to a great extent is the result of surroundings and circumstances, America as a nation, in its past history, in its development and in its present position among other nations, stands as the ideal of the human family. And so it is with our profession. Whatever there may be of commercialism among our individual members, it is mostly the evidence of the making the most of presenting opportunities, due to the common instinct of all mankind in its struggle for existence, and is in no way incompatible with the highest type of idealism. How possessions are gained, how expended, this is the vital qualification. What might be termed improper commercialism by a physician implies not the desire to obtain money or its possession, but the use of improper methods, producing injury to the patient or to the community, to his fellow, or to the profession at large.

There is little to be gained by analyzing the commercial portion of our work in order to establish the resulting characteristics of harm; it seems more direct to mention such practices as are claimed to exist among us, which tend to injure our profession, commenting only so far as their gravity and the disturbance they have caused would seem to warrant.

It is rumored that some surgeons perform unnecessary operations or operate too hastily, without careful analytical investigation of each individual case, or operate on patients curable by less dangerous medical methods; that they charge exorbitant fees; that they make false or ambiguous statements concerning suggested competitors, or that they perform criminal and improper operations, and what not. Of course, this is all true. Some men do all these things, our profession is not free from black sheep. There are abortionists and rascals among physicians; there are thieves and lawbreakers recognized at the bar; there are "wolves in sheep's clothing" wearing the cloth, and the realization of a world without these unfortunates is still a hazy dream. Yet, without condoning their offenses before meting out final judgment should we not carefully weigh their respective responsibilities, bearing in mind their organic peculiarities, the incidents of their development, and the trials and temptations surrounding their fall? To take what belongs to another, or even to take life, is not always theft or murder. Apparent guilt only becomes crime when all attending circumstances have been strictly taken into account.

With these reflections on phases of medical frailty and neglect, which are unpleasant to dwell on, and which, after all, in a different aspect are simply peculiarities incident to members of all trades and professions and all walks of life, let us pass to the consideration of another variety of supposed medical misdeeds, which have really been instrumental in prompting me to choose this subject. I refer to what has by some been called "medical graft." This term has been much in vogue these latter years, and, as usually applied among surgeons, it implies the offering or accepting of bribes between medical men to promote the influencing of patients toward accepting the services of the dividing surgeon irrespective of the quality and value of the services rendered. The progress of the medical profession has been marked by at least the average number of exciting episodes, leading to dissension and it might truly be said that, barring the holy clericals, no peaceful profession is more keen for a "scrap." It is a decade or two, however, since so much acrimonious discussion has arisen among surgeons as has resulted from this source. For a few years past, it has been whispered that the secret of success of certain surgical gentlemen lay in the fact that they "paid commissions" to medical men to divert patients from the direction of the shining lights in the surgical and particularly the college arenas, and this use of money has been characterized as unprofessional, irregular and improper. I will use no stronger terms, as my hope is to appease, not to arouse. The very nature of these practices makes their detection difficult, but there is little doubt that the evil does exist and always has existed, though it is only lately that it has given rise to discussion. If we search the records of antiquity, we recognize that though medicine was practiced by the gods and kings its commercial side was never entirely lost sight of, and the sacred book of Persia contained a fee bill in which the charges varied from receiving a benediction for curing a priest to an ox of the best breed for relieving the heir of a country chief, while the ancient Egyptians before the founding of the school of Alexandria, which might be said to mark the beginning of scientific medicine, allowed certain healers to enjoy a monopoly of the practice; in the reign of Rameses II, an individual was executed for stealing a medical tract from the records of Pharaoh, and ever since there has no doubt been the necessary amount of trading and bartering among us as among all men. "I'll do as much for you as you do for me," however homely the expression, has ever been a universal principle.

This boodle excrescence on the body medical is a non-malignant, heterogeneous hypertrophy, which has become a deformity. Some prominent gentlemen among us have lost their heads about its treatment and by irritation and counter-irritation have produced an ulceration of the outgrowth that has increased its size and rendered it distressing. Like many benign enlargements, it is usually curable; some cases are medical and others surgical, and the symptoms are excessively obscure in the incipiency of the disease. The individuals affected have a forlorn, hang-dog look about them when first afflicted and an uncomfortable feeling of malaise, accompanied by chills and fears, which after proper incubation is replaced by a brazen hue and a cold stare in the established and pronounced form of the disease. It has long existed in the sporadic form, but in late years has become somewhat epidemic. In large and thickly settled communities it affects groups of medical men, guided by a surgical chief, but many smaller towns are absolutely saturated with its pathogenic micro-organism and there is always a virulent outbreak when a metropolitan surgeon comes to the town and operates on a pay patient. The outbreak ends at once if the patient dies, but never completely disappears if the patient recovers.

Neither is the trouble endemic or indigenous to America. It is prevalent in many parts of Europe, but is more restricted there because of the paternal interest which governments take in the profession and its members, by bestowing rank and titles on the deserving, so that the public may know who is who.

Etiologically speaking, it is not difficult to recognize how this commercial taint has lately come to play such a large part in the transactions between physician and patient and between the physician and his fellows. Not more than twenty years ago, modern pathology became sufficiently well established to be recognizable even by the laity as a basis for the intelligent practice of modern medicine and the earnest students of that time, who were sufficiently proficient and possessed the necessary personal qualifications are now enjoying well-deserved prominence. Many men in their prime have seen their progress arrested by this pathologic awakening and many good men, prevented by circumstances from ceasing active work and thus obtaining the time to take up studies on more advanced lines, have been obliged to take second place and have seen younger but more thoroughly drilled men forge ahead of them. Many a venerable and experienced practitioner has to look back to 1880 or thereabouts to note the high-water mark on his ledger. Simultaneously came the activity of the medical school, itself often, and usually, at least in the beginning, a commercial enterprise, and the land became peopled with physicians so that the struggle became still more intense, and then later, not an inconsiderable factor, came the fads, Christian science, Dowieism, faith cures and their ilk, while all this time the great pathologic young Napoleons, specialists in internal medicine, were sitting up nights writing treatises on sanitation and prophylaxis, the questions of modern methods of diagnosis, and the possibilities of the future, but usually winding up with practically an acknowledgment that treatment was not as yet thoroughly successful but that strychnia, nitroglycerin and sustaining remedies were always advisable. Goodness gracious, if antitoxin had not come on the scene how monotonous it would have become!

This is not spoken in derision; I am only trying to depict the position of the good doctors who, by force of circumstance, were halted when the age of the pushing young Vienna man came to pass.

Add to this the cheering knocks of the modern neurologist and the stomach specialist and then take another look at the general practitioner's ledger. Meanwhile, the worst beast of prey of all was leaping along in bounds; it was the surgeon, taking great, big chunks with knife and forceps and scissors, right out of the physician's practice. Said he: "It is appendicitis and needs quick work, but not for you." No more long declines with pain low down: "These ovaries or this womb must out." "That pain below the ribs, 'tis cholecystitis and stones; don't let her vomit so; I'll do a gastroenterostomy." In goes the surgeon, out goes the physician. Quick work; no more lingering cases and fat bills, at least for the physician, who is not young and who never could stop and go to Vienna. Well, they will all turn. They are only men, and like all men driven to bay they will struggle to the end—the eternal struggle of life, and they will take what they can reach and no good man will snarl. This may be allegorical, but it is true.

Times have changed since the reign of Rameses II, and the edicts of Pharaoh are void in this country.

No set of surgeons can long enjoy a monopoly, and it has come to pass that surgeons are jostling each other. The study of that portion of medicine which is called surgery is comparatively plain and, given certain personal characteristics, its practice is reasonably easy. Internal medicine (except to the successful Viennese) is most scantily remunerated; surgery flourishes in a field strewn with gold, and now colleges are practically schools for turning out young surgeons, and many of the commercially inclined schools teach no more medicine than is necessary to pass the state board, while postgraduate schools are institutions where surgical operations are shown at so much a month. Surgeons are, therefore, becoming very numerous and are keenly striving for recognition and a few fleshpots, and the struggles of general practitioners are nothing to what we are to witness in the surgical ring. Already we have the percentage dividing surgeon and the receptive physician. The conditions just outlined and other factors are responsible for their coming. The real study of medicine and surgery, as taught in our best colleges, necessitates such arduous labor that the good students are bound to succeed and can hardly be restrained. Their number is becoming so great, in proportion to the population, that competition is excessive and their desire to become known is so irrepressible that, come what will, and almost unknowingly, they push in paths that lead to the bush instead of the high and only way. If conscience speaks, well, it is business. Hence the commercial atmosphere which surrounds us and threatens to destroy us. The old story, "the self-assertion necessary to the maintenance of society against the state of nature," is carried too far.

Fellow members, in your heart of hearts you know the truth lies in the assertion that the almighty dollar is the prime object in view these latter days, to a greater degree than we of this epoch and our fathers have known, but no more may we add that it is to others outside of our ranks. The whole American nation seems, to the inexperienced mind, to have gone cash mad, and American surgeons to have become tradesmen.

Were this address to stop here it would do the noble members of our body great injustice; still, before filing with you certain statements which are a fitting complement to the rather unsparing criticisms just offered, it seems both logical and becoming to take into consideration the results of our present commercial attitude in its effect on our patients, the more so as this must, in perfect justice, become a major factor in forming proper conclusions.

It is evident that this must to some extent interfere with the efficiency of our service, which for all time has been freely given to rich and poor alike, a sacred pledge, which, it must be acknowledged, has always been faithfully observed by the great mass of our profession; still, it must be admitted that some harm results. This is made manifest in many ways, which I have already mentioned, and all that need be said is that anything that detracts from the ultimate ideal of the true physician's endeavor, namely, the curing and relief of the patient, tends to lower our self-respect and our standing before the community. Yet, in these competitive days, have we not the right, even though we deal with human life and comfort, to look somewhat to our self-protection? To enumerate in detail that part of our subject which refers to individual ways in which commercial ideas may and do interfere with efficiency would not serve our purpose. Enough has been mentioned to show that modern money getting threatens to lower the quality of our goods, and those of you who give this matter the reflection it deserves need not be told how or where, for you all know.

This was a hard address to write and a source of distress to me, and the excuse lies in the thought that it would best be done for the good of us all; that by looking a glaring evil straight in the face we might see our way out creditably before we fall into disrepute. The fault is not ours especially; it is not the physicians only who are reaching out for the pelf, or the power, or the position; it is the preachers and the lawyers and the politicians and the laborers and all the world. It is a part of a universal scramble which is going on in our country, the result of the individualism which unrestrained Americanism and misinterpreted freedom has brought about. We are living in an age of disturbance, with its incident distress, characteristic of evolution or remodeling. There is danger of retrogression unless the mirror is placed before us occasionally. There is no need to become pessimistic, the difficulties will straighten themselves out. In a country with such unrestrained liberty of action as this is, "the insatiable hunger for enjoyment," which must of necessity break out once in a while, will not be allowed to become the agent for destruction of society which some croakers would have us believe; for, though many individuals do not have, the great body has, the conception of justice. In our little medical world, composed of excessively individualized, fearless men, the idea of fairness and the conception of justice is clearly crystallized and, though discussions may and must occur, we eventually come back to the observance of those certain rules of conduct toward one another on which the stability of society depends. Mark, in spite of many of our struggles in the past, how far our organization has progressed, how wide the doors have opened charitably to allow entrance to some who are almost pharisees among us, trusting to the cheering influence of the warmth within to purify them and to fit them for the fold.

Take this matter of commercialism among us—it will settle itself. Decoy traps to catch your brother will only heat the blood. It ill becomes certain men among us, safely ensconced in impregnable positions, to strike so hard on the vulnerable side of a brother who is striving to climb the hill. Better take him by the hand and help him in the ascent. Take this question of division of fees, for example; there is a good deal of it going on, more, probably, than any one knows. It is an undignified procedure and its devotees are not talking much about it, and when covertly charged they change the conversation. The discussion of this matter and of incidents connected with it almost annulled the work of years which had been spent in thoroughly organizing the profession of Chicago. I will go further, at the risk of being anathematized, and ask, "has the practice done so much harm as to call for the most bitter denouncement, and the introduction of punitive measures in our societies and the use of most undignified methods in attempts to abolish it? Does the practice rob the patient or lessen the efficiency of the service he receives? In my opinion it does neither. The practice is undignified, carries its own punishment and will eventually die out, except among a class which will never be reached by either denouncement or punitive resolutions. In some towns it is an established custom, and it is pathetic to witness the struggles made against the importation of a foreign surgeon, by lowering the fees or by offers of division to the attending man. This, again, is an incident in the struggle for existence. Some of these local surgeons are good men, ambitious, striving fellows, well prepared for their work and in every way competent. To see outsiders come and pick the fruit from their own garden walls is more than they can stand, but it is probable that they suffer by their methods and, in a lifetime, lose more than they gain. What about the country practitioner who does not practice surgery—the man who gives hours to the patient and gets dimes, while the surgeon gives minutes and gets gold? I do not know.

Now, I must leave this phase of the commerce of surgery, for I am told by some good friends (none of them make less than $20,000 or $30,000 a year, and who are working harmoniously together in faculty groups) that I am going to hurt myself and fall under suspicion.

Why tarry longer on this unsavory repetition of unpleasant facts known to you all? Following the general trend of our people in the development of excessive egoism we have become commercial to a degree, rather inconsistent with the altruistic characteristic of our calling. From the man who charges $5,000 for aspirating a knee joint or for removing a catarrhal appendix and crucifies the two little fellows who are dividing a $100 fee on the sly for just as good service on a ploughboy, to the one who runs a sanitarium on founders shares, and a salary, we have been losing sight somewhat of the fact that our profession is a quasi-public one, attracting an immense amount of attention, destined to a great future, and that the personality of our membership should not be allowed to deteriorate and that, for the benefit of our society, we should seek to obtain permanency by living in the proper midline between self-assertion and self-restraint. We have little to worry about just now, that is, we surgeons. Business is good and getting better, but let us not forget that good business does not always insure the permanency of prosperity and that there is an ultimate beyond commerce in surgery. It is not our purpose while addressing a special class to charge all others with wrong tendencies, but simply to offer suggestions for reflection. The world is not all bad by a good deal, but on such occasions as this it is proper to point out the swayings of our people in any direction which may seem to indicate retrogression.

The progress of a nation is diversified by movements in which idealism and materialism predominate by turns and just at present in this "age of the hand" and the "rule of the common people," materialism is uppermost and commercial notions prevail. Meanwhile the minority is not idle and restraining influences are at work, which are bound to bring us all back to the middle line. This is the sentiment which has prompted me to address you on this subject. Let us take the highway of progress, drop anarchistic edicts and silence autocratic dictums and punitive regulations. Let us hold before us a rational conception of the future spiritual man and exhibit reasonable discrimination in dealing with such problems as come to us in the discharge of our duties as men and citizens and remember that only "such as are observant, critical and possess great powers of mental representation can adequately discriminate."

Herbert Spencer says:

> Altruism includes justice and beneficence. The first implies sympathetic recognition of others' claims to free activity and the products of activity; the other implies a sympathetic recognition of others' claims to receive aid in the obtainment of these products and in the more effectual carrying out of their lives. The highest sort of life, individual and social, is not achievable under a reign of justice alone; with this must be joined a reign of beneficence. The requirements of equity must be supplemented by the promptings of kindness. The battle of life carried on by competition, even within the bounds set by law, may have a mercilessness akin to the battle of life as carried on by violence. Beyond those limits to the actions of individuals which it is the business of the state to maintain, individuals have to impose on themselves further limits prompted by sympathetic consideration for their struggling fellow-citizens.

I am not here to apologize for prevailing forms of commercialism which tend to degrade our calling, and of which we have spoken. I speak for the future, and bespeak an unbiased, calm decision on the best methods of eradicating or minimizing existing evils. A considerable part of these rightly may be attributed to the course of life of the very men who condemn them so strenuously. In the keen competition of the battle of life they have forgotten that for ethical function equity should be supplemented by kindness. Omission and a lack of perception are not commission. Within the bounds of law they have lost sight of negative beneficence. They often began by being commercial until beyond want and now they are moralists. They hold more positions than they can fill satisfactorily; they perform more operations than they can do full justice to, or of which they can overlook the care; they often oppose the rise of their peers and particularly their superiors on their faculties; they boast of their large fees and their annual income, exciting the cupidity of their fellows, all of which is properly within the law, but is an element in the development of present conditions. Add to that the elements which I have shown and you have the reason for commercialism.

All this writing is a plea for the exercise of negative beneficence on the part of our profession in regard to this whole question. While proved violations of the law of ethical conduct should be given publicity and be visited by just penalty, wholesale denunciations should be decently omitted as tending to disorganize our ranks and doing injury to men whose mistakes have resulted from force of circumstances and surroundings and from the strenuousness of the age in which they live. Let those of us who are successful make it our duty to help others to a firm footing beyond the need of dubious methods. To eradicate impure commercialism entirely may be impossible, as it is founded on man's inheritance of original sin and because reasonable commercialism is an incentive in life, but it is not impossible by harmonious co-operation to cultivate a desire for a higher standard, by combining justice and beneficence. The practice of self-restraint and renunciation is not happiness, though it may be something better.

Paper for Dressings.—Olpp writes from China to the *Münch. med. Wochft.* that he has been very much pleased with the very thin, soft, porous paper made there as an inexpensive substitute for ordinary dressings for wounds. He describes how the paper is made from bamboo pulp, and states that he crushes a sheet into a loose, soft wad, applying as many of these wads as necessary after sterilizing them by baking an ovenful at a time. If the wound is suppurating, he applies a single layer of gauze before packing with the wads. The convalescents crush the paper into the loose wads, giving them something to do and think about. He has also found the ashes of rice or other straw, such as the Japanese use, a valuable material for dressings.

Special Article

IMMUNITY.

CHAPTER XIX.

DIPHTHERIA.

Characteristics of the Organism.

The *Bacillus diphtheriæ*, or Klebs-Loeffler bacillus, was discovered by Klebs in 1883, and more fully described by Loeffler in 1884. It answers all Koch's laws in its relationship to the disease of diphtheria. It is a non-motile, rod-shaped organism having about the length of the tubercle bacillus but twice its thickness. It stains by Gram's method, and with the ordinary anilin dyes, and with the special stain of Neisser shows a peculiar granulation, the granules of Babes-Ernst. It is readily cultivated, especially on solid media which contain serum and in various bouillons. It tends to grow in coherent masses and under the microscope the cells often show a characteristic phalanx-like arrangement. One end commonly presents a flask-like enlargement. It is an obligate parasite having no vegetative existence outside the body. It is very resistant to desiccation and may remain virulent in a dried state for from one to five months. Its life in water varies from a few days to several weeks, having its shortest existence in distilled water and its longest in hydrant water which has been boiled. It disappears more quickly from unboiled hydrant water. It is very susceptible to ordinary antiseptics, being killed in a few minutes by corrosive sublimate even in a dilution of 1 to 10,000.

Pseudo-diphtheria Bacilli.

Bacillus Xerosis.

Microscopically and culturally the bacillus of diphtheria can be distinguished with difficulty from a variety of other organisms which belong to the same group, and which are called pseudodiphtheria bacilli. The latter are frequently found in diphtheritic throats, but occur also in the upper air passages and conjunctiva in the absence of all lesions. On the whole they are non-pathogenic, but occasionally a culture is found which causes a subcutaneous infiltration at the point of injection in an experimental animal. Hamilton cultivated one which was distinctly virulent for animals. Their pathogenicity, however, is altogether different from that of the diphtheria bacillus; diphtheria antitoxin does not protect against them nor do animals which are immunized with pseudodiphtheria bacilli become immune to the toxin of diphtheria. The animal experiment is the only positive means of differentiating the true from the pseudodiphtheria bacilli. Some consider them as nothing more than diphtheria bacilli which have lost their virulence. Biologically, however, they seem to be very far removed from this organism. The *Bacillus xerosis*, which is thought by some to be the cause of xerosis conjunctivæ, but which is also found under normal conditions, is a pseudodiphtheria bacillus.

A knowledge of the existence of these organisms may complicate the diagnosis of diphtheria in some cases, but there is little danger of serious error. If one found organisms resembling the bacillus of diphtheria in a membranous sore throat which was accompanied by severe symptoms, there could be no wavering in the decision to use antitoxin.

Methods of Infection.

The sources of infection may be enumerated as follows: 1. From the false membranes, sputum or excretions of the mouth, pharynx, nose, conjunctiva and deeper respiratory passages of the infected individual. 2. From convalescents and those who have fully recovered, even after serum treatment. Virulent organisms may persist in the pharynx or nose for weeks and months after recovery, in one of Prip's cases for twenty-two months. 3. From the upper air passages of healthy persons who may never have had diphtheria, but who have been in direct or indirect contact with the diseased. Kober obtained virulent bacilli from 8 per cent. of the individuals who had been in direct contact with patients, and he states that 0.83 per cent. of the people at large carry with them virulent organisms. This condition may well account for the "spontaneous" origin of diphtheria in the susceptible. 4. From cases of latent diphtheria as represented in chronic pharyngeal diphtheria and in chronic rhinitis fibrinosa.

Consequently infection takes place chiefly by direct contact, but frequently also by indirect contact. Transmission by kissing or by other means of intimate contact, by using infected cups or toys is well recognized. "Drop infection," i. e., from infected globules of mucus or saliva which the patient emits when speaknig or coughing, may occur, but perhaps is not of great significance. The same probably is true of "dust infection," although, as stated, the organism may remain living and virulent in a dried state for a long time. The disease is rarely transmitted from animals to man, although this may occur from the cat, which occasionally suffers from true diphtheria. The diphtheria of fowls is due to another organism.

The upper air passages, more rarely the conjunctiva, wounds and the vulva, are recognized as infection *atria.*

Pathogenesis.

The local and general phenomena of diphtheria are caused by the soluble toxin which the organism secretes. Although the toxin is not absorbed through, nor does it injure the unbroken skin, it produces necrosis of the mucous surfaces and underlying tissue through which it is absorbed into the lymphatic and blood streams. Through the wounded surface also fibrin-forming elements escape, as a consequence of which successive layers of fibrin are deposited; the fibrin, together with the necrotic surface and the leucocytes and micro-organisms which they contain, constitute the membrane.

Localization of the Bacilli.

Characteristically the bacilli are localized at the site of infection. It is generally stated that diphtheritic bacteriemia rarely occurs, but in one instance bacilli were found in the blood and internal organs in ten out of fourteen cases.

The clinical and anatomic conditions lead us to believe that the parenchymatous organs, the lymphatic tissues and the cells of the nervous system contain receptors with which the toxin unites, for these are the tissues which in particular suffer anatomic injury in the disease. When the toxin is injected subcutaneously into animals localized edema and necrosis occur, hence the connective tissue may also take up a good deal of toxin, diverting it, so to say, from the more vital organs.

Mixed Infections.

Mixed infections, especially with the streptococcus, which, according to Baumgarten, occurs in most cases, render diphtheria a more dangerous disease. Roux and Yersin found that the streptococcus increases the virulence of the diphtheria bacillus both in the test-tube and in animal experiments. Furthermore, the situation may be complicated by a streptococcus septicemia, of which acute nephritis and lobular pneumonia may be the direct consequences (septic diphtheria), and in this condition the diphtheritic infection may fall into the background in importance. Post-diphtheritic suppurations commonly are caused by the pyogenic cocci, but sometimes in association with the diphtheria bacillus itself. Rarely the bacillus is found in pure culture in lobular pneumonia, and Flexner and Anderson produced this condition with the organism in experiment animals. In puerperal infections with the streptococcus a puerperal diphtheria is sometimes superimposed.

Immunity and Susceptibility.

Very young children resist diphtheritic infection. A certain degree of immunity may be transmitted by the mother. Experiments show that when the blood and milk of the mother contain antitoxin, the offspring acquires some protection, which, however, may disappear after the cessation of nursing. Polano claims that antitoxin passes from the mother to the child through the placenta. From the second to the seventh or eighth year children usually are very susceptible. This susceptibility is not uniform, however, for many children escape infection, whereas others do not under the same conditions. Following this period susceptibility decreases and after the fifteenth year cases are relatively rare. The cause of the immunity which develops without infection has not been sufficiently investigated. In some cases considerable amounts of antitoxin are found in the serum, perhaps enough to account for the immunity.

The prolonged presence of bacilli of low virulence in the nose or pharynx, or mild attacks of the disease which have not been recognized may cause the development of antitoxic immunity. As stated in an earlier chapter, the loss of suitable receptors may be a factor in the acquisition of this immunity.

Hypertrophic tonsils and chronic pharyngitis appear to be predisposing causes in children.

Active Immunity.

Spontaneous recovery (active immunity) is due solely to the formation of the specific antitoxin by the tissues of the patient. We may regard the relationship of the leucocytes to diphtheritic infection as not definitely settled. Marked leucocytosis sometimes occurs. Certain observers hold that this condition is an unfavorable prognostic sign, although Besredka and others take the opposite view. An accompanying streptococcus infection may account for a hyperleucocytosis.

The duration of active immunity to diphtheria varies greatly. Usually one has diphtheria but once, yet not infrequently susceptible individuals have repeated attacks. In some instances the susceptibility continues into adult life.

Prophylaxis.

The advent of serum therapy justifies no relaxation in the customary prophylactic measures, such as isolation of the diseased, quarantine and disinfection. A patient should not be considered harmless until his mouth, pharynx and nose are free from bacilli, a condition which may be brought about by antiseptic applications, and for the determination of which repeated bacteriologic examinations are necessary. The danger that others who have been in contact with the patient may carry the infection should be met by appropriate treatment. It is not to be forgotten that antitoxin does not destroy the organisms. The injection of antitoxin is our most effective measure for individual prophylaxis.

Serum Therapy.

The efficacy of diphtheria antitoxin is so well known that litttle comment is needed. It has caused a reduction of more than 50 per cent. in the mortality of the disease; from 41 per cent. to 8 or 9 per cent., according to Baginsky.

For prophylaxis from 500 to 1,000 units are generally recommended, although some foreign authorities give only 250 units. Rarely, individuals who have received such treatment develop diphtheria within twenty-four hours after the injection. In these cases it is probable that infection has already occurred and symptoms appear before the antitoxin is thoroughly distributed. Naturally one may contract diphtheria after the antitoxin is eliminated.

For curative purposes the amount actually required depends on the virulence of the infection and the duration of the disease. Inasmuch as the virulence may not be known accurately, what appears to be an excess of antitoxin is always demanded. Having in mind the average dose of 3,000 units recommended by the forthcoming United States Pharmacopeia, the physician must be guided by the conditions in the individual case. Less than 2,000 units are rarely indicated, and as many as 10,000 and 14,000 units have been given without detriment. There should never be any hesitation about repeating a dose within twenty-four hours in the absence of distinct improvement.

Ransom and Knorr state that if the antitoxin is given intravenously, which may be done without danger, the action of the serum is about eight hours earlier than when given subcutaneously. In severe and in late cases it is advisable to use this method of introduction, the serum first being warmed to the temperature of the body.

It is probable that few cases are so mild or so hopeless, unless moribund, that the omission of antitoxin is justifiable.

Diphtheritic Paralysis.

The belief that antitoxin favors the development of diphtheritic paralysis is no longer held. If there has been an actual increase in the percentage of cases which suffer from paralysis, as sometimes stated, it is because a larger number of severe cases is saved; and the severe cases are those which most frequently develop paralysis. If we accept the view of Ehrlich that a special toxin of weak affinity for the antitoxin, i. e., the toxon, causes the paralysis we find all the more justification for large doses of antitoxin, for antitoxin neutralizes the toxon as well as the toxin. On the basis of experimental work Ransom concludes: "Transferring the results (of experiments) to practice among human beings, we may expect liberal doses of antitoxin given early in the illness to influence favorably the subsequent paralysis; and this favorable influence is likely to manifest itself, not so much in the local paralyses (soft palate, etc.), as in such fatal symptoms as failure of the heart. Severe cases, however, are likely to be followed by some paralysis in spite of even large doses of antitoxin."

Cases in which there is severe mixed infection, septic diphtheria, respond less favorably to antitoxic therapy than uncomplicated cases. At some time a mixed serum therapy suited to the mixed infection may be possible.

The suggestion made by Wasserman of a combined treatment with bactericidal and antitoxic serums has not been applied practically.

Agglutination Test.

Inasmuch as the serum of the patient does not develop agglutinins, the agglutination test is of no value for the recognition of the disease. If animals are immunized with the bacillus, agglutinins are said to be formed. The serum of such an animal may be used for the identification of a culture made from the throat, but this would have no practical value, for the diagnosis may be established by the ordinary bacteriologic methods much more quickly and satisfactorily. It is difficult to obtain a homogeneous suspension of the bacillus for the agglutination test.

Clinical Reports

STRANGULATED FEMORAL HERNIA IN A MAN OF SEVENTY-FIVE.

RESECTION. RECOVERY.

CHARLES S. WHITE, M.D.
House Surgeon Emergency Hospital.
WASHINGTON, D. C.

The following case presents some unusual features that seem worthy of notice:

Patient.—C. P., aged 75, male, white, farmer, widower, born in Virginia.

Family History.—Parents died, after short illness, of cerebral hemorrhages, but at an advanced age. One brother died of intestinal obstruction, one of sunstroke. Two sisters are dead, but cause of death unknown. Of six brothers, five had acquired hernias. None, except this patient, has been operated on. He has a nephew who is ruptured.

Previous History.—The patient has had the usual infectious diseases of childhood. In 1895 he had cellulitis in his arm, following a wound of the hand, and he was disabled for four weeks. In 1898, he had a mild attack of pneumonia. With these exceptions, he has been unusually well, and until the present time he has been doing farm work every day.

Present Illness.—On May 17, about 8 a. m., while lifting heavy logs, he had a sharp, severe pain in the right groin, but worked an hour longer. The pain increased and became unbearable so that he was obliged to return to his home, a distance of six miles, a half a mile of which he walked. He noticed the swelling over Poupart's ligament, and was seen by two physicians between 4 and 6 p. m., but neither was able to reduce the mass by taxis. He vomited once during the afternoon and spent a sleepless night. May 18 he was no better, and he was brought to this city. His bowels did not move any time after the initial pain until after the operation.

Examination.—When admitted to the hospital he was unable to walk and complained of pain in the groin; his pulse 90, full and strong, and temperature 97 F. He had not vomited during the previous twelve hours and was not nauseated. Near the lower attachment of Poupart's ligament there was a tumor about the size of a walnut, tense, not fluctuating and without impulse on coughing. It could not be reduced. The external inguinal ring could be felt and the swelling was below it. The skin was not inflamed. The abdomen was slightly distended.

Operation.—The patient was etherized and an incision about five inches long was made parallel and just below Poupart's ligament. The sac was exposed and was found gangrenous and constricted at Gimbernat's ligament. A knife was introduced on a grooved director and the stricture incised and torn sufficiently to release the hernia. The sac contained about two drams of bloody serum and a knuckle of sphacelated intestine. The abdomen was opened through the right rectus, and one and a half inches of ileum removed and an anastomosis made by a Murphy button. A wedge-shaped piece of omentum was excised. The sac was next transfixed by sutures, snipped off, and the stump returned to the abdominal cavity through the femoral ring. Then a radical operation for femoral hernia was done after the method of Bassini; kangaroo tendon was used for the buried sutures. The abdominal wound was next closed with catgut and silkworm gut. The operation consumed one hour and fifteen minutes.

Result.—The patient made a good recovery, sat up on the twenty-second day and left the hospital one month from the day of admission. The button was passed on the tenth day.

Remarks.—Only a very small percentage of hernias in men are of the femoral variety, and the occurrence of rupture in five of six brothers, while only a coincidence, naturally suggests an inherited weakness. In those cases of strangulated hernia in which the active reflex symptoms, nausea and vomiting, are replaced by a quiet, even painless period, we are sometimes deceived and imagine our patient is better. It is a condition which often precedes a fatal termination, and this can not be emphasized too strongly. The surgeon-general's library contains the report of many cases of femoral hernia with complications, but few in which a resection was done in an older patient than in the case here reported.

TRAUMATISM OF THE RIGHT KIDNEY.*

CHARLES B. DYDE, M.D.

GREELEY, COLO.

History.—G. C. F. came under my care April 28, 1905. Ten days previously he had been kicked by a horse, in the right lumbar region, while at work in a livery barn. During these ten days he had been cared for at Kersey, Colo., where the accident occurred. He was prostrated by the force and shock of the injury and for some days suffered intensely. Six or seven days later, as he was feeling much better, he dressed and walked for a few minutes. This was followed by considerable hemorrhage from the bladder, a slight trace of which was observed the day after the injury. As this complication continued, he was removed to Weld County Hospital, where I first saw him. His previous history presented some interesting and noteworthy points. Three years earlier, while in the United States Navy at Norfolk, Va., he had been operated on for appendicitis. Peritonitis and a fecal fistula developed and posterior drainage was made. Later empyema appeared, and this was also drained. Before the integrity of the bowel was restored he underwent a series of six operations. In a year's time he was restored to health, receiving as a legacy an extensive system of adhesions on his right side from diaphragm to pelvis.

Examination.—He was a young man, aged 23, of good development, well nourished, and when not in pain looked well. His condition at this time was marked by severe pain in the right side of the abdomen and very bloody urine; temperature normal and pulse about 80. The right abdomen was very rigid and slightly swollen. The side on a level with and a little anterior to the quadratus lumborum showed the site of the impact, being still discolored.

Hospital History.—During the ten days succeeding his admittance to the Weld County Hospital he showed some improvement, the urine gradually cleared and the pain diminished. Morphia, of which he had been receiving thus far one to two grains daily, was now gradually omitted. The swelling, external to the adhesions, was slightly increased, and the rigidity remained. At this time of apparent improvement, contrary to instructions, he got out of bed and walked as far as the ward lavatory. This indiscretion was followed by a return of both pain and hemorrhage. The pain was very severe, extending from right kidney to testicle, and intermittent in character. He would lie on his right side, knees doubled up, one hand supporting his scrotum. The urine at this time became so bloody that a catheter was frequently required to relieve the bladder. In consultation with Drs. Church and Hughes it was agreed that the renal colic was due to blood clots passing down the right ureter, and that the tumor was probably a sac of extravasated blood. The advisability of operation was considered at this time, but he was strongly opposed to this, his previous experience giving him a strong distaste for the knife. This condition of pain and hemorrhage continued for several weeks, with occasionally a short amelioration of symptoms. As a rule from one to two grains of morphia were required during the twenty-four hours to control the pain, the amount being gradually increased. By this time he had become thin and very anemic; his appetite was poor and bowels constipated. The tumor was very marked, and the rigidity was extending. The pain while sometimes that of renal colic, was usually a general pain through the abdomen, burning in character, and extending well over to the left side. The temperature presented an occasional rise of a degree or two; the pulse was the same as before, but somewhat weaker. During the first ten days of June, the hemorrhage continuing, his weakness increased, and his condition was rapidly becoming critical. At this time a consultation was held and we decided that operative measures presented the only sign of hope. This conclusion was communicated to him and his consent was obtained.

Operation.—We operated on the morning of June 13, just eight weeks after his injury. Kocher's oblique incision was made, by means of which the kidney may be exposed and, if necessary, removed. After going through the layers of muscle and fascia, instead of perirenal fat or kidney presenting in the wound, we found we had opened a large cavity, which seemed full of blood clots. On removing those most superficial, which were partly organized, we encountered a profuse and active arterial hemorrhage. At this moment the anesthetist, Dr. Weaver, stated that the pulse suddenly increased to 140. Compression controlled the hemorrhage until a number of strips of gauze were tightly packed into the cavity; at the same time strychnin and normal saline solution tided the patient over and prevented death on the table. He lived eighteen hours.

Autopsy.—This revealed what we considered an unusual and remarkable condition. The right kidney, entirely free in the cavity, which contained two quarts of blood clots, was broken into three pieces, retaining not the slightest connection with vein, artery or ureter. We considered that his days had been prolonged by the system of adhesions, which walled off and limited the hemorrhage, and that the gradual stretching and tension of these, as the swelling increased, created a great deal of the abdominal pain.

A PECULIAR CASE—PERHAPS NEURASTHENIA.

WILLIAM HIMMELSBACH, M.D.

SAN FRANCISCO.

History.—Woman, aged 35, single. When I first saw the patient, in June, 1903, her condition was that of a pronounced neurasthenic. There was mental depression, irritability alternating with apathy, pain in neck and along the spine, tremor of the hands, occasional twitching of muscles of the face, and dilated pupils. She had been in bed two weeks. Her previous history was that of a well-balanced, active woman, fond of outdoor recreations of all kinds and passionately devoted to music. Her weight previous to her illness was 135 pounds. Like most neurasthenics, she had an obsession; hers was that food is injurious. From the relatives the following facts were elicited: She had gradually abandoned all her pursuits, complained of tiring easily, and had lost flesh gradually until at my visit she weighed but 85 pounds. There were no indications of an acquired neurasthenia through the usual exciting causes, neither was there any family history that pointed to an inherited neuropathic tendency. Examination of pelvic and other organs was negative.

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* Reported at the Weld County Med. Society, 1905.

Treatment.—No medical treatment was instituted, but, after gaining her complete confidence through various suggestions, she again took up her former pursuits, and within three weeks developed a voracious appetite, accumulating fat at such a rate that in March, 1904 (a period of nine months), she weighed 240 pounds, an increase of 155 pounds, accompanied by an amount of physical energy that was startling. Any attempt to restrain either her appetite or her movements was met with violent opposition.

Subsequent History.—So she remained till June, 1904, when, just as unaccountably, she stopped eating and the adipose tissue visibly melted away, so that in October, four months later, she dropped from 240 to 135 pounds. Her pulse became feeble and rapid, at times almost imperceptible, requiring considerable stimulation. There was likewise an edema of the feet and legs. Examination of urine was negative. She would take to bed for weeks at a time. In January, 1905, her long-lost appetite reappeared and with an increased voraciousness, mostly confined to cereals and milk. The quantities consumed were simply enormous. I have watched her eat for two hours at a stretch, actually shoveling in the food. To-day she again weighs 245 pounds, an increase of 110 pounds in six months, with every prospect of a still further increase in weight, I trust not in appetite. I am daily looking for a "tack" in the opposite direction. Her mind remains clear.

DICEPHALOUS MONSTER.

W. K. WEST, M.D.

CALUMET, MICH.

I wish to record the following case of dicephalus, and the facts bearing on its birth:

The mother was American, aged 28, and a primipara. Her family history was negative. She had several sisters—all married. There have been no other multiple nor abnormal births in the family.

History.—The patient is a pale, slight woman, 5 feet tall, weight 125 pounds. She has always enjoyed fairly good health until this pregnancy, no history of syphilis. She first felt fetal movements in December, 1904. January 2, following, she was taken with a severe attack of the grippe of the gastroenteric form. Vomiting and diarrhea persisted for several weeks, and she was able to take but little nourishment. This was further complicated in the second week by a thrombosis of the left femoral vein. She suffered much pain in the leg, which became very much enlarged from the groin to the foot. The urine showed a trace of albumin, but no casts. The albumin cleared up in a few days, and the urine remained normal. A blood count was made January 27: Reds 3,160,000; whites, 12,000; hemoglobin 60 per cent. She was confined to bed seven weeks and her strength was only partially regained at the time of her labor.

Labor began suddenly on the evening of March 7, and when I was called a few hours later, it was well advanced, with pains frequent and strong. Her temperature and pulse were normal. The fetus was living and active. An examination showed the presentation to be a breech, with one leg well down in the vagina. A diagnosis of the condition was not made until the monster was partly delivered. One head could be felt through the abdominal wall, but on account of the position of the other and the abdominal distention it could not be made out. Under full chloroform anesthesia, the monster was drawn down until the trunk was nearly delivered. Not being able, after considerable effort, to further extract it, I introduced my hand into the uterus and felt the second head and neck. I then carefully introduced a blunt pointed bistoury, and severed the left head, the lowest down. I had no further difficulty in delivering the monster, and the severed head was delivered by pressure over the fundus. The placenta was expressed by the Credé method; hemorrhage was slight. The difficulty in delivery was enhanced by the very small vagina and rigid perineum, and the latter was torn. I removed the patient to the Calumet and Hecla Hospital the following morning and repaired the laceration. Union of the parts was perfect and her convalescence uneventful.

Autopsy.—An autopsy on the monster was made by Drs. Adamson and Sturgeon, who gave me the following notes: Weight, 8 lbs.; length, 40 cm.; sex, male. Measurements of each head, carefully taken, as follows: Left head, antero-posterior, 10 cm.; bi-temporal, 7.75 cm.; occipito-bregma, 8 cm.; occipito-mento, 10.25 cm.. Right head, antero-posterior, 9.25 cm.; bi-temporal, 7.75 cm.; occipito-bregma, 8 cm.; occipito-mento, 10.25 cm.

There were two heads, two necks, two arms, and two legs; two distinct spinal columns throughout, and one sternum. The viscera were as follows: The lungs were single; two hearts of equal size were side by side in one pericardium. There were two stomachs, and the intestinal tract was duplicate to the ileum where the two merged and continued as one to the anus. The liver was apparently single, but there were two gall bladders and two bile ducts, though no connection between them could be demonstrated. The pancreas was duplicated, and there was a single spleen in the abdomen, with a small accessory one in the posterior mediastinum. There were two kidneys considerably larger than normal. The bladder was single, with very thick walls. The genital organs were single. (Fig. 1.)

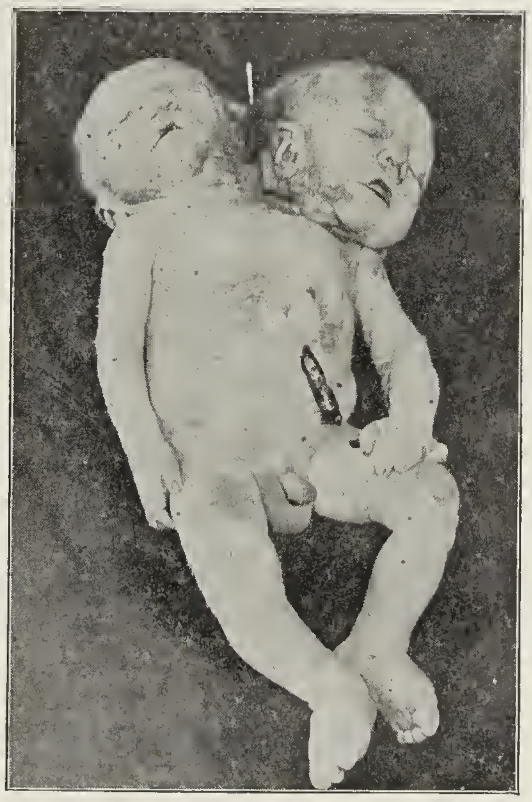

Fig. 1.—This shows the body well proportioned. The left head was sewed on and conceals the neck.

This monster conforms to the species of dicephalus called dicephalus dibrachius dipus. This is the most common form of dicephalus; a number of such cases have been reported, some of them are said to have been adults.

Loyalty to our societies, county, state and national, is among our first duties. Especially is this true of our county societies. In sustaining them we sustain all, for the county society is the unit, just as the town meeting is the unit for our national government.—Williams, in *Jour. Mich. Med. Soc.*

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THE ANNUAL ADDRESSES.

Dr. McMurtry's address, in this issue, reviews the history of the Association, its work in the past and its prospects for the future. What he says about the section work will be approved and his recommendations accepted without question. The advantages of having a permanent secretary of a section are many and obvious, and the honor of holding such an office should be held as greater in proportion to the self-sacrifice and work that it involves. No office is of more importance than that of section secretary in furthering the real scientific work of the session, and the suggestion that the officers of the several sections meet together for the more efficient co-operation in this work needs no indorsement. Its value is sufficiently evident from past experience. The work of organization which has been going on in the last four years is well brought out in the address. The possibilities of this work, he says, are stupendous, and it is as yet only begun, provided that the professional spirit and loyalty to our higher aims which it has brought in evidence are kept alive. It is only by organization that the profession can command the influence and consideration that is its rightful due and which it has often too much neglected in the past. In this connection may be mentioned the timely remarks contained in the address on the subject of medical legislation. The medical profession has not heretofore always recognized its own strength. With a proper organization using its power as it should and backed by an educated public sentiment which we can produce, almost everything in human power is possible to our united profession. The remarks on medical education are to the point. The good work that has been and is being done is not overlooked. What the reforms in medical education owe to the influence of the Association can never perhaps be fully summed up. It is one thing to remember that if any one man's work is to be specially noted in this reform it is that of the founder, or, as he has been called, the father of the Association, who passed from us last year. Dr. McMurtry's remarks on the work of the Council on Pharmacy and Chemistry call perhaps for no special comment here. They will be generally accepted without question as the only correct professional view of the subject. The work is only in its incipiency, but what is being done is, we trust, such as will insure the cordial appreciation and co-operation of the medical profession. We believe it meets one of the greatest needs of the present day. The readers of the address will find subject for thoughtful consideration in every paragraph.

The address on Medicine by Dr. Stockton is a suggestive discussion of some of the problems of a condition that, with the advances of medicine, is becoming more common and perhaps is yet too little regarded. If old age is an evil or a useless period of human life, one way to counteract the evil would be naturally to postpone it by lengthening out the period of full maturity. This. it may be, will be one of the chief tasks to which medical science will devote itself in the near future. While there is so much talk about the possibilities of lengthening human life, one recent enthusiast going so far as almost to prophesy immortality, we certainly would do well to try to insure that this lengthened existence should be tolerable, even if not fully profitable, to the individual and his associates. We certainly do not want a struldbrug element in our population. Dr. Stockton's suggestion of a pedigree, guided limitation as to marriage, his positive expression of opinion as to the non-transmission of acquired characters and his criticism of the individualistic tendencies in our modern civilization may not be considered as altogether practicable or acceptable by every one, but they are certainly proper food for thought. What he says in regard to the preservation of mature vigor by attention to such conditions of correct nutrition as dental hygiene, by the preservation of useful eyesight, and the prevention of intestinal autointoxication as a cause of arterial disease, are useful, and should be fruitful suggestions. Decay seems to be in the order of nature, but if we can amend that order to any great extent without deranging the necessary balance it is an object well worth our efforts.

Dr. Warren's address is a thoroughly scientific contribution that should go far toward clearing up the confusion which he shows still exists in our ideas in regard to a very important class of morbid growths. A correct arrangement of our knowledge is necessary for a perfect understanding of facts, and a confused and over-redundant nomenclature is the expression of a confusion of ideas and a serious drawback in the acquisition of knowledge. Dr. Warren has, therefore, done a real service to the profession and to the vast number of sufferers from non-malignant tumors of the breast. His address can be profitably read by physicians, as well as surgeons. It is one of the clearest and best statements of the subject that has appeared.

The Oration on State Medicine shows a state of affairs very creditable at least to American medical science of the last few years. While we have always had more or less opportunity for the study of exotic tropical disorders, Dr. Blumer points out that we have a special interest in such diseases owing to the tropical and subtropical climates included within the limits of the United States, apart from its outlying possessions. That we have not neglected the opportunities afforded us within the last few years is made by him very apparent. The discovery of the prevalence of uncinariasis in the southern section of our country, the conquest of yellow fever in Cuba, the recent researches on dysentery and its cause, the studies that have cleared up some of the questions of malaria in which American science has taken part, and the active research which is now being carried on are certainly highly creditable to American physicians. As he says, the acquisition of tropical possessions by the United States has had a remarkably stimulating effect on American medicine and has led to valuable work, some of it of the very first rank. Dr. Blumer has well brought out the facts, and we trust that what he has said will be a still further stimulus to active and useful effort.

THE OCCURRENCE OF PNEUMOCOCCI IN SALIVA OF HEALTHY PERSONS.

Pneumococci are said to occur in the saliva of about 20 per cent. of normal individuals. Recently this question has been gone over again and the results obtained appear very interesting.[1] Frost and his co-workers, following the usual method hitherto in vogue, determined the presence of pneumococci by means of inoculations of rabbits. In this way they found the organism 18 times—36 per cent.—in the saliva of 50 different individuals. They also found that the frequency with which the germ occurs in saliva varies with the season of the year: 23 per cent. of the salivas examined in the fall giving positive results, 43 per cent. in the winter, and 50 per cent. in the spring. The pneumococcus also appeared more frequently in the saliva of the individuals in this series who worked indoors than in those working outdoors.

It is very desirable that work of this nature be complemented by work of a different character. In the first place, the occurrence of pneumococci on the tonsils should be studied. It may be that the germs are present more frequently here than in the mouth, which is constantly washed out by saliva, whereas the tonsillar crypts contain many recesses in which streptococci, for instance, are able to exist. In a preliminary communication, G. F. Ruediger[2] notes the occurrence of pneumococci in larger numbers than streptococci on the tonsils in cases of scarlet fever, measles and tonsillitis. His cases are as yet too few, however, to permit any general conclusions.

Then again, methods of demonstration should be used other than the inoculation of rabbits. Manifestly, this method will fail in cases where pneumococci, devoid of virulence for rabbits, are present. Fortunately, we have recently come into possession of an elegant and convenient method for this purpose, namely, the blood-agar plate method of Schottmüller. These plates are made by adding from eight to ten drops of defibrinated rabbit or human blood to each tube of melted glucose agar—about 5 c.c—cooled to 45 degrees C. The streptococci grow as small, grayish colonies, surrounded by clear zones due to laking of the red corpuscles, while pneumococci give somewhat larger colonies, surrounded by an opaque area with a greenish tinge. On account of the characteristic appearance of the pneumococcus colonies on blood agar it does seem reasonable to expect that this method will prove of service in studying the presence of pneumococci in the saliva just as well as on the tonsils. The percentage of persons shown to harbor pneumococci by the blood-agar method might differ materially from that obtained by the more cumbersome and expensive method of inoculating saliva into rabbits, because, in the first instance, the variable faculty of rabbit virulence does not cut any figure so far as demonstrating the presence of pneumococci is concerned, and it may be said that it is as yet doubtful whether rabbit virulence on the part of a pneumococcus necessarily means virulence for human beings.

Consequently, it is desirable to know to what extent pneumococci in general are present in the human mouth and throat. When an adequate basis of facts bearing on this question is accumulated, then the more difficult problem of determining the pathogenic potentialities for man of the pneumococci normally present can be attacked in various ways. Undoubtedly, the various investigations placed on foot by the New York Pneumonia Commission will give us information concerning the points mentioned.

OPEN AIR TREATMENT OF SURGICAL TUBERCULOSIS.

Notwithstanding all the time and attention that have been devoted to the development of the surgery of tuberculous affections, there is probably no other disease with regard to which modern surgeons feel less satisfied. No matter how carefully operations are done, many of them are followed by long-continued suppuration that drains away the vitality of the patient and lessens the hope of ultimate recovery. Often the lesions of surgical tuberculosis occur in children who are least able to withstand this drain on their vitality. Then, too, even under the most favorable conditions serious deformity may occur, and the best results secured by the knife do not compare at all with those obtained by Nature's more conservative method. Unfortunately, under ordinary circumstances, Nature takes so long for the cure of serious tuberculous lesions that confinement, particularly in the hospital, often undermines the general health and not infrequently encourages metastasis of the disease to internal organs.

Physicians and surgeons would be glad to welcome a method of treatment that would obviate these disadvantages, and it seems that it is at hand. Last year the Society for the Improvement of the Condition of the Poor in New York City decided that it could do nothing better than to improve the conditions of living for the children suffering from various forms of surgical tuberculosis in the orthopedic hospitals. Any one familiar with the orthopedic wards of city hospitals knows how pale and delicate and languid the children look and how much they seem to need the outdoor air which their condition apparently prevents them from having. About fifty of the most needy of these children were sent to a seaside resort not far from New York City to live in tents during last summer. The result was almost magical. Children who had been pale and anemic, with capricious appetites and consequent loss of weight, began to eat heartily almost at once; they took on the healthy color that children should have, and very soon this improvement in general health was followed by improvement in tuberculous lesions.

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[1] Frost, Divine and Reineking. Jour. of Infectious Dis., Supplement No. 1, 1905, p. 298.

[2] Trans. Chicago Path. Soc., 1905, vi, p. 299.

In some cases, sinuses that had been open for years began to heal, and experience since has shown the healing to be lasting. At first, there was considerable hesitation as to whether children suffering with open tuberculous lesions should be allowed to bathe freely in salt water and to wade in the sand, since it was feared that these might prove irritant, but sand and salt, far from proving injurious, seemed only to arouse dormant pathologic tissues into an activity that soon caused healthy, enduring cicatrization. At the end of the summer, the results had been so good that it seemed too bad to send the children back to the city hospitals, and so quarters were obtained for them, and they stayed all winter near the sea. During the whole winter, the windows on one side of the building were kept wide open and, though the temperature was often below forty degrees at night, the children slept much better than they would have done in closed warm rooms. It was noted that the starting pains so common among such patients ceased within a few days after their arrival in the open-air quarters.

New York's experience is by no means first in this line. For many years, French authorities in orthopedics have considered that the best possible way to treat children suffering from surgical tuberculosis is by prolonged residence somewhere along the seashore, especially on the north coast. If surgical treatment is necessary, then it should be done there and not in the crowded wards of a city hospital. In France they have come to realize all the evil significance of the state for which they invented the word hospitalization, and to consider that when long continued it represents of itself a serious complication of any affection, especially in children. In this country, too, there have been some very successful experiences with the open-air treatment of tuberculosis, one of the most striking of which is the series of cases reported by Dr. Halstead of Johns Hopkins at the annual meeting of the National Association for the Study and Prevention of Tuberculosis. Dr. Halstead has seen even large abscesses in Pott's disease, in hip-joint disease and in sacroiliac disease disappear under open-air treatment without any auxiliary remedial measures.

It is not alone for the more serious forms of surgical tuberculosis, however, that this method of treatment recommends itself. In the enlargements of the cervical glands, which so often represent a difficult problem for the physician and surgeon, no method of treatment is so hopeful nor associated with fewer disadvantages than that of fresh air and abundant diet, which has now come to be recognized as the only proper therapeutics of pulmonary tuberculosis. According to reports from many quarters, even large masses of cervical glands almost invariably disappear in a few months after the patient begins to live in the open air. This is true not only for the hard, enlarged glands, but also for those in which there is already some tendency to softening and for which the indication might seem to be the evacuation of the contained material. It is only to be expected, however, that if large tuberculous abscesses in the hip and other joints will disappear with improvement of the general condition, then surely small abscesses of the cervical glands may be treated with even more confidence in the same way. In a word, there appears to be opening up a new and very promising field for the treatment of a disease that has hitherto been one of the opprobria of modern medicine.

REINFORCEMENTS IN THE PURE FOOD CRUSADE.

In amplification of its support of the pure-food movement, *Collier's*, in its issue of July 8, throws down the gauntlet to the patent medicine manufacturers. Its editor, Mr. Norman Hapgood, contributes a leading article, "Criminal Newspaper Alliances with Fraud and Poison," and formally announces the engagement of a well-known investigator and writer to expose the methods of manufacture and sale of nostrums and the results of their use by the public. "Probably his first topic will be peruna, that hypocritical cocktail in disguise, so popular with many old ladies." And this reminds us that a recent Chicago newspaper presented the portrait of an elderly woman physician of Buffalo, graduate of a reputable medical school, who contributed a glowing endorsement of peruna. On inquiry, she wrote that the testimonial was genuine and that she had a warm regard for this "hypocritical cocktail in disguise."

Every physician who has not read this issue of *Collier's* should do so, and then should keep it on his waiting-room table for some months, along with the subsequent issues. The *Ladies' Home Journal* was among the first of lay publications to join in the crusade against the nostrums, and no doubt its influence had much to do with bringing the W. C. T. U. to see the inconsistency of endorsing alcoholic nostrums while advocating total abstinence. Mr. Hapgood's article, however, is the most powerful lay contribution to the subject that has yet appeared. In part, it occupies the double page in the middle of *Collier's,* surrounded by a border made up of photographic reproductions of nostrum advertisements cut from leading newspapers. Along with those from some of the "yellow" papers are unpleasant clippings from such moral educators as the New York *Times, Sun,* and *Herald,* the Boston *Transcript* and *Globe,* the Philadelphia *North American,* and the Springfield *Republican.* It is a graphic condemnation of the daily press, and thus far no writer has so keenly exposed the meretricious share of the newspaper in the deadly nostrum traffic. "It sounds high-minded for journalism to bark ferociously against the reign of graft in politics or in high finance, but it can practice a little real reform, if it chooses, by canceling some of the most profitable results of its own limberness of conscience. It hides behind the separation of editorial and business offices, even as members of a corporation hide behind the fictitious entity which they compose. Reform would have greater permanence and value if it sometimes began at home. Hypocrisy is no foundation for spiritual improvement. Newspapers will more successfully reform the world when they have turned against those species of graft which are of peculiar profit to themselves."

Collier's pledges itself to receive no more patent-medicine advertisements, and also to do all it can "to make the public a less easy mark." This trenchant method, supported and maintained, will, with the active co-operation of the medical profession, soon do much toward developing the embryonic journalistic conscience in regard to nostrums. Bryan and Tom Watson are shown guilty, and an almost unbelievable quotation is made from the *Canner and Dried Fruit Packer,* in which packers are urged to withdraw advertising from *Collier's* and publications that advocate the pure-food measure, so that open intimidation is added to the weapons of "fraud and poison."

Lo! these many years we physicians have tried to teach the public that nostrums are harmful. Despite the fact that the use of nostrums tends to increase our professional work, our opposition to the nostrum traffic has always been attributed to jealousy. Now that influential lay journals have espoused our cause, hope revives that the public is to receive a great enlightenment and that the nostrum trade has seen its most profitable day.

GONORRHEAL ARTHRITIS.

In the gradual breaking up of the significance of the word rheumatism which used to prove so satisfactory a designation for so many heterogeneous affections, there is nothing of more interest than the prominent place which is to be assumed among its successors by gonorrheal arthritis. The French have long employed for it the term urethral arthritis, because they consider that there may be affections of the urethra, some of them really secondary complications of gonorrhea, but due to other micro-organisms besides the gonococcus, that may produce metastases to the joints with consequent inflammatory effusion and the typical picture of an arthritis. The French are prone as a nation to be more suspicious of the possibility of venereal complications in apparently innocent affections and are not entirely assured that an arthritis in a particular case may not be of urethral origin unless they are able to determine with certainty that there is, to use their own expressive phrase, no immediate urethral past.

In the reaction that has set in toward ascribing the etiology of many hitherto so-called rheumatic joint affections to the gonococcus, as is usually the case in any new train of thought in medicine, there is a likelihood of exaggeration. There can be no doubt, however, that the gonococcus is responsible for many more joint affections than has been imagined hitherto. It has been stated so often as to be almost accepted as a rule of diagnosis that when the small joints are affected by an inflammatory process, to the exclusion of the larger joints, the affection is very likely to prove to be arthritis deformans rather than any other form of rheumatic ailment. If in conjunction with the small joints, there is an affection of the joints of the cervical vertebræ or of the temporomaxillary joint, then the diagnosis of arthritis deformans is usually supposed to be certain. In some recently reported cases, however, patients suffering from a urethral discharge that had become much less abundant shortly before, have developed symptoms only in the smaller joints and in either the temporomaxillary or in the cervical spinal joints, and the diagnosis has seemed to be without any doubt gonorrheal rather than any other form of arthritis.

On the other hand, it is not an unusual thing for gonorrheal arthritis to confine itself to a single large joint. Until recently, indeed, a monoarticular affection has been considered to be especially suspicious in the matter of urethral origin. Combinations of the large and small joints are not, however, uncommon and gonorrhea may be said to produce all the different combinations of joint affections that were formerly attributed only to acute articular rheumatism. Even so characteristic a picture as that of the redness, swelling and intense painfulness resultant on an arthritis at the base of the great toe, which is usually supposed to be pathognomonic of gout, has been known to develop just after the cessation of a urethral discharge and under circumstances that apparently left no doubt as to the gonorrheal etiology of the metatarsophalangeal arthritis. In a word, any form of arthritis may be due to this micro-organism.

Unfortunately, the prognosis of gonorrheal arthritis is not nearly so favorable as that of acute articular rheumatism and its symptoms do not yield to the ordinary rheumatic remedies. It is much more liable, also, to have serious and even fatal complications because the gonococcus may find a resting place on the heart valves or produce a virulent meningitis. Hence the necessity for exact diagnosis as soon as possible in order that the more serious character of the affection may be recognized early, that measures may be adopted to prevent the migration of the gonococcus from serous membranes which it already occupies, to others where it may produce serious and probably fatal results.

TO EXAMINE A BOARD AS TO ITS SANITY.

The individual who does not correlate his knowledge with his feelings, who sees snakes when there are no snakes, who hears voices when there are no voices, is taken in charge to be examined as to his sanity. A similar procedure may be necessary to determine whether or not a corporation or a board to which is delegated some public duties is acting in accord with ordinary common sense. This variety of impeachment has a charming naiveté. It was suggested by Homer Folks, secretary of the State Charities Aid Association of New York, speaking before the New York Summer School on Philanthropic Work.[1] He referred to some boards whose official acts may be reviewed by higher powers, and suggested the advisability of such authority in the case of many politically managed bodies which mismanage many hospital, philanthropic and asylum matters. The present tendency is to hold the officers of a corporation individually responsible for such acts of the corporation as are under their respective supervision. But when—as in the recent much-criticised ruling concerning the Santa Fé rates—responsible persons are, by some alleged judicial action, relieved of responsibility, the legitimate procedure is to treat the corporation as a person, declare it insane and suspend its functions and compel reformation.

CHOOSING OUR IMMIGRANTS.

Marked changes in our immigration laws are urged by Robert D. Ward.[2] He recommends that the present laws should be more completely enforced, that the head-tax should be raised, and that illiteracy should be more carefully debarred, but we are particularly interested in his further recommendation that immigrants of poor physique should be debarred. Prospective immigrants of unsound mind are now excluded, so too are those of such unsound morals as to be classed as criminals. The next step should be to debar those of poor physique. This term describes immigrants who possess bodies not only ill-adapted to the work necessary to earn bread, but also poorly able to withstand the onslaught of disease. It includes immigrants who are undersized, poorly developed, and with feeble heart action. Such persons are physically degenerate, and as such are not only likely to become undesirable citizens, but are also very likely to transmit their undesirable qualities to their offspring. The average physique of the present American population is not such that we want it to deteriorate; on the contrary, the average might be raised if we selected our immigrants with reference to good physique instead of allowing our steamship companies their present freedom in unloading undesirable foreigners on our shores.

STREAM INFECTION BY CAMPERS.

At a recent meeting of the California State Board of Health it was proposed to forbid camping in the mountains near the sources of streams. It was claimed that it is a common practice for convalescents from infectious disorders, like typhoid, to seek outdoor life for a time, and that they cause infection of the streams. While this proposed restriction was not immediately favorably accepted by the board, it is fully as reasonable as many other sanitary propositions the enforcement of which is attempted. Investigations should be made to learn to what extent the tendency toward rapid destruction of the micro-organisms because of the agitation of the water in mountain streams is offset by the rapid flow, which, of course, will more quickly carry the infective matter to points lower down on the stream. The matter is worth serious consideration.

SPONTANEOUS GENERATION.

The repeated experiments of an English investigator who is said to have produced something like living forms by the action of radium on sterilized bouillon do not appear to us to deserve the importance attributed to them in the public press and elsewhere. It is unfortunate in some respects for the claim that spontaneous generation is possible that all experiments in this line deserving of any consideration whatever are made with already organized matter. The present case is no exception. It is not claimed, moreover, that life has been actually produced, but only that something resembling it or suggesting it resulted in the course of experiments. Radium is a powerful agent in many ways, and it is not remarkable that it can cause changes in even dead organized matter that may at first sight or in some ways simulate life.

THE PORTLAND SESSION.

The fifty-sixth annual session of the American Medical Association has been held during the past week at Portland, Oregon. The distance of the meeting place from the office of publication and the fact that THE JOURNAL goes to press on Wednesday prevent the publication of many details of the session in this issue. We learn, however, by telegraph some particulars from the first two days of the session. The weather was perfect, the sky was clear, and the temperature very comfortable. The attendance proved to be a large one, considering the distance of the meeting place from the centers of membership. On Monday and Tuesday 1,416 members had registered, and, doubtless, 200 or 300 more might be expected to register during the remainder of the session. At the moment of writing, therefore, it is safe for us to predict a registration of 1,600 or 1,700. It will be recalled that the total attendance for each of the last five years has been as follows: 2,019 at Atlantic City in 1900; 1,806 at St. Paul in 1901; 1,425 at Saratoga in 1902; 1,993 at New Orleans in 1903, and 2,890 at Atlantic City in 1904. The real opening of the session was on Monday, July 10, for, as the House of Delegates is the business body of the Association, its first meeting contained the first proceedings of the Association. The House of Delegates met at 10 a. m. Monday, July 10, and prepared for business. Credentials were attended to, the roll was prepared, various committees were appointed, and then the regular reports were received. First came the report of the Secretary, then the report of the Board of Trustees, and following this were the reports of the committees on medical legislation, Rush monument, Walter Reed memorial fund, and medical education. The first general meeting of the Association was held Tuesday, July 11, at the armory of the Oregon National Guard. On Tuesday afternoon the various sections held their first meetings and commenced the discussion of papers. The session is a success and the attendance is excellent. A full report will be given next week.

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[1] Charities, June 24, 1905, page 853.

[2] Ibid., July 8, 1905, page 906.

Medical News

CALIFORNIA.

Medical College Commencement.—The annual commencement exercises of the College of Physicians and Surgeons of Los Angeles were held in that city June 29. There were six graduates. The doctorate address was delivered by the Rev. George A. Gates, D.D., president of Pomona College.

Medical Society Refused Articles of Incorporation.—Several eclectic physicians of California who applied for articles of incorporation for a society entitled "The Medical Society of the State of California" have been refused because another society of that name is already in existence, incorporated in 1870. The state's attorney is reported as saying that the first incorporations of all three state societies were not legal. Accordingly the state homeopathic and eclectic societies have applied for new articles to correct the error, but it is not stated that the regular society has done so.

CONNECTICUT.

Hospital News.—The new St. Vincent's Hospital at Bridgeport was formally opened June 28.——The Danbury Hospital has been voted an appropriation of $5,000 by the senate.——A bill appropriating $420,000 for the Norwich Hospital for the Insane has been signed by Governor Roberts.——The remodeled Meriden Hospital was reopened June 28.

DISTRICT OF COLUMBIA.

Washington.

Tablet to De Schweinitz.—A handsome bronze tablet has been erected in the main hall of the George Washington University to the memory of Dr. E. A. de Schweinitz. The tablet is 2x3 feet in size, with the following inscription:

> Emil A. de Schweinitz, A.B., Ph.D., M.D. Born Jan. 18, 1864. Died Feb. 15, 1904. Professor of Chemistry and Toxicology, 1892-1904. Dean of the Department of Medicine, 1897-1904. In recognition of his services to Medicine and to the Cause of Medical Education, this tablet is affectionately erected by the Medical and Dental Classes of 1904, 1905, 1906, 1907, and by his Colleagues of the Medical and Dental Faculties.

ILLINOIS.

Chicago.

Medical Colleges.—The commencement exercises of Jenner Medical College were held in Handel Hall, June 26. There were 15 graduates. The doctorate address was delivered by Dr. Stuart Johnstone..

Hospital Cornerstone Laid.—The cornerstone of the new Michael Reese Hospital, at Groveland Avenue and Twenty-ninth Street, was laid July 4. The new structure will cost over $500,000, and it is announced that it will be made one of the best appointed hospitals in the world.

Physicians in Wreck.—Drs. Frank Billings, Arthur Dean Bevan, W. A. Pusey, L. L. McArthur, of Chicago; Dr. Meecher of Portage, Wis., with some friends, had a narrow escape from death while traveling in a private car en route to Portland. The accident occurred near Williston, N. D., early on the morning of July 6. The train was the Great Northern flyer. Seven cars were burned and about thirty persons were injured, one seriously.

Health Statistics.—The total number of deaths in Chicago for the week ending July 8 was 420; of these 239 were males and 181 females. Tuberculosis caused 58 deaths, the largest number from any one cause. Causes of death were reported as follows: Bright's disease, 45; acute intestinal diseases, 38; heart diseases, 39; pneumonia and "cancer," 26 each; nervous diseases, 22; violence other than suicide, 33; apoplexy, 5; bronchitis, 4; convulsions, 7; diphtheria, 2; measles, 3; scarlet fever, 1; smallpox, 4; suicide, 7; typhoid fever, 6; unclassified, 85.

MARYLAND.

Baltimore.

Personal.—Dr. Harry F. Reid has gone abroad.——Dr. S. J. Ulman has returned from Europe.——Dr. Ridgley B. Warfield has gone to Europe for two months.——Dr. Christian Deetjen will spend some months in Europe studying Finsen light, radium and x-rays.——Dr. H. Warren Buckler is at the White Sulphur (Va.) Springs as resident physician for the summer.——Dr. Samuel Theobold has taken a cottage at Ocean City, Md., for the summer.——Dr. James Homer Wright (Univ. of Md. 1892), who has made valuable researches in the bacteriology of actinomycosis and aleppo boil in the last year, received the B.S. degree at the recent commencement of Harvard University.

MASSACHUSETTS.

Berkshire District Medical Society.—At the monthly meeting of this society, held at Pittsfield, June 29, Dr. I. S. F. Dodd of that city was elected secretary in place of the late Dr. L. C. Swift, who recently died from meningitis.

Hospital Sued.—Mrs. C. R. Putnam has attached the property of the Massachusetts Homeopathic Hospital, Boston, in a suit for $50,000. She alleges that because of lack of proper treatment while in the hospital she contracted blood poisoning and that her child died.

MISSOURI.

St. Louis.

Personal.—Dr. A. C. Bernays sailed for Europe July 6.

Will Add to Asylum.—A new wing, costing $300,000, will be built on the City Insane Asylum in the fall.

Proposed College Merger.—The Barnes University has offered its buildings and medical school to the State University as its medical department. The offer means donation of buildings in St. Louis to the state.

NEW YORK.

To Avoid Tetanus.—The State Board of Health issued a bulletin on July 1, calling attention to the fact that tetanus frequently followed Fourth of July injuries and urging all physicians who treated persons injured in this way to administer preventive doses of tetanus antitoxin at the time the wounds are dressed. The department believed that many cases of tetanus were prevented last year by this means. Generous supplies of the antitoxin produced in the department laboratory were sent free to local health officers in all the large cities and villages and in many towns.

Resignation of Dr. Pryor.—Announcement is made of the resignation of Dr. John H. Pryor from the superintendency of the New York State Hospital for Incipient Tuberculosis. Dr. John H. Pryor, by his indefatigable efforts in season and out of season to found a hospital by state aid in the Adirondacks for incipent tuberculosis cases, had the confidence of the entire medical body of the Empire state in his worthy efforts. In the short period of his duties as superintendent of the hospital he accomplished much good. Dr. Pryor resigned because his hands were so tied by red tape that it was impossible for him to administer the affairs of the institution with justice to the patients, to the public and to himself. In his words, the reason for his resignation are: "Too many shackles, too much red tape, too many bosses and too much humbug in the administration of civil service affairs in New York state."

New York City.

More Water for Queens.—Work has been begun on important extensions to the city water supply systems for Long Island City and Flushing. The pumping station at Lake Kissena will be connected with the Flushing standpipe.

Heat Prostrations.—The extreme heat of the first few days of this month resulted in a large number of heat prostrations and there were many calls for hospital aid. The new method of ice baths for heat prostrations was put to frequent use.

Floating Hospital.—The *Helen C. Juilliard*, the hospital ship of St. John's Guild, has begun to make daily cruises. Admission tickets are distributed at 1,500 places in the city, including hospitals, dispensaries, diet kitchens and missions.

The Subway Air.—Since the warm weather has made the air of the subway almost intolerable, many suggestions for ventilation have been offered, and two fans have been installed as an experiment. Thus far they have given favorable results.

Home for Nurses.—A plot of ground has been purchased adjoining the Flushing Hospital, Brooklyn, for the sum of $2,500, on which a home for nurses will be erected. Two donors, whose names are withheld, have contributed $1,000 each toward the building expenses.

Independence Day Accidents.—There were only three deaths in New York City as the direct result of Fourth of July celebrations, but more than 200 persons were injured. Of these 176 were sent to hospitals, and about a dozen of them are expected to die as a result of their injuries.

Unlicensed Practitioner Arrested.—Eugene Christian was arrested by the New York County Medical Society on a charge of practicing medicine without proper credentials. He has been advertising in periodicals throughout the country and claimed to cure many ills by putting his patients on a "proteid nut food" which he sold them.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending July 1, 632 cases of measles, with 13 deaths; 418 cases of tuberculosis, with 145 deaths; 235 cases of diphtheria and croup, with 20 deaths; 83 cases of scarlet fever, with 4 deaths; 47 cases of typhoid fever, with 9 deaths; 35 cases of cerebrospinal meningitis, with 22 deaths; 109 cases of varicella and 1 case of smallpox.

City in Good Health.—The death rate in New York City for the first six months of this year was considerably lower than for the corresponding period of 1904. It was nearly as low as the death rate in 1903. For the past six months the death rate was 19.75; for 1904, 22.68, and for 1903, 19.14. For the week ending July 1 the death rate was 18.55, as compared with 21.63 for the same week of 1904.

Personal.—Dr. and Mrs. Charles H. May sailed for Europe on the *Kaiser Wilhelm der Grosse* on July 3.——Dr. and Mrs. F. W. Chamberlain sailed on the *Noordam* for Rotterdam on July 5.——Dr. J. G. Baldwin sailed for Bremen on the *Bremen*, July 6.——Dr. John S. Billings sailed for Queenstown on the *Oceanic* on July 5.——Dr. and Mrs. A. Palmer Dudley sailed for Queenstown on the *Oceanic* on July 5.——Dr. H. P. Loomis sailed for Queenstown on the *Oceanic* on July 5.——Dr. George W. Jacoby sailed on the *Bluecher* for Hamburg on July 6.——Dr. and Mrs. William S. Bull sailed for the Mediterranean on the *Princess Irene* on July 8.

Hospital Boat Near Completion.—The health department will soon possess the most novel craft afloat in the *Claudine*, which will be ready for launching within a few weeks. It will have eight large wards and is also equipped as a fire-fighter and a water boat with tank capacity enough to supply the city institutions on all the islands of the Hudson and East rivers. The cost of the boat will be $70,000. All the rooms will be enclosed in steel, so that they can be shut up for disinfection, and the plan is so contrived that there are no ceiling or floor angles in which dust can accumulate. It is expected that the *Claudine* will be able to maintain a speed of 15 knots and she will be held in readiness to go wherever she may be sent to pick up patients.

The National Antiadulteration League.—The articles of incorporation for this league have been signed and officers elected. The league has been at work for many months making analyses of various foodstuffs sold in the city. By experiments they have established that illness would follow the consumption of some of these articles. They intend sending a petition to the health department, asking that the sale of such articles be forbidden, and they are planning to bring proceedings against the corporations which manufacture and adulterate the articles. The daily papers have intimated that this league had accused the health commissioner of neglect of duty in this direction, but these statements have been contradicted at headquarters and the health board is ready to give its support to the work that the league has set out to accomplish.

"Sanitarium" Raided.—The removal of a large wicker basket in an undertaker's wagon from the house of "Dr." L. Gray Blum, who is a fugitive in South America, led to investigations. The house was, according to the sign, occupied by "Drs." Norman Schenck and Orrin B. Kinney, though it appears that the former is only a fictitious person. Dr. Kinney had the death certificate of the woman whose body was removed in the wagon signed by Dr. George A. Morgan. Both men are graduates of the Vermont University. The coroner stated that the woman had died of peritonitis following a criminal operation. When the detectives arrived to make arrests the house was deserted, patients and attendants having escaped by way of the roof. That the house was a hospital was shown by the drugs, surgical appliances, etc. The coroner held Morgan without bail.

OHIO.

Physician Injured.—On June 26 Dr. J. B. Owsley of Jacksonboro, was slightly injured by being thrown from his buggy.

Physician Arrested for Arson.—Dr. Elmer Bechtol of Lodi has been arrested, charged with setting fire, thirteen years before, to a drug store which he conducted in North Baltimore.

PENNSYLVANIA.

Donation to York Hospital.—It is announced that Mr. and Mrs. A. B. Farquhar have donated $1,000 to the York Hospital. It will be applied to the remodeling of the nurses' home.

Fire in Hospital.—A fire broke out in the storeroom of the Presbyterian Hospital, Allegheny, July 3. Nearly all the patients were removed to places of safety. The blaze, however, was extinguished in a short time and the patients were returned to the building.

Philadelphia.

Bequests.—From the balance of the annuity fund of the estate of Anna H. Wilstach, the hospital of the Protestant Episcopal church receives $6,624.42; the Protestant Episcopal City Mission, for the use of the Home for Consumptives, $6,624.43; the Pennsylvania Hospital, $6,000, and the Howard Hospital, $624.43.

Reading Relief Report.—The statement of the Philadelphia & Reading Relief Association for the month of May shows an expenditure of $19,562.20, of which $9,300 was paid for deaths and $10,262.20 for disability. The number of deaths was 18, 4 of which were accidental and 14 due to natural causes; 1,077 new cases were reported.

Health Report.—During the week ending July 8 there was reported to the Health Bureau a total of 460 deaths, being an increase of 25 over those of last week, and an increase of 22 over the corresponding week of last year. The increase was largely due to the mortality among infants. This alone numbered 110. The principal causes of death were: Typhoid fever, 6; diphtheria, 7; pulmonary tuberculosis, 57; cancer, 22; apoplexy, 21; heart disease, 33; acute respiratory disease, 19; enteritis (under 2 years), 94; enteritis (2 years and over), 7; Bright's disease, 35; accidental injuries, 10; marasmus, 10. There were 167 cases of contagious disease reported, with 15 deaths, as compared with 158 cases and 25 deaths for the previous week.

Personal.—Dr. and Mrs. S. Lewis Zeigler sailed for Europe June 29.——Dr. J. Louis Borsch sailed on the *Kaiser Wilhelm der Grosse* for Europe, July 4.——Dr. and Mrs. J. Oram Ring sailed on the *Bremen* from New York for a three months trip in Europe, July 6.——Dr. Charles P. Grayson sailed for Naples July 5, and will remain abroad until September.——Dr. Mihran K. Kassabian sailed for Europe July 8. Dr. Kassabian has been appointed delegate to represent the American Medical Association, the American Electrotherapeutic Association and the American Roentgen Ray Society at the International Congress of Radiology and Ionization, which will convene in Liege, Belgium, September 12. He also is a representative of the American Electrotherapeutic Association to the International Congress of Physiotherapy, which will meet at the same place, August 12. He will return home in September.

Hospital Reports for June.—The Presbyterian Hospital admitted 200 patients to the wards and treated 1,955 in the various dispensaries. The Charity Hospital treated 628 cases and compounded 756 prescriptions. The Medico-Chirurgical treated 244 patients in the wards and 5,973 patients in the different dispensaries. The Germantown Hospital admitted 92 patients during the month and treated 1,350 in the dispensary. The Mount Sinai Hospital admitted 66 to the wards, treated 1,246 new patients in the dispensary and 2,634 old patients; 239 accidents were treated, making a total of 4,118. The Woman's Hospital admitted 111 patients to the house and treated 1,955 patients in the clinics. St. Agnes' Hospital admitted 191 patients to the house, treated 567 new cases in the dispensary and 1,986 old cases. St. Mary's Hospital admitted 142 to the wards, treated 480 new and 1,567 old patients in the dispensary.

Aftermath of the Fourth.—The accidents and deaths resulting from the celebration of the Fourth of July in this city were less than for a number of years. Two deaths, however, were reported, due directly to the use of explosives. Two probably fatal injuries, several serious accidents and a multitude of minor casualties marked the celebration of the day. One 9-year-old child was killed by the accidental discharge of a revolver and the other fatal accident resulted from the patient being killed in a runaway caused by fireworks. One woman was struck in the eye by a stray bullet; one man was shot in the abdomen while exhibiting his revolver to a friend; one boy received a charge of shot in the face. The approximate number of accidents and the causes gathered from the various hospitals are as follows: By fireworks, 108; by cannon, 7; by firearms, 36; by gunpowder, 289; by toy pistols, 90; by runaways caused by explosives, 4; total, 534.

Railroad Physicians Special Inspectors.—Dr. Samuel G. Dixon, commissioner of health of the state, has appointed all the medical examiners of the Pennsylvania Railroad Voluntary Relief Department, and the Philadelphia & Reading Relief Association, to be special medical inspectors in the department of health for these two railroads. These appointments carry with them no salaries from the state, but the co-operation between the health department and the railroads has been shown to be very advantageous in the prompt and effectual handling of cases of contagious diseases that occur on trains, in the car works or in railroad stations. The following is a list of the examiners of the two roads appointed by Dr. Dixon as inspectors: Pennsylvania Railroad—Dr. Samuel W. Latta, Philadelphia, chief; Drs. D. W. Nead, C. J. Roberts, E. C. Town, J. L. Bower, Reading; J. L. Wright, Columbia; W. T. Bishop, York; S. M. Crawford, Harrisburg; A. T. Poffenberger, Sunbury; H. E. Westhaeffer, Williamsport; J. B. Lincoln, Renovo; S. A. Bonaffon, Erie; R. B. Moore, Huntingdon; H. W. Pownall, Tyrone; W. B. Diffenderfer, Altoona; C. F. Hough, Cresson; C. W. Banks, Derry; D. M. Easter, Youngwood; W. K. T. Sahm, Pittsburg; J. B. Hileman, Pitcairn; J. C. Lemmer, Oil City. Reading Railroad—Dr. Caspar Morris, chief; district No. 1, Philadelphia, Drs. F. E. Brister, Francis F. Ferris, Norris S. McDowell; district No. 2, Reading, Drs. Charles A. F. Detweiler, Albert F. Bronson; district No. 3, Pottsville, Dr. Thomas F. Heebner; district No. 4, Tamaqua, Dr. William H. Brothers.

GENERAL.

Yellow Fever and Malaria in Panama.—Consul-General Lee reports that one of the worst phases of the recent outbreak of yellow fever is that two of those attacked are Jamaican negroes, who are considered racially immune from fever. The disease undoubtedly exists in a particularly virulent form. A short time ago one ward at Ancon Hospital was sufficient to contain suspects; now three wards are necessary to accommodate them. Lee states that besides yellow fever, malaria is exceedingly prevalent; as many as thirty cases a day have been admitted to the hospital. He says that all possible precautions are being taken and that the city of Panama is undergoing another complete fumigation. Had not the sanitary authorities already accomplished such valuable and useful work, the yellow fever situation now, at the beginning of the wet season, would be indeed appalling.

CANADA.

Addition to Hospital.—The Western Hospital, Montreal, is erecting two new wings for the accommodation of 100 and 150 patients, respectively. When completed the hospital will have accommodation for 500 patients.

Personal.—Dr. A. B. MacCallum, professor of physiology in the University of Toronto, has gone to attend the meeting of the British Association in South Africa.——Dr. Walter Langrill, formerly medical health officer of Hamilton, Ont., has been appointed medical superintendent of the Hamilton General Hospital, while Dr. Roberts of Hamilton has been appointed to the position of medical health officer.

Royal Jubilee Hospital, Victoria, B. C.—The annual meeting of this institution was held June 29, when the resident medical officer presented the annual medical report. This showed that during the last hospital year 1,058 patients had been treated in the institution, ten more than for the previous year. The total collective days' stay was 21,307. The cost of maintenance during the year was $36,294.10, a cost per patient per day of $1.70.

Tuberculosis Sanitoria.—A sanatorium for consumptives is to be established at Holland, Man.——British Columbia has established a sanatorium for consumptives at Savona, B. C. For the present it is but a canvas settlement.——The government is to be asked for a substantial grant toward the erection of sanitaria for consumptives in different parts of the dominion.——Mr. McCormack, a prominent manufacturer of London, Ont., has given the National Sanitarium Association $3,500 for the erection of another cottage at Muskoka.

Manitoba Medical College.—The calendar of the Manitoba Medical College now going to press contains three important announcements. First, there is a description of the new building being erected contiguous to the Winnipeg General Hospital, toward the completion of which this season every effort will be made. The five-year course has been adopted, and will come into operation at the next session. The faculty has been reorganized and the following nine practitioners of Winnipeg added thereto: Drs. A. J. Douglas, O. Bjornson, G. Heibert, C. C. Field, W. Rogers, H. Mackay, S. J. Elkin, A. J. Burridge and W. Webster.

Ontario Medical Council.—At the annual meeting of the Ontario Medical Council, held in Toronto last week, Dr. Albert A. Macdonald, Toronto, was elected president; Dr. W. H. Moorhouse, London, Ont., vice-president; Hon. Dr. R. A. Pyne, Toronto, registrar; Dr. H. Wilberforce, Aikens, treasurer. The council decided to ask the Ontario Legislature for an amendment to the Ontario Medical Act, which will prevent Eddyites and other so-called faith healers evading the law on technicalities. The council will also ask aid for consumption sanitaria and the eestablishment of a department of public health for the province. The official prosecutor reported that during the past year 52 cases had been dealt with; 24 convictions had been obtained, 9 had left the country, 11 had been dismissed and 6 had not been proceeded with. An amendment was made in the by-law relating to examiners, as follows: No teacher shall be eligible for appointment as examiner in the subject he teaches, but this restriction shall not apply to teachers of anatomy, physiology and chemistry.

The Toronto General Hospital and Its Opponents.—Representatives of the staffs of the hospitals in Toronto, except the General, called a meeting of the profession of Toronto July 6, to discuss the proposed grant of $200,000 by the City Council to the General Hospital. Opposition melted away when once the terms of the proposed grant were explained by Medical Health Officer Charles Sheard; and the meeting, called in opposition, almost unanimously approved of the scheme of a new general hospital for Toronto. It is proposed that all public ward patients shall be for the purposes of clinical instruction by the staff of the medical faculty of the university exclusively, and that all other accommodation in the hospital shall be equally available to all other practitioners of good standing in the province, and that what is to constitute a public ward patient is one who is unable to pay his medical attendant. Another condition of the grant will be that the board of trustees of the new hospital shall be constituted equally by the Ontario Government and the municipality of Toronto. It has not yet been decided whether a branch hospital will be retained in the east end of the city on the present site of the General Hospital. The new hospital will be situated within a very short distance of the medical buildings of the university.

Organization of the Profession in Canada.—A. Laurandeau has an open letter to the physicians in his district, Joliette, Canada, in the last *Bulletin Méd. de Québec*. The local medical society has established a minimal rate of $2 for fees for maternity cases, and he is urging its general adoption throughout the district. Out of the 56 physicians in the district 23 have adopted it; he received no reply from 17 and 16 stated that they will not accept it. He comments that a physician must rate his work, his knowledge and his intelligence very low who is willing to conduct an obstetric case, with the delivery, application of forceps, etc., and expenses of transportation, for the paltry sum of $1.50. He remarks that these excessively low charges actually bring discredit on the profession in the eyes of the patients. A certain lodge practice was offered to him recently, with fees of 25 cents for visits in towns and of $1 in the country. He declined, saying that he could not accept less than the minimal established tariff, and the lodge at once agreed to his terms. He thinks that if others would take a similar stand the results would be far-reaching throughout the country. The practice of making an annual contract with a family is still in vogue in some places in his district. He knows of instances where families of twelve or fifteen members are treated, under forfeit, for $3 or $4 a year, including even the care of obstetric cases. In conclusion, Laurandeau expresses his amazement that in this age of grouping of interests everywhere, physicians are so slow to recognize the benefits that come from organizing. "Open any daily paper," he remarks, "and what unanimity of effort to obtain better pay and less hours of work! We physicians alone seem to be the only ones who voluntarily condemn ourselves to prolong indefinitely our precarious existence. Our processes are perfected, our equipment more expensive, our intelligence better cultivated, we cure our patients better and quicker than ever before. Is it not reasonble that we should fare better than we used to?" "Friendship, co-operation, devoted fraternity will pay in actual dollars and cents, if nothing else."

FOREIGN.

Russian Hospital Ships.—The Japanese have released two of the three Russian hospital ships recently captured. The third is kept on account of some red tape in regard to some rescued English sailors found on board when the ship was taken.

Medical Aspect of Tercentennial of Don Quixote.—By royal decree the addresses at the medical festival meeting at Madrid in honor of the publication of Don Quixote have been collected and published in book form. The medical aspect of Cervantes' writings and the medical history of his day are thus to be perpetuated. The meeting was one of the features of the general celebration of the tercentennial, mentioned in these columns on page 1789 of the last volume.

French Expert Testimony on the Mental Condition of the Princess Louise of Saxe-Coburg.—Entirely opposite to the testimony of the German and Austrian psychiatrists, Krafft-Ebing, Jolly, Obersteiner and others, the French experts testify that they regard the princess as mentally sound and responsible for her acts. The French psychiatrists were Magnan and Dubuisson. Garnier was on the list, but died a few weeks ago. The patient was under their observation for six months.

Campaign Against Cholera in St. Petersburg.—The local board of health has had about $21,000 placed at its disposal for the impending campaign against cholera. Medical students are to be engaged to keep a constant oversight over houses and buildings known to be in an insanitary condition. Each sanitary inspector is to be supplied with $1,000 for the purpose of equipping and maintaining an eating and tea room in his district, and suitable local quarters for isolation are to be provided.

Free Milk Tickets in Berlin.—The German Association for the Reduction of Infant Mortality has instituted a system of tin checks, each stamped 5 pfennige. Physicians are supplied with these checks to any amount, and they are distributed to indigent mothers, who can obtain for three of the tickets a quart of pure milk at any of the substations of the association. The physicians write the name, residence and date on slips furnished with the tickets. The milk is sold generally for 15 pfennige, less than 4 cents a quart.

Declaration of Infectious Diseases in France.—The number of cases declared in 1902 was 39,234, and in 1904, 67,879, but this is far below the actual number of cases of communicable diseases. The Paris *Académie de Médecine* recently called attention to this discrepancy, and urged the stricter enforcement of the laws in this respect. It also passed a resolution calling for more effectual and compulsory disinfection. The uselessness of attempting sterilization was pointed out by some speakers. Simple, effectual disinfection would not be dreaded so much by the families.

Plague in Japan.—According to the report of Assistant Surgeon Moore in *Public Health Reports,* the plague situation in Tokyo shows no tendency toward amelioration, but that on the contrary new cases are occurring and the number of foci of infection is increasing. From April 18 to May 30, 1905, the total number of cases of the disease reported in Tokyo was 8, of which 6 terminated fatally. In addition there have been one or two doubtful cases. On May 29 a plague death occurred in Chika Ken, the prefecture adjoining Tokyo on the east. The victim had resided in the Fukagawa district of Tokyo, where, no doubt, he contracted the infection.

Official Thyroid Treatment.—Wagner von Jaurегg is a member of the Austrian Board of Public Health and has been making a systematic inquiry into the cases of cretinism in Austria and supplying thyroid treatment for the apparently curable cases. The thyroid tablets are made in the government laboratories at Vienna, and are given to the school teachers in the various localities. They in turn dole out to the parents every week the number of tablets ordered. Recent inquiry in the Trieste district revealed 100 cretin children, 23 of whom were considered curable and treatment was instituted. The results are proving very satisfactory throughout the country.

Women Physicians in Mohammedan Countries.—The government in the French African colonies is advertising for women who are physicians to open dispensaries for the poor Mohammedan women in the towns. The last *Archives Gén. de Méd.* states that the authorities will supply and equip the dispensaries and supply medicines for distribution, and also pay an indemnity of $500 to $600. Dispensaries conducted by men are shunned by the women, as their religion and customs forbid their appearing before any man but their husbands, and yet the women need medical care and advice more than the men. The authorities have found that even when a woman and her husband are both anxious to have her take advantage of the dispensary they are deterred by fear of the general reprobation of such a step.

The Rothschild Endowment at Vienna.—The will of the late Baron Nathaniel v. Rothschild left $5,000,000 to the city of Vienna to be applied to public hospital service. The will stipulated, however, that the income from the endowment should be applied exclusively to the founding and maintaining of institutions in or near Vienna for curable nervous affections—as the clause states, "for the care and cure of the 'borderland' nervous affections, such as are generally called 'nervenkrankheiten.'" The endowment of beds for such patients in the present hospitals is also provided for. The will further states that the institution or institutions to be founded should be modeled closely on the two sanatoria for similar purposes at Rappersmühle, near Göttingen, and at Zehlendorf, near Berlin. Paralytics, tabetics, cases of incurable epilepsy, the insane, etc., are to be excluded.

Sanitary Conditions in Venezuela.—According to *Public Health Reports,* the health condition of Maracaibo is not very satisfactory. There have been three years of extreme drought. For a year there has been no rain, and as there are no rivers and no wells near the city, the condition of the poorer classes is very trying, as they are obliged to use the water of the lake, which is the germ bed of all stomach and intestinal diseases of the people. Formerly there were winds at night, but they have died away. The heat and calms prevailing are the weather conditions for earthquakes. Unfortunately, yellow fever seems to demand more victims. During the last few months the number of cases among people of the higher classes, who are presumed to have healthy homes and comfort, became alarming. A European is more apt to resist the fever and to recover. The people from the Cordilleras are apt to succumb and to die in the course of a few days.

Fine for a Paris Surgeon.—A damage suit which had been brought against a French surgeon, Dr. J. A. Fort, was mentioned in The Journal, Oct. 15, 1904. The complaint stated that he had left a broken instrument in the patient during an operation. The circumstances of the case were that the olive tip of a fine, flexible sound, with which he was striving to dilate a stricture of the esophagus, was broken off by a sudden spasmodic closure of the stricture. As the gastrointestinal tract tolerates much larger foreign bodies than this, Fort regarded the loss of the smooth bulging tip of the sound as of little importance and said nothing about it. The patient died not long afterward, and nothing was found to indicate that the broken part of the sound had caused the slightest irritation. The Paris court, however, when the case came up in June, imposed a fine of $10 for the surgeon's carelessness in omitting to inform the patient or his physician of the accident.

Organization of the Profession in Germany.—The annual meeting of the *Leipziger Verband,* the association formed in the profession to protect the material interests of the physicians of Germany, was held at Strasburg in June. The proceedings of this and of the thirty-third annual *Aerztetag* immediately following were extremely quiet and harmonious, in marked contrast to the stirring meetings of the last two years, when the colleagues in the encroaching grip of the sickness insurance companies were battling for remuneration on a more equitable basis. The particulars of the organization of the *Leipziger Verband* less than five years ago and of its great and immediate success have been duly chronicled in The Journal. At present, as the *Münch. med. Wochft.* expresses it, the physicians of Germany stand at the triumphant and honorable conclusion of serious economic conflicts. As the result of these struggles their material standing is essentially better than it was before. Their economic organization is firm and tried. The outlook into the future, if not entirely peaceful, is yet more hopeful and kindlier than it has ever been. Even the usual official address of welcome by the governor of the state was marked by kindly, unstinted appreciation of the truth and justice of the demands of the profession, and congratulations at their success. The report of the secretary of the *Leipziger Verband* presented an imposing picture of the ramifications of its work throughout the country and the number of physicians assisted to maintain their modest rights by the powerful aid of the voluntary backing of their colleagues.

LONDON LETTER.

Suffocated by a Cat.

An inquest was held in London recently on a child aged one month, who was put to bed at mid-day by a relative. Half an hour later, when she went into the room, she found the cat lying curled up on the child's face. On removing the cat she found that the child was dead. Medical evidence showed that death was due to suffocation and the opinion was expressed that it was due to gradual deprivation of air. It was not supposed that the cat lay on the child's face, but that it was too close to the child and that its fur prevented the child from breathing. The weight of the cat on the infant's chest probably materially assisted in bringing about a fatal termination. The case shows the danger of allowing children to make bedfellows of animals.

Infants Smothered in Bed.

In 1901 1,538 deaths of infants in England and Wales were due to being smothered in bed, and no fewer than 500 of these occurred in London. In 1903 the figure rose to 1,629, of which 600 occurred in London. Dr. Waldo, the coroner for the city of London, said that in his experience few of the cases were due to drunkenness of the parents, but rather to the ignorance or carelessness of the mothers, who did not realize the need of cots. Mr. Butcher, a Lancashire coroner, says that it is probably owing to affection that parents wish to have children in bed with them. He has laid it down as a rule that whenever children die from this cause he will order a post-mortem examination. By this means he hopes to stop the practice.

Infant Murders by Children.

From time to time the country is shocked by the murder of infants by very young children. A recent case which occurred at the Liverpool Working Hospital, shows the danger of leaving infants alone with young children. An infant aged nine months was left asleep in a convalescent ward which contained a number of older children. The nurse was absent for a few minutes and on returning found the infant choking with a piece of bread in her mouth and a scratched and swollen face. A lad aged 5 years had put the bread in her mouth and covered her face with his jacket "for fun." He had also kicked her. Meningitis and pneumonia supervened and death occurred after some days. Nothing abnormal was noticed about the boy who committed the crime and he left the coroner's court in charge of his parents. According to English law, a child under the age of 7 years is considered incapable of committing a crime. If between the age of 7 and 14 it is left to the jury to decide whether or not the offender is conscious of wrongdoing.

Miscellany

Simple Treatment of Hemorrhoids.—It is strange, says the *Medical Standard,* how often patients with big thrombotic piles are sent away from physicians' offices with prescriptions for ointments which seldom relieve them, when it is so easy to inject a little cocain, to split the pile, to turn out the clot and to send the patient home rejoicing.

Avoid Wood Alcohol.—It is always and everywhere dangerous, and there is no warrant for its use or sale for purposes other than as a fuel. The harm it works is generally irremediable, and if it be not used at all, no vain regrets will follow. If physician and druggist will wait on the sanction of authority before employing it, it will soon pass from the market except for use as a fuel.—*Medical Summary.*

Meat Eating.—In the consumption of meat the United States heads all nations. The enormous quantity of 11,000,000,000 pounds of meat—147 pounds to each person—is used here yearly. Of this amount, 5,000,000,000 pounds are beef, 4,000,000,000 pork, and 800,000,000 mutton. Great Britain stands next, with nearly one-third less—100 pounds per inhabitant. Norway uses 80 pounds; France, 77; Spain, 70; Germany, 64; Switzerland, 62; Belgium, 61; Austro-Hungary, 60; Russia, Portugal, and the Netherlands, 50 pounds each; Italy, 24 pounds.—*Good Health.*

The Model Physician.—"Dr. McCormack outlined the work of a model medical society and drew a picture of the model physician, who, he declared, should be the cleanest man in the community, physically and morally; whose home life should be above reproach and an example to his clientele; who, as the representative of his profession, should be well and neatly dressed; whose income should be commensurate with the preparation involved and the sacrifices he must make if he is true to the traditions of his calling."—From the report of an address in the *Johnstown* (Pa.) *Daily Tribune.*

A Medical Law for Alaska.—Efforts will be made at the next session of Congress to secure the passage of a measure, providing for a medical law for Alaska. At present there is no law whatever regulating the practice of medicine in our great northwestern territory. . . . The people of Alaska are entitled to such protection as a good medical law will furnish them—just as much entitled to it as those of any of the states of the Union. There is no reason why a charlatan, with no education or experience, should be allowed to go there among our fellow citizens and risk the lives and health of the people, any more than it should be allowed in the other territories or states of the Union.—*Medical Sentinel.*

Malpractice Two Hundred Years Ago.—A French exchange states that a book published at Amsterdam in 1785 relates that a surgeon opened an artery by mistake in doing venesection on a wealthy patient. She succumbed not long after to the effects of this blunder, but in her will she left the surgeon a small yearly pension "not only to comfort him, but so that he could live the rest of his life without doing venesection any more." A similar occurrence is related in the *Journal Encyclopédique* of Jan. 5, 1772: A Polish princess had had the same experience, and added a clause to her will expressing her forgiveness and leaving the surgeon a small pension to indemnify him for the "loss of reputation that may follow my sad catastrophe." The article is headed: "Other Times, Other Manners," referring to the recent damage suits for comparatively trifling injuries.

Dried Lizards for Chinese Medicine.—The Board of United States General Appraisers at New York had before them, in the matter of protests 138, 283, etc., of Song Chong and others, the question of how dried lizards should be classified for duty. The lizards, dressed and dried, stretched on pieces of bamboo, were imported in pairs, supposed to be a male and female, bound together. It was stated that they were prescribed, together with herbs, by Chinese physicians, the lizards and herbs being cooked together and the broth administered to the patient as a tonic. After consideration, the board is of the opinion that the lizards were not used as medicine, but as one of the ingredients to be cooked with herbs to make a medicine, and that, therefore, notwithstanding they have for many years been classified for duty as Chinese medicine, they are really dutiable as non-enumerated unmanufactured articles.

Parathyroid Treatment for Eclampsia.—Professor Vassale of Modena has been applying in therapeutics the extract of the parathyroid glands. He has found the active principle of the parathyroid glands remarkably efficient in the treatment of puerperal eclampsia. The relations between the thyroid gland and pregnancy have long been studied, and it proved a great disappointment when thyroid treatment failed to display appreciable efficacy in the treatment of puerperal eclampsia. Vassale has taken up the study again, but uses the extract of the parathyroid glands alone. At the Italian Congress of Gynecology, last year, an experimental study was presented on "Thyroparathyroid Insufficiency and Eclampsia," which supplied an experimental foundation for parathyroid treatment. Pestalozza urges its trial on a large scale in the treatment of eclampsia. His editorial on the subject is in the *Gineceologia* for Feb. 28, 1905.

Prognosis of Diabetes.—Lagrange writes to the February *Revue des Mal. de la Nutrition* that if diabetics will practice moderation in all things and cultivate a tranquil mind, the great majority will live the usual span of life and many will surpass it. He has known many diabetics whose urine contained sugar up to the eighties. He knows of a certain gentleman who became diabetic at 50 and died at 91, without ever having restricted himself to any special diet or other measures, except his invariably daily long walk. There are probably legions of other diabetics, he adds, who grow old placidly, unaware of their glycosuria, as they never happened to have their urine examined. The prognosis, therefore, of what is called essential diabetes, that is, not due to some organic lesion, is not so grave as is generally supposed, provided the individual shields himself a little more carefully than the common run of mankind from the accidental causes of disease.

Embalming of Mummies.—The *Semaine Médicale* states that the last number of the *Revue des deux Mondes* contains an article from Professor Lortet of Lyons describing recent discoveries in respect to the embalming of mummies. More than seventy yards of cloth about twelve inches wide were used in wrapping a mummy. This cloth was impregnated with a resinous alkaline solution, to which he attributes the preservation of the tissues. Ten large jars, carefully stoppered, full of a yellowish powder, have been found in a tomb near Thebes. The powder has been analyzed and found to contain an aromatic resinous substance and a large proportion of sodium salts, with some sand and clay. The ingredients of the resinous substance have been further recognized. It is evidently an extract of various aromatic substances, myrrh predominating. Cloth dipped in water in which some of this powder was dissolved presents the same appearance and odor as the cloth in which mummies are wrapped.

Lead Poisoning from Wall Papers During Pregnancy.—Lefour reports the case of a woman, seven months pregnant, who was seized with abdominal pain supposed to be related to her condition. Her husband suffered in the same way, and was advised to have his appendix removed. During an absence from home of some weeks all symptoms subsided, but on her return they reappeared. A miscarriage had already taken place in similar circumstances. A slight blue line was seen on the gums and the wall paper was suspected. The paper of the bedroom contained 23 gr. of lead per square meter, and the papers of two other rooms smaller amounts. On changing the paper and under appropriate treatment the symptoms were relieved. A living child was born at the eighth month, and though delicate seemed likely to live. Lefour examined eleven samples of wall paper taken at random and found nine to contain lead and the other two copper. The quantity of lead varied from 18 to 119 gr. per square meter, the larger amounts being in velvet papers.—*Jour. de Med. et de Chir. Prat.*

Typhoid and Paratyphoid Fever in Tropical Countries.—Marchoux was sent to Senegal on a scientific mission in 1896, and made a special study of these diseases. In an article in the *Revista Med.-Cir. do Brazil*, xiii, No. 1, he states that he found typhoid fever, as it occurs in temperate climates, extremely rare in Senegal. Its place is taken by the paratyphoid infections, and they are usually mild. When typhoid fever is imported it generally assumes a very severe form. In one epidemic from imported typhoid there were 35 deaths among the 170 typhoid patients in the hospital. The paratyphoid affections are very common in tropical countries, and probably include the pseudo-typhoid fevers, the "continuous malarial" fevers and the "mountain typhoid" observed in Brazil. The success of copious irrigation of the intestines in all these affections seems to confirm their intestinal origin, and that the large rather than the small intestine is involved. He was unable to detect any connection between these affections and the drinking water, but in the epidemic of typhoid above mentioned the water-borne source of infection was clearly evident and demonstrated that prophylaxis of typhoid can be effectually realized in the tropics as well as elsewhere.

Not Cured by Eddyism.—Dr. Guest, in a recent discussion before the Louisville Medical and Surgical Society, reported in the *American Practitioner and News*, made the following report to show the part psychology may play in the treatment of hay-fever: "I have a brother-in-law who suffers every summer with hay-fever. He has a relative who believes in Christian Science. She told him that she felt positive that she could direct him to a woman, a Christian Scientist, who could cure him. He at first objected because he hated to go to a woman physician. He arranged, however, to communicate with her daily by letter. When his hay-fever broke out he suffered with it all that day and night, and the next morning wrote her a note telling her to put him on treatment immediately. When he returned that night he felt improved and slept better. He wrote his second note next morning, and was much encouraged. The third day he repeated his letter writing, and stated that the symptoms had almost ceased. The running from the nose had practically ceased, the discharges from the eyes had ceased, and he was guying me about being cured by a Christian Scientist when regular physicians could do nothing for it. The night of the third day, when he came home to supper, he found a note from the Christian Scientist, stating that she had been in the country, and would put him under treatment the next day. Realizing that all his treatment had been only in his imagination, the symptoms reappeared with the same intensity as before. The day following he made arrangements to leave the city for the summer."

Verification of Death.—The injection of a stain into the tissues will decide the question of actual or apparent death with absolute certainty. If the blood is circulating to the slightest extent, the stain will spread throughout the system, while in case of actual death the stains remain localized at the point of the injection. Icard uses fluorescin, and years of experience have confirmed its complete reliability. About 2 gm. or 30 grains of fluorescein, that is, 10 c.c. (ʒiiss) of a 20 per cent. alkaline solution of the stain are more than sufficient to determine the persistence of life in case of merely apparent death. The injection had better be made in the epigastrium or in the flank and the body covered and treated as if still alive. At the end of two hours, if the mucosæ have not turned yellow and the conjunctivæ green, the possibility of persisting life must be abandoned. Icard urges that the bottle of the stain and the syringe should be kept in a box, in charge of the head nurse, to be handed to the interne when he comes to verify the disease. He should make the injection and sign a printed certificate to that effect, mentioning also the other signs of death. The head nurse should sign the certificate below, two hours later, certifying that she had inspected the corpse before it was carried to the morgue, and noted that it was cold and that the mucosæ were not yellow and the eyes not green. Icard pleads that these certificates and the fluorescein test should be required as a matter of course in all hospitals. After two hours of negative response, the necropsy can be undertaken without waiting for signs of putrefaction to appear. Icard has been publishing a series of articles in the latest *Archives Générales de Médecine* on the necessity for more scientific verification of deaths, with the above suggestions for the technic. In a pamphlet recently published he urges the use of this simple and convenient test on the battlefield, as the wounded, in collapse of shock and exhaustion, might be readily assumed to be actually dead and be buried forthwith.

The Great White Plague.—Dr. John B. Huber of New York City, in *Popular Science Monthly*, says: It is with a very real sense of melancholy that one contemplates the long death-roll of those of the world's great men and women who have succumbed untimely to the tubercle bacillus, which is and has been through countless generations by far the most potent of all death-dealing agencies. Had it not been for this detestable parasite, Bastien Le Page might have given us another Joan-of-Arc to feast our eyes on; Rachel might for many years have continued to permeate the spirits of her audiences with the divine fire that was in her. Our navy did well enough in the 1812 war, as all the world knows; but what a rip-roaring time there would have been if John Paul Jones had lived to take a hand in it. We might be reading some more of Stephen Crane's splendid war stories; we might have had some more of Robert Louis Stevenson's delicious lace-work; Schiller might have given us another Song of the Bells; we might have taken another Sentimental Journey with Laurence Sterne; Henry Cuyler Bunner might have continued to delight us, and to touch our hearts; John Keats might have given us another "Endymion." Had the tubercle bacillus permitted, Nevin might have vouchsafed us another "Rosary;" von Weber another "Euryanthe Overture;" Chopin might have dreamed another "First Polonaise;" and the tender flute notes of Sidney Lanier might even now be heard. Maria Constantinovna Bashkirtseff, Zavier Bichat, John Godman, Rene Theophile Hyacinth Laennac, Henry Purcell, John Sterling, Henry Timrod, Artemus Ward, Henry Kirke White, Henry David Thoreau, Baruch Spinoza—such names as these are but a moiety among those of the world's nobility, whose precious lives were cut off in thei rprime by the "Great White Plague."

Food and Feeding.—Few things can be more curious than the change which has been passing over the public mind, in the course of the last few years, with reference to food and feeding. Much has been made from time to time of the tendency to glorify intoxication which rollicks through the pages of Dickens, while it has to some extent escaped notice that his types of character are, as a rule, quite as much given to over-eating as to over-drinking; and that the meals at Manor Farm are as much in evidence as the beverages. Underlying the whole fabric of his fiction is an assured belief that to eat a great deal of food is an action not only meritorious in itself, but certain to be rewarded by good health, high moral tone, and enhanced physical vigor; and it is not too much to say that these were the prevailing convictions of the time in which he lived. The late Sir Henry Thompson, in the interesting volume on "Food and Feeding," which has now passed through many editions, was among the first to insist forcibly on the fact that the amount of food consumed should be diminished in advancing life; and Prof. Clifford Allbutt has lately written to the *Times*, on his return from a tour in America, to say that wholly new ideas about diet are beginning to prevail there, and that American men of science have obtained demonstration of the fact that all food in excess of the actual requirements of the body is a source of weakness instead of a source of strength; nervous force which might be better employed being consumed in its partial digestion and in its ultimate removal from the system. He tells us that this is especially true of nitrogenous material, while hydrocarbons can be burnt off in respiration with comparative facility. It would almost seem as if Nature, in attaching pleasure to the consumption of food, had carried her precautions against starvation to excess, and had ignored the risks incidental to repletion. An inquest was held a week or two since on an omnibus driver who died suddenly after an enormous meal of pork chops, and from no other discoverable cause than gastric distension by food and flatulence which arrested the action of a feeble heart.—*Critic and Guide.*

Poisonous Honey.—In the *New Zealand Medical Journal* for April Dr. E. D. Aubin has described the symptoms of honey poisoning observed in that country, principally in Maoris. As the poison is derived from plants visited by the bees, the symptoms of honey poisoning vary in different countries. In New Zealand only wild honey appears to cause poisoning. The source of the poison is thought to be the yellow flowers of a cress-like plant, the "whauriki," which grows chiefly in swamps. Three modes of onset of symptoms were observed—"gastric," "nervous" and "cerebral." In the gastric form giddiness and nausea are followed by severe and persistent vomiting, which may last off and on for two days. There usually is some abdominal pain. Apparently no irritant action is exerted on the bowels, for diarrhea was never observed. In the nervous mode of onset there are symptoms of irritation of the peripheral nerves—muscular tenderness and pains, and numbness in the arms and legs. Such symptoms are observed in the earlier stages of peripheral neuritis and in mussel poisoning. The cerebral mode of onset is illustrated by the case of a Maori who dropped down in a fit and became unconscious, and fits recurred at intervals. Delirium may be the first symptom. In severe cases the gastric, nervous and cerebral symptoms are usually combined, one set predominating. The characteristic symptom of honey poisoning is the epileptiform attack. It differs in no way from an ordinary epileptic fit and may be preceded by a cry. After the attack the patient may be quiet and may sleep or may be restless and delirious. In severe cases the fits recur and the patient is unconscious between them. In some cases a condition resembling the status epilepticus is induced and may be fatal.

Association News

THE PORTLAND SESSION.

Good Weather and a Fairly Large Attendance at the Fifty-Sixth Annual Session.

[By Special Telegram from Portland.]

The weather is perfect, warm and clear. The attendance is large, the registration on Monday and Tuesday totaled 1,416.

[Note: The total registration at Atlantic City in 1900 was 2019; at St. Paul in 1901, 1,806; at Saratoga in 1902, 1,425; at New Orleans in 1903, 1,993; at Atlantic City in 1904, 2,890.—Ed.]

The President's Address.

The first General Meeting was held Tuesday, July 11, at 11 a. m., in the Armory of the Oregon National Guard. The retiring president, Dr. John H. Musser, Philadelphia, called the meeting to order and made an introductory address. Addresses of welcome were delivered by Hon. M. C. George, representing the state of Oregon; Dr. Harry Lane, mayor of the city of Portland, and Dr. George F. Wilson, representing the Oregon State Medical Society. Dr. Lewis S. McMurtry, Louisville, Ky., president of the association, gave his address on "The American Medical Association; Its Origin, Progress and Purpose," which is printed in full on pages 145-149 of this issue.

House of Delegates.

The first meeting of the House of Delegates was called to order at 10 a. m., Monday, July 10. After organization and preparation of the list of delegates in attendance, various committees were appointed, and then formal business was begun. The detailed minutes will be published next week.

Officers Elected.

[By Telegram Thursday.]

The following officers were elected:

[The President for 1905-6 is Dr. L. S. McMurtry, Louisville, Ky., elected in 1904.]

President-Elect, Dr. William J. Mayo, Rochester, Minn.

First Vice-President, Surgeon-General Walter Wyman, Washington, D. C.

Second Vice-President, Dr. K. A. J. Mackenzie, Portland, Ore.

Third Vice-President, Dr. Eugene S. Talbot, Chicago.

Fourth Vice-President, Dr. Edwin D. Martin, New Orleans.

General Secretary, Dr. George H. Simmons, Chicago.

Treasurer, Dr. Frank Billings, Chicago.

Correspondence

Yeast in Tuberculosis—A Claim to Priority.

Buffalo, N. Y., July 3, 1905.

To the Editor:—In a recent article by Huggard and Marland, in the *Lancet*, June 3, 1905, the action of yeast in tuberculosis and its influence on the opsonic index, they state that they have made observations on the influence, if any, of yeast, taken internally, on tuberculosis. They selected cases, chronic in nature, in which the patient had either "stuck in the mud" or was losing ground. A number of cases which were going downhill were also included in the observation. The results in some cases were striking, in others encouraging, in others almost *nil.* "In most cases the downward course either became less rapid or was arrested, and the stationary cases improved, etc." A good account of the article appeared in abstract in The Journal July 1, 1905, p. 75. In reading the original article I was struck with the absence of any reference to my previous communications on this subject. In a communication appearing in The Journal, A. M. A., 1901, I urged the use of brewers yeast in large doses in cases of tuberculosis, and in a paper, "Brewers Yeast in Therapeutics," published in *American Medicine*, October, 1902, I review the entire subject of "Brewers Yeast" with reference to its therapeutic application and cited four cases in which brewers yeast was used with satisfactory results. Since this time I have used fresh brewers yeast in all cases of tuberculosis, in private practice and in the wards of the German Hospital, and believe, as I did, and as amply verified in the paper of Huggard and Marland that brewers yeast is a valuable remedy in cases of tuberculosis. Brewers yeast has proved itself, if anything, even more gratifying in its results in a number of cases of bronchopneumonia where resolution of the lung and convalescence was too prolonged. By giving it in large doses of from two to three ounces three times a day resolution has been hastened, and the patients have improved in weight and strength.

Julius Ullman.

400 Franklin street.

Expulsion of Placenta Before Birth of Child.

Chicago, July 4, 1905.

To the Editor:—Relevant to the inquiry of Dr. Butt in The Journal, July 1, page 60, I would say that I was called on June 15 by a midwife to a case in which the third stage of labor had preceded the second, the placenta having been delivered about half an hour before my arrival. The os was the size of a silver dollar, with a right sacro-anterior presentation of the fetus. The woman's pulse was 90, small. She was pale and weak, but her condition was not alarming. Hemorrhage had ceased. In about forty minutes she expelled, unassisted, an exsanguinated male fetus, apparently at term. The midwife was reticent as to the history of the case and her connection with it, but I gathered from the husband, who could speak little or no English, that there had been hemorrhages for some weeks prior to the woman's confinement. She had had four children, all living, of whom the births had been normal. So far as known she made an uneventful recovery.

H. A. Haskell, M.D.

Goodrich, N. D., July 6, 1905.

To the Editor:—As expulsion of placenta before that of child seems rather uncommon, the following may be interesting: The patient was seen Aug. 5, 1904. Miss ——, primipara, white, aged 22, had taken some drug (probably ergot), to produce abortion. This had produced severe pains and some hemorrhage. On examination the placenta was plainly visible at vulva; there was a very foul odor. With patient under anesthesia the placenta and then a six-months fetus were delivered manually. The position of placenta before contractions of uterus was not known.

C. E. McReynolds, M.D.

Submucous Resection of Deflected Nasal Septa.

Toledo, Ohio, July 6, 1905.

To the Editor:—In my article on the above subject in The Journal, July 1, 1905, through an inadvertence on my part a foot note says: "Read before the American Laryngological Association at Toledo, Ohio." This was an error for which I offer my apologies. It should have stated, "Read before the middle section of the American Laryngological, Rhinological and Otological Society at Toledo, Ohio, Feb. 24, 1905." By kindly publishing this letter you will greatly oblige.

Francis W. Alter, M.D.

Marriages

Alvin B. Snyder, M.D., to Miss Elizabeth Sinclair, both of Chicago, June 26.

Philip Rovno, M.D., to Miss Panna Julia Starotto, both of Philadelphia, June 25.

Thomas G. Harris, M.D., to Miss Dora Bailey, both of Camder, W. Va., June 13.

John F. Sloan, M.D., Peoria, Ill., to Miss Sarah McDonald of Brimfield, Ill., June 24.

Harry C. Buell, M.D., to Miss Anna Augusta Faber, both of Canandaigua, N. Y., June 27.

Clarence K. Dengler, M.D., to Miss Edna May Crotsly, both of Philadelphia, June 28.

Nancy A. Rodger, M.D., Menominee, Mich, and Rev. Chenoyeth of Toronto, Ont., June 21.

Thomas A. Speidel, M.D., Felicity, Ohio, to Miss Helen Dimmitt of Batavia, Ohio, June 27.

Otho August Fiedler, M.D., Milwaukee, to Miss Elizabeth Morris of Sheboygan, Wis., June 28.

Hans Zinsset, M.D., to Miss Ruby Kunz, both of New York City, at Lake Mohegan, June 29.

William H. Reedy, M.D., Towanda, Ill., to Miss Nellie Fincham of Bloomington, Ill., June 29.

James W. Squires, M.D., Churubusco, Ind., to Miss Margaret Snyder of New Era, Ind., June 28.

Thomas M. Aderhold, M.D., Zeigler, Ill., to Miss Mae Sinieka of Chicago, at Du Quoin, Ill., June 21.

Henry Journeay Welles, M.D., to Miss Elizabeth M. Jones, both of Minneapolis, Minn., June 28.

Benjamin Hall Searing, M.D., New York City, and Miss Helene Stuckle of Montclair, N. J., June 29.

John W. Young, M.D., Fort Wayne, Ind., to Miss Ida Rhea of Frankford, Ind., at Nattawa, Mich., June 23.

Floyd Sweetland Clarke, M.D., Le Mars, Iowa, to Miss Emma Louise Cannon of Sioux City, Iowa, June 21.

Deaths

William C. Tyree. M.D. Kansas City (Mo.) Medical College, 1876, ex-president and professor of ophthalmology and otology in the Kansas City Medical College; oculist and aurist to St. Margaret's, St. Joseph's and Scarritt Hospitals, Kansas City; member of the city council from 1902 to 1904; president of the Kansas City Academy of Medicine in 1891; died at El Paso, Texas, June 23, from tuberculosis, after an illness of eighteen months, aged 51. The active pallbearers at the funeral were members of the faculty of Kansas City Medical College. The board of aldermen, directors of the Kansas City Medical College and Kansas City Academy of Medicine adopted resolutions deploring Dr. Tyree's death.

Pascal H. Sawyer, M.D. Cleveland Medical College, 1850, one of the oldest and most prominent physicians of Cleveland; for a long time a member of the faculty of the medical department of the University of Wooster, Cleveland, died in St. Anthony's Hospital, Cleveland, June 26, from pneumonia, aged 68.

William H. Vincent, M.D. University of Buffalo (N. Y.) Medical Department, 1881, for several years a member of the board of supervisors of Cattaragus County, N. Y., died at his home in Hinsdale, N. Y., June 12, after a protracted illness, aged 51.

John Allen, M.D. Medical College of Ohio, Cincinnati, 1882, referee of the Kentucky State Board of Health for Kenton County, died at his home in Covington July 1, from spinal meningitis, after an illness of ten days, aged 48.

Charles Steinert, M.D. Berlin (Germany) Medical College, 1859, of Pittsburg, died at the home of his daughter in Waynesburg, Pa., June 26, from pneumonia, after an illness of two days, aged 65.

Isaac L. Lynch, M.D. Kentucky School of Medicine, Louisville, 1895, died at his home, Jolly Station, Breckenridge County, Ky., June 29, from tuberculosis, after a long illness, aged 36.

C. P. Gray, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1881, of Lowry City, Mo., died at the home of his daughter in Leesville, Mo., June 20, after an illness of two years.

George Eger, M.D. Medical College of Ohio, Cincinnati, 1894, bacteriologist to St. Francis' Hospital, Cincinnati, died at his home in that city June 30, after a short illness, aged 34.

Otto B. Hicklin, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1876, died at his home in New London, Mo., June 28, after a protracted illness, aged 71.

William C. Weed, M.D. Buffalo, 1891, died at his home in North Coshocton, N. Y., June 27, after an illness of nine months, from nephritis, aged 59.

J. S. Bradley, M.D. Missouri Medical College, St. Louis, 1879, died at his home in Frankford, Mo., June 27, from disease of the liver.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

ISTHMIAN CANAL SERVICE.

Several correspondents ask whom to address for full information regarding positions in the medical service on the Panama Canal. They should address the Isthmian Canal Commission, Washington, D. C. A large number of details concerning the service were published in THE JOURNAL, Dec. 17, 1904, page 1881.

DR. JAPHETH SILAS BOYER WANTED.

DR. H. C. KERRICK, Brocton, Ill., wants the address of Dr. Japheth Silas Boyer, last heard from at Floriston, Nev., who graduated at Rush Medical College, Chicago, 1893.

WANTED: CASE OF AIR EMBOLISM DURING UTERINE PACKING.

DR. JOSEPH B. DE LEE, 34 Washington Street, Chicago, would like to know if there has occurred, in the practice of any of the readers of THE JOURNAL, an authentic case of air embolism, during the application of a uterine packing, either by means of the tubular packer or the uterine packing forceps, and at any time of the puerperal state.

State Boards of Registration

COMING EXAMINATIONS.

California State Board of Medical Examiners, San Francisco and Los Angeles, Cal., July 19. Secretary, C. L. Tisdale, San Francisco.

State Board of Health of Illinois, the Great Northern Hotel, Chicago, July 19-21. Secretary, J. A. Eagan, Springfield.

State Board of Health of West Virginia, Charleston, W. Va., July 18-20. Secretary, H. A. Barbee, Point Pleasant.

Nebraska State Board of Health, State House, Lincoln, Neb., August 9-10. Secretary, Geo. H. Brash, Beatrice.

Kansas April Report.—Dr. George F. Johnston, Lakin, reports the written examination held at Kansas City April 25-27, 1905. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 108, of whom 97 passed and 11 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Rush Med. Coll	(1904)	83
Kansas City Med. Coll. (1905). the grade of 76 was reached by one, 77 by three, 78 by four, 79 by three, 80 by seven, 82 by one, 81 by one, 83 by three. 86 and 87 by one each.		
Central Med. Coll., St. Joseph	(1905)	81, 78, 81, 79
University Med. Coll., Kansas City, Mo. (1905), the grade of 76 was reached by one, 77 by three, 78 by five, 79 by five, 80 by five, 81 by three, 82 by two, 84 by one, 85 by three.		
Homeopathic Med. Coll., Kansas City Mo	(1900)	77
Beaumont Med. Coll.,	(1898) 78, (1905)	79
Ensworth Med. Coll	(1905)	78, 79, 80
Medico-Chirurgical Med. Coll., Kansas City Mo.,	(1905)	76, 80, 80, 77, 81, 81.
University of Louisville	(1897) 75, (1904)	78
Louisville Med. Coll	(1898)	80
Hahnemann Med. Coll., Chicago	(1876)	76
Kansas Med. Coll., Topeka, (1905), the grades of 75, 77 and 78 were reached by one each; 79 was reached by two; 80 by four, 81 by two, 83, 84, 85 and 87 were reached by one each.		
Eclectic Med. Inst., Cincinnati	(1905)	78, 80
Eclectic Med. Univ., Kansas City, Mo	(1905)	76
University of Nashville	(1904)	79
Ohio Med. Coll	(1904)	79
College of P. & S., Kansas City, Kan	(1905)	80, 82
College of P. & S., St. Louis	(1905)	80

FAILED.

College of P. & S., Keokuk	(1895)	74
Ensworth Med. Coll	(1904)	73
Central Med. Coll	(1905)	73
Eclectic Med. Univ	(1905)	70
Ohio Med. Coll	(1903)	74
Northwestern University	(1897)	72
Hahnemann Med. Coll., Chicago	(1890)	73
Medico-Chirurgical Coll., Philadelphia	(1892)	70
Barnes Med. Coll	(1896)	71
Missouri Med. Coll	(1900)	74
Gross Med. Coll	(1902)	72

The general average attained by all representatives of the Kansas City Medical College who passed was 80.4; of University Medical College, 79.5: of the Medico-Chirurgical Medical College of Kansas City, 79.1; of the Kansas Medical College, 80.6.

Minnesota June Report.—Dr. C. J. Ringnell, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at St. Paul, June 6-8, 1905. The number of subjects examined in was 12; total number of questions asked, 95; percentage required to pass, 75. The total number of applicants examined was 105, of whom 83 passed and 22 failed. The following colleges were represented:

PASSED.

University of Minnesota (1905), the grade of 79.1 was reached by three; 80.1, by three; 80.5, by two; 81.1, by five; 81.4, by two; 83, by three; 83.6, by two; 84.4, by two; 84.5, by two; 83.7, by three. The grades of 76.4, 76.9, 77.2, 77.6, 77.9, 78, 78.1, 78.7, 78.8, 78.9, 79.4, 79.5, 79.6, 79.7, 79.9, 80.2, 80.8, 82.8 82.2, 82.9, 83.2, 83.5, 83.8, 84.2,, 84.3, 84.7, 84.9, 85, 85.2, 85.6, 85.4, 86 and 86.1, were attained by one each.		
Hamline University (1903) 83.2; (1905) 83.6, 75.1, 80.1, 85.6, 82.4, 83.2, 83.1.		
Northwestern University	(1905)	90.2, 82.2, 84.8, 89.5.
Rush Med. Coll. (1901) 86.2; (1903) 86.3; (1904) 80.6, 82.4; (1905) 81.7.		
Johns Hopkins University	(1900)	86.2
College of P. and S., Chicago	(1897)	86.6
University of Toronto	(1905)	84.5
Creighton Med. Coll.	(1904)	82.5

FAILED.

University of Minnesota (1905) 71.1, 76.5,* 73.4, 76.2,* 74.3, 76.9,* 73.9, 75.8,* 75.6.*		
Hamline University. (1904) 69.7, 68.6, 69.5, 65.2;	(1905)	71.6
Kentucky School of Med.	(1893)	59.1
Kansas City Med. Coll.	(1905)	74.6
Milwaukee Med. Coll.	(1905)	66.5
Hahnemann Med. Coll. Chicago..... (1902) 71.9;	(1905)	75*
College of P. and S., Chicago	(1904)	69
Keokuk Med. Coll.	(1905)	64.5
Barnes Med. Coll.	(1897)	35.5

*The board did not grant a certificate because of low marks in the principal branches.

The general average attained by all representatives of the University of Minnesota who passed was 79; of Hamline University, 82.3.

Pennsylvania June Examination.—The examinations of the State Medical Examining Board were held in Philadelphia, Pittsburg and Harrisburg, June 27-30. Three hundred and twenty-nine candidates presented themselves for examination in Philadelphia and 121 in Pittsburg, making a total of 450. Two of the Philadelphia candidates were expelled for "cribbing." Fifty-six homeopathie candidates were also examined, and 18 candidates for the eclectic school were examined in Harrisburg. The applicants taking examinations in Philadelphia represented over eight states and nearly a dozen foreign countries. The following questions were asked:

PRACTICE.

1. Describe the symptoms indicative of intestinal perforation in typhoid fever and the treatment.
2. State the period of incubation, the day on which the exanthem usually appears. the symptoms, complications and period of infection of scarlatina, its relative degree of contagiousness and the means by which its spread occurs.
3. Describe the physical signs of mitral stenosis and explain what are its effects and how these effects are caused.
4. Give the causes and symptoms of ascites and tell how to recognize by what disease it is produced.
5. If summoned to a middle-aged person, discovered in a comatose condition, explain how to recognize on what disease the condition depends, and give the treatment for the uremic type of coma.

THERAPEUTICS.

1. Describe various methods for the reduction of hyperpyrexia, giving the rationale of each, and direct the treatment when due to sunstroke and to acute inflammatory rheumatism.
2. Explain how vascular tension is decreased and increased and what the conditions are when it should be respectively diminished or increased.
3. Give the symptoms and treatment of strychnin poisoning and name the disease to which it is similar, and tell how to distinguish one from the other.
4. Explain the principles governing the treatment of convulsions when due to a toxic agent in the blood; cite two conditions, and give their respective treatments.
5. State several conditions in which the bromids are indicated and explain how to administer large doses and cause the least general disturbance.

DIAGNOSIS.

1. State of what diagnostic import is the stool and cite three examples.
2. Diagnosticate infantile spinal paralysis.
3. Diagnosticate the so-called interstitial nephritis.
4. Differentiate carcinoma of the stomach and gastric ulcer.
5. Differentiate acute pneumonia and acute exudative pluritis.

HYGIENE.

1. Discuss the dangers proceeding from an impure water supply.
2. Describe the best methods for the disposal of excreta and sewage.
3. What hygienic measures should be recommended to prevent constipation?
4. What diseases of animals are communicable to man?
5. Discuss the general principles of ventilation.

ANATOMY.

1. Give a description of the brachial plexus and name five of its branches.
2. Describe the pyloric orifice of the stomach and give its topography.
3. Describe the frontal bone, including its articulations and sinus.

4. Locate the openings in the walls of the abdomen and give the important structures in relation therewith.
5. Describe the bladder in either sex, including its ligaments and relations and give its nerve supply.
6. Describe the pancreas and give its topography, outlet, nerve and blood supply.
7. Describe the hyoid bone and the muscles attached to it.
8. Describe the pharynx, its structure, boundaries, openings, nerve and arterial supply.
9. Name, locate and describe the ductless glands of the body.
10. Give the origin, course and topography of the ureters.

PHYSIOLOGY.

1. What is accomplished physiologically by the portal circulation?
2. Describe how, respectively, the intracranial arterial and venous blood pressure are regulated.
3. Describe the pulse mechanism.
4. State the source, composition and physiologic action of the gastric juice.
5. Give the functions of the trigeminal nerve.

PATHOLOGY.

1. Describe the structural changes of prostatic hypertrophy.
2. Describe the pathologic changes in disease of the vermiform appendix.
3. Give the pathologic condition characteristic of necrosis and caries of bone.
4. Describe the structural changes characteristic of the various types of hepatic cirrhosis.
5. Describe the changes in tissue in two forms of nasopharyngeal catarrh.

SURGERY.

1. Describe any one of the dislocations of the head of the femur and a method of reduction.
2. State how to determine the point of obstruction in ileus.
3. Describe the treatment for penetrating gunshot wounds of the abdomen.
4. Describe ligation of the brachial artery at its middle third and give the collateral circulation.
5. Describe the operation for suppurative mastoiditis.
6. Outline the general principles for the treatment of fracture of bones.
7. Give the symptoms and treatment for concussion of the spinal cord.
8. State the advantages and disadvantages of the various forms of suture materials.
9. Enumerate the symptoms respectively of cerebral concussion and compression and outline the treatment of each.
10. What are the indications for operative treatment in any form of hernia.

OBSTETRICS.

1. Describe true and false labor pains and give the treatment for the latter.
2. In the albuminuria of pregnancy what treatment should be instituted to prevent eclampsia and avoid premature delivery?
3. What are the causes of retained placenta, and the treatment for each?
4. What are the essential conditions requiring the forceps, and what precautions are necessary during their use?
5. Describe an effective method to prevent rupture of the perineum during labor.
6. What precautions are necessary to prevent infection of the baby's eyes at birth and what is the treatment of ophthalmia neonatorum?
7. Enumerate the symptoms which indicate the death of the child, *in utero,* and state what course should be pursued in such a condition.
8. Give the mechanism of delivery in a left mento-anterior position.
9. State the causes and give the treatment of asphyxia neonatorum.
10. What are the symptoms of syphilis in the newly born child?

CHEMISTRY.

1. Give the chemical composition of the blood and state to what its coagulation is due.
2. Describe a test for diacetic acid.
3. Describe the properties and uses of boric acid.
4. State the chemical antidote for arsenic and write directions for its immediate preparation.
5. Describe a reliable test for the determination of glycosuria.

MATERIA MEDICA.

1. (a) What is salicin; (b) from what derived; (c) action and uses?
2. Define a tincture, an extract, an infusion, a triturate and an emulsion, giving an example of each.
3. Give the name of the active principle derived from a cardiac stimulant, a vasomotor depressant and a cerebral excitant.
4. State the composition of the following preparations and give the proper officinal name for each: Fowler's solution, Lugol's solution, Donovan's solution, Basham's mixture and Brown mixture.
5. Write two prescriptions, each containing one of the mercurial chlorids and give the dose and proper method of administration.

Wyoming June Report.—Dr. S. B. Miller, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Cheyenne, June 7-8, 1905. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of applicants examined was 9, including one osteopath, all of whom passed. The following colleges were represented:

College.	Year Grad.	Per Cent.
Jefferson Med. Coll.	(1904)	77.9
University of Colorado	(1904)	79.8
Omaha Med. Coll.	(1898)	79.9
University of Nebraska	(1905)	78.8
Miami Med. Coll.	(1897)	81
University of Minn., Homeo. Dept.	(1904) (1897)	89.2 91.4
Denver Homeo. Med. Coll.	(1905)	86.3

Reciprocity Can Not All Be on One Side.—At the annual meeting of the State Board of Medical Examiners of New Jersey, held at Long Branch, N. J., July 5, the following resolution was adopted:

WHEREAS, The educational and examining standards for the medical license of New Jersey are at least equal in all respects to those of New York, and in some respects higher, and

WHEREAS, The degree of unreasonableness in the matter of interstate endorsement on the part of New York can not be further ignored; therefore, be it

Resolved, That on and after October 16, the date of the next regular meeting of this board, the endorsement of medical licenses issued by New York will be suspended until further notice.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers U. S. Army, week ending July 8, 1905:

Rich, Edwin W., asst.-surgeon, ordered to Depot of Recruits and Casuals, Angel Island, Cal., pending repairs to transport *Thomas.*

Comegys, E. T., deputy surgeon general, retired from active service.

Little, Wm. L., asst.-surgeon, granted two months' leave of absence.

Steer, Samuel L., asst.-surgeon, relieved from duty at Army and Navy General Hospital, Hot Springs, Ark., and ordered to Fort Assinniboine, Mont., for duty. Granted two months' sick leave of absence.

Cox, Walter, asst.-surgeon, relieved from duty at Fort Banks, Mass., and ordered to Fort Reno, O. T., for duty.

Ford, Joseph H., asst.-surgeon, relieved from duty at Fort Reno, O. T., and ordered to sail from San Francisco, Sept. 30, 1905, for duty in Philippine Islands.

Ford, Joseph H., asst.-surgeon, authorized on arrival at San Francisco, en route to Philippine Islands for duty, to enter Army General Hospital, Presidio of San Francisco, for observation and treatment.

Lyster, Wm. J. L., asst.-surgeon, relieved from duty at Presidio of San Francisco, and ordered to Fort McIntosh, Texas, for duty.

Webber, Henry A., asst.-surgeon, relieved from duty at Fort Walla Walla, Washington, and ordered to Fort Banks, Mass., for duty.

Jones, Percy L., asst.-surgeon, ordered, in addition to his duties at Fort Preble, Me., to assume also the duty of examiner of recruits and attending surgeon to the recruiting party at Portland, Me.

Gibson, Robert J., surgeon, leave of absence extended three months

Reynolds, F. P., surgeon, ordered to proceed to Vancouver Barracks, Washington, for temporary duty as chief surgeon, Department of Columbia.

Brechemin, Louis, deputy surgeon general, promoted to lieutenant colonel, deputy surgeon general.

Hogue, Gustavus, I., contract surgeon, left Fort McDowell, Cal., for his home at North Lake, Wis., for annulment of contract.

Carpenter, Alden, dental surgeon, arrived at Fort Stevens, Ore., for temporary duty.

Jones, George H., contract surgeon, granted leave of absence for three months, fifteen days.

Davis, Oscar F., contract surgeon, returned from temporary duty at Fort Screven, Ga., to his proper station, Fort DeSoto, Florida.

Slater, Ernest F., contract surgeon, left Fort Hancock, N. J., on leave of absence for one month and sixteen days, with permission to go beyond sea.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending July 1:

Dennis, J. B., surgeon, detached from Bureau of Medicine and Surgery and ordered to Navy Yard, Pensacola, Fla.

Fiske, C. N., P. A. surgeon, detached from Naval Medical School, Washington, D. C., June 27, and ordered to the *Marblehead.*

Guest, M. S., surgeon, detached from the *Lancaster* and ordered to the Naval Training Station, Newport, R. I., with additional duty on the *Constellation.*

Wieber, F. W. F., surgeon, ordered to Navy Yard, Pensacola, Fla., and to additional duty in command of the Naval Hospital at that yard.

Von Wedekind, L. L., surgeon, detached from the Naval Training Station, Newport, R. I., and ordered to the *Lancaster.*

Shiffert, H. O., P. A. surgeon, detached from duty under instruction at Naval Medical School, Washington, D. C., and ordered to the Naval Hospital, Philadelphia.

Tolfree, H. M., P. A. surgeon, detached from duty under instruction at Naval Medical School, Washington, D. C., and ordered to the Navy Yard, Norfolk, Va.

Iden, J. H., P. A. surgeon, orders of June 21 modified; ordered to Naval Hospital, Newport, R. I.

Bell, W. H., detached from duty with the Marine Detachment on the Isthmus of Panama and ordered to the *Dixie.*

Angwin, W. A., asst.-surgeon, detached from the Naval Academy, and ordered to the *Massachusetts.*

Hoen, W. S., asst.-surgeon, detached from the *Marblehead* and ordered to the *Chicago.*

McClanahan, R. K., asst.-surgeon, discharged from treatment at the General Hospital, Fort Bayard, N. M., and ordered to the Naval Recruiting Station, Baltimore.

Brown, E. M., asst.-surgeon, detached from the *Chicago,* and ordered to the Navy Yard, Mare Island, Cal.

McMurdo, P. P., acting asst.-surgeon, detached from the Naval Recruiting Station, Baltimore, granted leave of absence for one month and ordered then to wait orders.

Spear, R., surgeon, detached from the Naval Hospital, Washington, D. C., and ordered to St. Petersburg, Russia, for special duty in connection with the naval medical and sanitary features of the Russo-Japanese war.

Wright, B. L., P. A. surgeon, detached from the Naval Hospital, Pensacola, Fla., and ordered home to wait orders.

Michels, R. H., asst.-surgeon, detached from the *Wilmington* and ordered home via the *Lawton*.

Strine, H. F., asst.-surgeon, detached from the *Barry* and ordered home via the *Lawton*.

Griebe, C. C., asst.-surgeon, detached from the Naval Station, Guam, and ordered to the *Oregon*.

Strite, G. E., asst.-surgeon, detached from the *Lawton* and ordered to the Torpedo Boat Flotilla, with station on the *Barry*.

Stoops, R. E., asst.-surgeon, detached from the *Lawton* and ordered to the Naval Station, Olongapo, P. I.

Owens, W. D., asst.-surgeon, detached from the *Lawton* and ordered to the *Villalobos*.

CHANGES FOR THE WEEK ENDING JULY 8, 1905.

Garton, W. M., P. A. surgeon, ordered to the Naval Hospital, Washington, D. C., for duty.

Murphy, J. F., asst.-surgeon, ordered to duty at the Marine Recruiting Station, Buffalo, N. Y.

Shaw, H., asst.-surgeon, ordered to the Naval Recruiting Station, Boston.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending July 5, 1905:

Blue, Rupert, P. A. surgeon, granted extension of leave of absence for seven days.

Currie, D. H., P. A. surgeon, granted leave of absence for two months, from July 6.

Bean, L. C., acting asst.-surgeon, granted leave of absence for twenty days, from July 1.

Smyth, F. R., acting asst.-surgeon, granted leave of absence for twenty days, from July 10.

Thomas, J. G., acting asst.-surgeon, granted leave of absence for 30 days, from July 1.

Society Proceedings

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting of the North Branch, held May 16, 1905.

Dr. Ben Hirsch in the Chair.

A paper on "Dangers of the Domestic Use of Illuminating Gas and the Means of Avoiding Them" was read by Dr. Henry Leffman, which has been published in The Journal, June 3, 1905.

The Medicolegal Relations of Gas Poisoning.

Dr. M. L. Coplin referred first to the chronic gas poisoning, of which a great deal is seen on the continent, but very little here. He cited as two forms of this condition, combination with the hemoglobin and combination with the cells of the central nervous system, which very closely resembles the condition seen in tetanus poisoning. After describing in detail the conditions existing in these cases, he stated that the exact process was still unknown, but that doubtless in the chronic cases it was attributable to pathologic resistlessness and inability of the patient to build himself up; he referred to the fact that it had been demonstrated that there was an increase of arsenic in the body. He cited a number of cases in which death was caused by the inhalation of the gas, and discussed the medicolegal questions which have been raised in several important cases, particularly where related to life insurance contracts, among which was one in which the question as to whether the death was accidental or not was raised, one instance being that of a man who had previously suffered from angina pectoris. He then considered in detail the rubber tubing, automatic heating apparatus, etc. He also raised the point as to whether the changes seen in the blood were due to the inhalation of the gas, or were postmortem changes.

The General Characteristics of Gas Poisoning as Seen in Philadelphia.

Dr. William S. Wadsworth, coroner's physician, reported a personal experience he had had when a medical student by being almost overcome with furnace gas, and stated that it was a very easy matter for serious results to be produced. Although he recognized the dangers resulting from the use of rubber tubing for connecting gas lights, he felt that the public would not tolerate too radical measures in regard thereto, and that probably the most that would be borne would be regulation of the length of the tubing, and the requirement that a fairly good quality be used. He referred to the more common employment of water gas at the present time, and the dangers thereof, and contrasted them in detail with those from coal gas. He called particular attention to the increasing number of deaths from this cause during the last few years, the most marked being in murder and suicide. Defective fixtures and apparatus were cited as fertile causes of the accidental cases, particularly stoves in which there is insufficient combustion. The pathologic conditions were outlined in detail, prominent among which are a puffy pink appearance of the skin and in extreme cases a carmine tint, and there is a tendency to rather rapid decomposition.

DISCUSSION.

Mr. William McDevitt, inspector of the Fire Underwriters' Association, stated that fires had so frequently occurred by reason of defective rubber tubing connections, that the inspectors would not now pass stoves connected in this manner. He felt that the public should be carefully educated concerning this danger and suggested as the most appropriate persons to see that this is accomplished are the officials of the companies selling the gas stoves. He called attention to the escape of gas from the heater, oftentimes due to an undetected crack in the firepot, and also to the danger of fire arising from a very small, unsuspected opening in the gas-pipe in the cellar.

Mr. Washington Devereux, another of the inspectors of the Fire Underwriters' Association, directed attention to the poor quality of the tubing used for connecting drop lights with the gas fixtures. He then stated that there was very great danger of the automatic electric lighting gas burners becoming leaky, especially those operated by a push button, a slight jar, such as walking over the floor, being sometimes sufficient to turn them on.

Dr. Samuel Wolfe reminded the society of the liability of accidents arising through slot meters by the gas becoming exhausted and going out automatically, and then being turned on again by the mere putting of a coin in the slot, some of the burners being open.

Dr. J. Thompson Schell related a case of this nature.

Regular Meeting of the South Branch, held May 26, 1905.

Dr. L. J. Hammond in the Chair.

Dr. S. C. Runkle reported a case for diagnosis.

The Summer Diarrheas in Children.

Dr. J. P. Crozier Griffith cited statistics showing the mortality in early life. During the first year it is 18.33 per cent in the European states, and in the registration area in the United States 18.28 per cent., nearly one-quarter of which are due to diarrhea. In European countries the greatest mortality occurs during the cold months, while in this country it is just the converse. The causes assigned are: 1, hot weather; 2, artificial feeding; 3, bacteria. He cited statistics showing that by far the greater number of deaths occurred in bottle-fed babies, being mainly due to the difference in the composition of the milk, and to the fact that even though the milk has been sterilized or pasteurized, the germs may be removed thereby, but the poison resulting from the germs has not. The treatment should depend on the form of the diarrhea and the length of its duration. He considered the different forms under the head of acute dyspeptic diarrhea, milk poisoning, cholera infantum and enterocolitis. The treatment he classified under four headings—starving, washing, resting and healing. He recommended that the child be put on barley water until the vomiting and diarrhea ceased. In order to remove the poisonous matter, if early, washing out the stomach; if later, the washing out of the intestinal canal by means of purgatives, etc., is of value. Food should not be given until the symptoms subside and then the best results will be secured by starting off with a cereal treated with malt. Of the remedies having a healing effect bismuth was especially mentioned.

DISCUSSION.

Dr. John S. Pearson said that the difficulty of treatment of these cases increased in proportion with the length of time the condition had been present. He commented on the value of rest, bismuth, and the substitution of goat's milk for cow's milk. He has secured good results from nitrate of silver when there was positive inflammation of the mucous membrane of the bowel.

Dr. John B. Turner suggested the value of egg albumin as a food for these patients.

Dr. William S. Higbee referred to the fact that the number of cases of these conditions had decreased very much during the last ten years, probably due to improved sanitary conditions and diet. He rarely gives fractional doses of calomel, preferring to give one or two grains, to be followed by a dose of castor oil. In the treatment of the second stage of the condition he recommended bismuth; in severe cases opium and regulation of the diet.

Dr. S. C. Runkle emphasized the value of bismuth and expressed the belief that the reason it failed in many cases was because too small doses were given.

Dr. Griffith stated that he would not hesitate to give morphia, hypodermically, for a state of collapse in cholera infantum, and that he considered 1/100 of a grain a very moderate dose for a child one year old. He reviewed the serum treatment and stated that as yet the results were not very encouraging and that diarrhea from other causes than dysentery would occur.

Uses and Abuses of the Free Dispensary.

Dr. R. O. Kevin cited four classes of patients as improperly frequenting the institutions: 1. People who can, but do not want to pay. 2. People not knowing a specialist, but desiring a specialist's opinion without paying a specialist's fees. 3. Sufferers from alcohol and other habits. 4. Hypochondriacs, who try to find relief from real or fancied wrongs. He emphasized that those concerned in the management should use their best endeavors to exclude unworthy patients.

DISCUSSION.

Dr. W. S. Higbee felt that the chief in charge of the clinic should guard carefully the character of the patients that are admitted for treatment, and should refuse to treat those who were not proper subjects.

Dr. J. P. Crozier Griffith stated that he believed in some instances the abuse was due to a too ardent desire on the part of the physician in charge of the clinic to have a large dispensary roll.

Dr. S. C. Runkle felt that the fault was not alone with either the general practitioner or the specialist, and believed that it would be to a certain extent remedied if the specialist would have more moderate charges for those recommended by their attending physician as unable to pay full fees.

Regular Meeting of the Kensington Branch, held May 9, 1905.

Dr. J. C. Chestnut in the Chair.

Excision of the Spinal Accessory Nerve for Torticollis.

Dr. William H. Morrison reported cases and exhibited the patients, the first being a girl 11 years of age, who two years ago was taken with a stiff neck, apparently an ordinary attack of rheumatic torticollis, involving the right sternocleido muscle. Treatment by the salicylates, iodids and the various nerve sedatives, such as bromids, belladonna and cannibis indica was without avail and the muscle remained in a state of intense tonic spasm, being relieved only under ether. A tenotomy of the sternocleido mastoid was done, but without relief, and in January, 1904, three-quarters of an inch of the spinal-accessory nerve was excised. An anterior incision was made along the anterior upper border of the muscle, being careful to avoid the internal jugular vein. The wound healed without complications and now fifteen months later, the child is able to rotate the head in all directions.

Nasal Saddleback Deformity Treated by Paraffin Injections.

The second case, shown by Dr. Morrison, was one of paraffin injection to correct saddleback deformity of the nose, in a boy about 12 or 14 years of age, resulting from a blow on the nose, displacing the nasal septum. About six months after the accident, Dr. Morrison operated on the septum by making a stellate incision by means of forceps and straightening and holding the septum in position by means of a nasal splint until it could heal, and, after healing, the bridge of the nose was built up by means of subcutaneous injection of paraffin. He stated that the paraffin should be mixed with white vaselin to bring it down to a melting point of from 110 to 115 degrees F. The paraffin may be injected in a semisolid state by means of a metal syringe, under which circumstances he thought there was less danger of producing embolism of the central retinal artery or gangrene of the skin than by using it melted to a liquid state.

DISCUSSION.

Dr. J. Coles Brick referred to the fact that the melting point of paraffin was given from 110 to 140 degrees F., and stated that when he had requested paraffin made with a melting point of 110 to 115, the chemist had informed him that a foreign substance could not be mixed with the paraffin, and that any substance that was added for the purpose of reducing the melting point would merely be melted out and the paraffin would remain intact. He stated that he now used the paraffin in a solid form by means of a piston syringe with a ratchet arrangement, which prevented the possibility of extravasation into the tissues.

Treatment of Hemorrhoids by the General Practitioner.

Dr. Collier F. Martin dealt particularly with methods of diagnosis and treatment suitable for employment by the general practitioner, and expressed the belief that the majority of patients can be completely and satisfactorily cured with a minor operation under nitrous oxid. He deprecated the practice of taking the patient's word for it that there was some rectal condition present and ordering ointments or suppositories, and advised routine examination in all cases. For the successful handling of this condition, he believed that the physician must train himself to make the diagnosis from the symptomatology and careful local examination. Numerous instruments are not required, as the majority of cases can be diagnosed by inspection and digital examination, the speculum being useful to confirm the diagnosis and in cases of ulceration and catarrh of the sigmoid flexure, a proctoscope may be necessary. He stated that the character of the speculum was largely a matter of personal preference and that he used a small conical one. He then took up the etiology and the classification of the condition, citing as the two causes, obstruction and infection, the former either mechanical or anatomic, and the infection being usually attributable to the lymphatics, although in external cases, it might be of outward origin.

The treatment, he stated, should be directed (1) to the removal of the congestion, and (2) to the removal of the tumor, and for the former divulsion of the sphincter alone will often accomplish the result. The different methods of operation, particularly injection, ligature and clamp and cautery were gone into in detail, the first he considered applicable for those cases who would not submit to an anesthetic, while for those who were willing to do so, he preferred the clamp and cautery to the ligature. External hemorrhoids are very often cured by divulsion of the sphincter under nitrous oxid gas, while for internal venous hemorrhoids the best results are secured by injection, when general anesthesia is refused.

DISCUSSION.

Dr. J. Coles Brick emphasized the importance of digital examination of all cases of rectal trouble, citing as illustrative of the omission to do so, a case in which a fishbone near the anus had been found, and referred to the reflex symptoms cited by Dr. Hilton, i. e., pain in the left leg as an indication of rectal trouble. The careful routine examination of the coccyx was also recommended and the value of divulsion of the sphincter commented on favorably. The injection method he viewed as an excellent plan of treatment in the hands of an experienced operator, but questioned the advisability of its employment by the general practitioner, and stated that the carbolic acid solution employed should not be stronger than 50 per cent.

DR. A. G. BAKER believed that each case must necessarily possess a certain amount of individuality and the treatment to some extent be governed accordingly. For the purposes of examination he considered a bivalve speculum best that has one valve fenestrated and the other solid. In the removal of piles by the injection method, he felt that the best results were secured by the injection of two or three drops of pure carbolic acid. He stated that he had secured good results with external piles by the use of an ointment of ten grains of morphia, one dram of carbonate of lead, and one ounce of unguent stramonium. For internal piles was recommended the use of about equal parts of cream of tartar and sulphur taken internally.

DR. WILLIAM H. MORRISON stated that the diagnosis must rest entirely on visual and digital examination. As illustrative of the importance of care in making such examination he cited the case of a young woman, whose condition had been cited as hemorrhoids, when it was really a small anal fissure, which was promptly cured under appropriate treatment. Another case diagnosed as hemorrhoids proved to be cancer of the rectum; another case which was diagnosed as hemorrhoids, digital examination proved to be due to a large splinter of wood. In regard to the treatment, he stated that he had always secured good results with the ligature, which was the only form he had ever employed.

DR. FRANKLIN BRADY had also been limited in his experience to the ligature operation, but believed the injection method to be of great value in the hands of the experienced operator.

DR. MARTIN recommended for the injection method a 50 per cent. solution of phenol, preceded a few days before by divulsion under nitrous oxid. He also laid particular stress on the extent of divulsion, not to tear completely through the muscular fibers, but to stretch them until a few fibers just begin to be felt to separate.

ARKANSAS MEDICAL SOCIETY.

Thirtieth Annual Meeting, held at Little Rock, May 16-18, 1905.

The President, DR. JOSEPH P. RUNYAN, Little Rock, in the Chair.

Welcome.

In the absence of Mayor Lenon, Dr. Edwin Bentley extended a cordial welcome to the society in behalf of the state, and also for the Pulaski County Medical Society, to which Dr. Buchanan Hatchett made a fitting response.

President's Address.

The subject of the address of Dr. Joseph P. Runyan was "Some of the Needs of the Medical Profession, and the Measures Best Adapted to the Supplying of Such Needs," in which he called attention to the necessity of the society adopting the standard constitution and by-laws recommended by the American Medical Association, and also emphasized the necessity for the securing of proper legislation and the value to the society of a good legislative code. He urged the need of a higher literary education among medical men, and stated that he hoped to see the day when a literary degree would be required as a requisite for entering on medical studies. The Arkansas Medical School, he stated, should be a part of the University of Arkansas and should be supported by the state, with specialists employed as teachers, and there are urgent needs for a state bacteriologist and for a state pathologic laboratory.

Organization.

The secretary reported a net membership gain of 130 during the year, and an increase in receipts over the previous year.

Reports from ten councilor districts showed that there were only thirteen counties which remained unorganized in the state and in most of these organization would be effected during the coming year.

First District.—Dr. G. A. Warren, Black Rock, reported that only Crittenden and Poinsett counties remained unorganized.

Second District.—Dr. Joseph C. Cleveland, Bald Knob, reported that Fulton, Izard and Sharp counties, the only three in his district not yet in the society, would be organized before the next meeting.

Third District.—Dr. Montague Fink, Helena, reported that Cross county was the only county in his district which was still unorganized.

Fourth District.—Dr. Vernon McCannon reported that Bradley county was the only one unorganized in his district and that this would be organized shortly.

Fifth District.—Dr. Morgan Smith, Eldorado, reported that all counties in his district were organized and in good condition, and practically all the physicians in the society.

Sixth District.—Dr. S. M. Carrigan, Hope, reported only one unorganized county in his territory, namely, Polk county, and the membership rapidly increasing.

Seventh District.—Dr. C. Travis Drennen, Hot Springs, reported that there were still two counties unorganized in his district, Montgomery and Scott.

Eighth District.—Dr. Edward R. Dibrell, Little Rock, reported that all counties in his district were thoroughly organized.

Ninth District.—Dr. John B. Bolton, Eureka Springs, reported that Stone and Van Buren counties were still unorganized.

Tenth District.—Dr. St. Cloud Cooper, Fort Smith, reported that one county in his district was unorganized, namely, Madison county.

Election of Officers.

The election of officers resulted as follows: President, Dr. S. M. Carrigan, Hope; vice-presidents, Drs. William S. Stewart, White Oak; Matthew S. Dibrell, Van Buren, and D. W. Bright, Lewisville; secretary, Dr. Charles C. Stephenson, Little Rock; councilors, first district, Dr. J. A. Warren, Black Rock; third district, Dr. Montague Fink, Helena; fifth district, Dr. Frederick E. Harrison, Fordyce; seventh district, Dr. John L. Butler, Sheridan, and ninth district, Dr. John B. Bolton, Eureka Springs; delegates to the American Medical Association, Dr. Herbert H. Canfield, Siloam Springs; alternates, Drs. Morgan Smith, Eldorado, and Lorenzo B. Gibson, Little Rock.

The next meeting will be held at Pine Bluff.

The banquet was attended by 160 members, Dr. Frank Vinsonhaler presiding as toastmaster.

ARIZONA MEDICAL ASSOCIATION.

Annual Meeting held at Prescott, June 1-2, 1905.

The President, DR. WILLIAM H. WARD, Phoenix, in the Chair.

In the absence of Mayor Goldewater, City Councilman J. W. Wilson welcomed the association to Prescott, and Dr. Henry Hughes, Phoenix, responded on behalf of the association.

In his annual address the president, Dr. William H. Ward, reviewed the history of medicine and pointed out helpful lessons from the experience of the past.

Diseases of School Children.

The committee on the results of diseases of the eye, ear and nose of school children made its report through its chairman, Dr. Ancil Martin, Phoenix, and a resolution was presented by Dr. J. W. Coleman, Jerome, requesting that the matter of the examination and care of school children as regards these diseases, be brought to the attention of the Territorial Board of Health, through the territorial health officers.

The annual address was delivered by Dr. William W. Whitmore, Tucson, on the "Therapeutics of Alcohol," in which he reviewed the chemistry and physiology of alcohol and its applicability as a medicinal agent.

Dr. Andrew W. Morton, San Francisco, made an instructive and interesting demonstration of spinal anesthesia at Mercy Hospital, performing an operation for hernia, a second for a removal of a vesical tumor, and the third an operation on the foot under local anesthesia.

In the evening the annual banquet was held, over which Dr. John S. Barrett presided.

American Medical Association.

In response to this toast, Dr. Andrew W. Morton, San Francisco, emphasized the value of organization and co-operation and the benefit that accrues to the individual physician from meeting his brother practitioners and exchanging ideas through the mediums of association meetings.

Election.

The following officers were elected: President, Dr. J. W. Coleman, Jerome; vice-presidents, Drs. Arthur W. Olcott, Tucson; Otto E. Plath, Phoenix, and Albert E. Ealy, Kingman; secretary, Dr. John W. Foss, Phoenix (re-elected); treasurer, Dr. R. F. Palmer, Roosevelt; councilors, Drs. Clarence E. Yount, Prescott; Ancil Martin, Phoenix, and Hiram W. Fenner, Tucson; delegates to American Medical Association, Dr. Henry A. Hughes, Phoenix; alternate, Dr. Frank W. Sawyer, Prescott; and essayist, Dr. Henry P. Thomoson, U. S. Army, Fort Whipple. The next meeting will be held at Phoenix.

CONNECTICUT MEDICAL SOCIETY.

One Hundred and Thirteenth Annual Meeting, held in Hartford, May 24-25, 1905.

The President, Dr. William H. Carmalt, New Haven, in the Chair.

Dr. Everett J. McKnight, Hartford, chairman of the committee on legislation, outlined a plan for changing from the present organization to a new one.

Anti-Vaccination Legislation.

Dr. William H. Carmalt reported at length the history of the attempt at anti-vaccination legislation and suggested that a resolution be adopted reaffirming the necessity of keeping compulsory vaccination laws on the statute books.

Reports of Officers.

Dr. Nathaniel E. Wordin, Bridgeport, the secretary, reported that the society numbers 758, a net gain of 22 for the year, during which 50 joined the society and 15 died.

Dr. William W. Knight, Hartford, the treasurer, reported receipts of $2,345.58, and a balance in hand of $864. A per capita tax of $3.00 was levied.

Dr. Charles A. Tuttle, New Haven, reported that the committee on medical registration had examined 94 applicants during the year, 74 of whom passed.

Election of Officers.

The following officers were elected: Dr. Nathaniel E. Wordin, Bridgeport, president; Drs. Frederick A. Morrell, Putnam, and Eli P. Flint, Rockville, vice-presidents; Dr. Walter R. Steiner, Hartford, secretary, and Dr. Joseph H. Townsend, New Haven, treasurer.

The annual banquet was held at the Allyn House, May 26.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Belladonna.

Belladonna, according to Beasley, is valuable as an antispasmodic and is of service in cardiac palpitation, dysmenorrhea, constipation, laryngismus stridulus, night sweats of phthisis, nocturnal incontinence of urine, cystitis, spasmodic asthma and whooping-cough. It may be employed both externally and internally in neuralgic affections, in checking the secretion of milk, in relieving cramp, whether of body or limb, in relieving spasm of sphincters, of uterus, bladder or rectum, and in relieving chordee. It should be kept in mind that some persons show an idiosyncrasy to belladonna, small doses in some instances producing delirium and an erythematous rash.

The linimentum belladonnæ is of value in neuralgic and rheumatic pains.

Note.—The liniment is made of the following:

℞.	Liq. extractæ belladonnæ..............	ʒvi	25|
	Camphoræ	gr. xxxviii	2|5
	Aquæ dest........................	m. lxxv	5|
	Alcoholis, 90 per cent., q. s. ad......	ʒxiiss	40|

The ointment is serviceable as an application in spasm of the sphincter. For spasm of the urethra or chordee it may be applied along the under side of the penis. It is also recommended as a local application over carbuncles.

The linimentum belladonnæ may be used alone or in combination with other liniments in the treatment of lumbago as follows:

℞.	Linimenti belladonnæ		
	Linimenti chloroformi		
	Linimenti aconiti, āā..................	℥i	30|

M. Ft. linimentum. Sig.: One tablespoonful to be well rubbed into the painful area; the part is then to be covered with hot spongiopiline.

In the treatment of constipation the following combinations are recommended, the dose of each to be regulated to suit the individual case:

℞.	Ext. belladonnæ..................	gr. 1/4	|015
	Pulv. capsici......................	gr. 1/4	|015
	Ext. cascaræ........................	gr. iii	|20

M. Ft. pil No. i. Sig.: One such pill at bedtime as required. Or:

℞.	Ext. bellad. alc....................	gr. 1/4	|015
	Pil. rhei co.........................	gr. iii	|20

M. Ft. pil. No. i. Sig.: One such pill at bedtime. Or:

℞.	Ext. belladonnæ..................	gr. 1/6	|01
	Aloini	gr. 1/4	|015
	Strych. sulph....................	gr. 1/40	|0015
	Pulv. ipecac......................	gr. 1/4	|015

M. Ft. pil. No. i. Sig.: One pill night and morning, as required.

To relieve palpitation and heart pain the following is recommended:

℞.	Tinct. belladonnæ...................	m. v	|30
	Tinct. camph. co....................	m. xv	1|
	Syr. aurantii	ʒss	2|
	Aq. camphoræ q. s. ad.................	℥i	30|

M. Sig.: To be taken at one dose and repeated three times daily if required.

In case of cardiac weakness the following is of value:

℞.	Tinct. belladonnæ...................	m. v	|30
	Tinct. cacti grandiflor...............	m. v	|30
	Aq. chloroformi q. s. ad................	℥i	30|

M. Sig.: To be taken at one dose in a little water and repeated once daily.

To check the flow of milk the author recommends the following:

℞. Emp. belladonnæ.

Sig.: A piece six inches in diameter to be applied to each breast.

To check night sweats the following combination is recommended:

℞.	Ext. bellad. alc...................	gr. 1/4	|015
	Agaricin	gr. 1/6	|01

M. Ft. pil. No. i. Sig.: One at bedtime to check the night sweats of phthisis.

In spasmodic asthma the following:

℞.	Tinct. belladonnæ..................	m. xv	1|
	Tinct. lobeliæ ætheræ................	m .x	|65
	Tinct. jaborandi.....................	m. xv	1|
	Aq. chloroformi q. s. ad................	℥i	30|

M. Sig.: At one dose to relieve the attack.

In cases of marked irritability of the bladder the folllowing is recommended:

℞.	Tinct. belladonnæ	m. viii		50
	Infusi buchu q. s. ad	℥i	30	

M. Sig.: To be taken in half a glassful of barley water and repeated every six hours.

Shoemaker recommends the following ointment containing belladonna in the treatment of boils and carbuncles, also in local abscess formations in herpes zoster:

℞.	Ung. belladonnæ	ʒss	2	
	Lanolini	℥ss	15	
	Cerati plumbi subacetati	ʒiii	12	
	Ung. zinci oxidi	℥ss	15	

M. Sig.: To be applied locally once or twice daily.

A lotion or an ointment containing belladonna is recommended by this author in the treatment of pruritus of the genitals and urticaria, and in chronic eczema when attended with excessive itching:

℞.	Naphthol	gr. xx	1	30
	Ung. camphoræ			
	Ung. menthol, āā	ʒii	8	
	Ung. belladonnæ	℥ss	15	

M. Ft. unguentum. Sig.: To be applied locally. Or:

℞.	Acidi carbolici	ʒss	2	
	Linimenti belladonnæ	℥ii	60	
	Glycerini			
	Aq. rosæ, āā	℥iv	120	

M. Ft. lotio. Sig.: Apply locally.

In relieving leucorrhea the following is recommended:

℞.	Ext. bellad. fol. alc.	gr. xxiv	1	65
	Acidi tannici	ʒiss	6	
	Olei theobrom., q. s.			

M. Ft. suppos. No. xxiv. Sig.: Three or four suppositories to be used daily.

In the treatment of neuralgia, which is often a sign of defective nutrition and associated with anemia, the author recommends the following combination:

℞.	Ext. bellad. fol. alc	gr. iv		25
	Quin. sulph	gr. xxii	1	50
	Ferri sulph. exsic	gr. vii		50
	Strych. sulph	gr. 1/4		015
	Acidi arsenosi	gr. 1/5		012
	Oleoresinæ piperis	m. viiss		50

M. Ft. pil. No. xv. Sig.: One pill three times a day.

Inflammation of the pharynx and tonsils is frequently lessened by some preparation of belladonna, and for this purpose Shoemaker recommends the following combination:

℞.	Potass. chloratis	gr. lxxx	5	
	Acidi hydrochlor. dil	ʒiss	6	
	Tinct. aconiti	m. xv	1	
	Tinct. belladonnæ fol	ʒss	2	
	Infus. rhois glabræ q. s. ad	℥iv	120	

M. Ft. solutio. Sig.: One tablespoonful in water every three hours.

Atropin may in a great many instances be substituted for the other preparations of belladonna. The following, known as Ludlow's ointment, is of value applied locally in the treatment of boils and other local suppurating processes:

℞.	Atropinæ sulph	gr. ss		03
	Aconitinæ	gr. iss		09
	Olei tiglii	m. ii		12
	Liq. petrolati	℥i	30	

M. Ft. unguentum. Sig.: Rub in a piece the size of a pea over the affected area and repeat once daily.

Cerebrospinal Meningitis.

The treatment of cerebrospinal meningitis, according to Huber, in *Med. News*, consists in the proper isolation of the case in charge of a competent nurse and in a well-ventilated room. The room should not necessarily be kept dark, as a bandage over the patient's eyes serves the same purpose. The nutrition must be maintained by a proper liquid diet. An ice-bag should be applied to the head, and the head and neck should be properly supported. It is said that raising the head of the bed from six to eight inches sometimes gives relief. Water should be given in abundance, and care should be observed as to the elimination and the usual methods of reducing temperature should be carried out. The nasopharynx should be properly cared for, as it is a frequent seat of catarrhal condition in these cases, and the nares should be irrigated with a normal saline solution once or twice daily. Forced feeding may have to be resorted to early in the disease owing to a paralysis of the muscles of deglutition. Pain and restlessness must be relieved by morphin or codein, by the mouth or hypodermically. Bromids may serve the purpose. Severe vomiting in the later stages, according to the author, is relieved by lumbar puncture, hypodermic injections of small doses of morphin, ice to the epigastrium and care as to diet. If pulmonary edema occurs, sodium benzoate or caffein subcutaneously is recommended as giving prompt relief. Adrenalin is also spoken of favorably.

Packs or baths at a temperature of from 90 to 98 F., with or without mustard, will relieve the irritability, improve the circulation and induce sleep.

Aufrecht's method is also spoken of as of value; it consists in placing the patient in a hot bath, 104 F., with an ice-cap to the head and continued for fifteen minutes at a time, once or twice daily. It is claimed that by this treatment consciousness is restored, delirium calmed, and restlessness and pain relieved.

The Credé or mercurial ointment has been of no special benefit in these cases, according to this writer. In chronic hydrocephalus, potassium iodid internally and in small doses along with lumbar puncture prolong the life of the patient. The iodids are supposed to cause the absorption of the plastic exudate.

Medicolegal

When a Disability Is Immediate.—The Supreme Court of Kansas holds, in Order of United Commercial Travelers of America vs. Barnes, that, as applied to a contract indemnifying a person, in case of accident, for injury sustained by violent means which should, "independently of all other causes, immediately, wholly, and continuously prevent him from the prosecution of any and every kind of business pertaining to his occupation," the word "immediately" is not synonymous with "instantly," "at once," and "without delay." A disability is immediate, within the meaning of such contracts, when it follows directly from an accidental hurt, within such time as the processes of nature consume in bringing the person affected to a state of total incapacity to prosecute every kind of business pertaining to his occupation.

Value of Services Determined by Locality.—The Supreme Court of Rhode Island says, in the case of Best vs. McAuslan, brought by a specialist on the eye, ear and throat to recover for performing the "radical mastoid" operation, that the plaintiff and his two expert witnesses declared that, for performing the operation under the circumstances of this case, the sum of $500 charged was not excessive, while the defendant introduced as a witness a specialist in the same line, who had had a large experience with this class of operations, who testified, and was not contradicted, that the price for this operation in Providence would range from $200 to $300, although higher in other and larger cities. Continuing, the court says that the rule has been laid down, in several cases cited by the defendant, that "the value to be proved is the ordinary and reasonable price for services of that nature"—Styles vs. Tyler, 64 Conn., 432, 463; Ladd vs. Witte (Wis.), 92 N. W. Rep., 365, 367—and that, to prove the real value of services in question, customary charges of physicians for like services in the same locality may be shown—Jonas vs. King, 81 Ala., 285; see, also, Pfeil vs. Kemper, 3 Wis., 315—where the same rule is applied as to services not medical. In the court's opinion, this was the true rule to be applied in this case; and it followed, it says, that, as a sum of not to exceed $300 appeared to be the customary charge for this operation in this locality, that sum was all that the plaintiff should be entitled to recover for the operation alone, in the absence of an express contract for a larger sum. As to charges of $5 per visit at the house and $3 per visit at the office, all the medical witnesses on both sides testified that those were the ordinary and customary charges for a specialist in this locality, and that the services of the specialist in this case were necessary and proper, so the sum of $404 claimed for such visits was allowed.

Waiver of Privilege by Stipulation in Contract.—The Supreme Court of Nebraska holds, Western Travelers' Accident Association vs. Munson, that the prohibitions, in Section 333 of the Code of that state, against a physician's testifying to confidential disclosures made to him in the course of his professional employment, are for the benefit of the patient, who, by express provisions of Section 334, is permitted to waive them. It is not necessary that such waiver be made at the time of the trial. It may be included in and made a part of the contract sought to be enforced in the action in which such testimony is offered. A stipulation in a contract of life insurance to the effect that the proofs of death shall consist in part of the affidavit of the attending physician, which shall state the cause of death and such other information as may be required by the insurer, constitutes a waiver within the meaning of said sections, and renders the attending physician a competent witness as to the confidential disclosures made to him by the assured concerning his last sickness. It is further said in the case that it has been held that the patient may waive the protection of the statute, even though there is no provision for such waiver. Carrington vs. City of St. Louis, 89 Mo., 208; Grand Rapids Railway Co. vs. Martin, 41 Mich., 667. The proper treatment of a patient often involves an intimate knowledge on the part of his physician of facts of a delicate nature, and which the patient would object to having disclosed to third persons. The common law protects the patient against the voluntary disclosure of such facts, and the statute protects him against their involuntary disclosure by his physician. But where the patient himself not only consents, but expressly stipulates, that such disclosures be made in order to give force and effect to his contract, it would be a harsh and unwarranted application of a salutary rule to hold that the plaintiff (the beneficiary of his contract of insurance) could not avail herself of such stipulation for the enforcement of the contract made for her benefit.

No Promise on Part of Company to Pay for Services.—The Court of Errors and Appeals of New Jersey says, in the case of J. H. Mohlman Co. vs. American Grocery Co., that a boy who had been in the employ of the grocery company had been kicked by one of its horses while engaged at work at its stable, and received a severe injury to his jaw. Another employe of the company took him immediately to a physician's office for treatment, telling the physician, on being asked who was responsible for his bill, that the grocery company would be good for it. During the course of the treatment, which extended over a period of more than two months, it became necessary, in the judgment of the physician, to have an interdental plate made for the boy. This work, the physician told another employe of the company who was in the habit of accompanying the boy to his office, would require the services of an expert dentist, asking such other employe who would pay the dentist's bill; and the employe referred him to the grocery company's cashier. The cashier, in turn, applied to the company's manager for instructions, and was told to refer the physician to the Fidelity and Casualty Company, a corporation which had insured the grocery company against liability for accident to its employes. The physician then called up the casualty company on the telephone, and was informed by the agent who answered his call not to go ahead with the case until that company had looked into the matter, and that if he sent the boy to the dentist and incurred any bill he would have to pay it out of his own pocket. No other communications were had by the physician with the employes or agents of the grocery company relating to compensation for his services, so far as was shown. It was not contended that the statement made by the employe who first took the boy to the physician, that the grocery company would be good for the physician's bill, imposed any liability on that corporation. Nor does the court think that liability on that company's part to pay the physician's bill could be deduced from the failure of its manager to repudiate liability on its part and his referring the physician to the casualty company. It says that the question of the company's liability was one which the manager was not concerned with. He knew that if it existed the company was protected against loss by reason thereof through its contract with the casualty company. He properly concluded, therefore, that, as the casualty company was ultimately liable, if liability existed at all, for the expenses incurred on account of the boy's injuries, that company, and not the grocery company, was the one to determine whether or not the proposed expenditure should be made. His reference of the physician to the casualty company was tantamount to saying: "We have no responsibility in the matter. If the boy has any claim, the casualty company must pay it. They, therefore, and not the American Grocery Company, are the ones by whom the question of incurring this proposed expense must be passed on." Instead of being an affirmation of the grocery company's liability, and a notification to the physician that he was contracting an obligation against that company by treating the boy for his injuries, it was rather a notification that the physician must look to the casualty company, and not to the grocery company, for compensation for his services.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical News, New York.

July 1.

1 National Association for the Study and Prevention of Tuberculosis. President's Address. E. L. Trudeau, Saranac Lake, N. Y.
2 Educational Treatment of "Tics." B. Sachs, New York.
3 *Lavage of the Renal Pelves in the Treatment of Bright's Disease. W. Ayres, New York.
4 Fetal Manifestations of the Toxemia of Pregnancy. W. S. Stone, New York.
5 *What Advice Should be Given to Women with Malpositions of the Uterus? C. G. Child, Jr., New York.
6 Carbolic Acid Gangrene. J. Herold, New York.
7 The Medical Profession in Its Relation to the Elimination of Communicable Diseases. E. N. Liell, Jacksonville, Fla.

3. **Lavage of Renal Pelvis in Bright's Disease.**—Ayres believes that not enough importance has been given to the probability that a large per cent. of cases of chronic nephritis, in which no discoverable cause for the inflammation can be found, are really due to extension of inflammation from the renal pelvis. He has treated a number of cases of nephritis in all of its various stages by lavage of the renal pelves, and the purpose of his paper is to present the results of such treatment. In speaking of these cases, he refers to beginning nephritis as parenchymatous degeneration. Pronounced cases are called parenchymatous or interstitial nephritis, according to the portion of kidney involved. He has treated 46 cases of parenchymatous degeneration, and in all but 8 the tubal cells and albumin have disappeared from the urine. Six of these 8 are still under treatment. Among these there were 46 patients who had casts, both granular and hyalin. Every one of these has been discharged, cured. There has been no indication of a recurrence of the trouble. Of the other 38 patients, all presented tubular epithelium; 16 had no albumin, and 22 showed more than a trace. The longest time required to cause the albumin to disappear in the mild cases was 11 weeks; the shortest, one treatment. Nearly all of the 38 patients remained under treatment for other troubles some months, during which time there was no evidence of a return of the kidney trouble. Of the 12 cases of advanced nephritis, 3 patients with chronic parenchymatous variety were markedly improved. Two patients with mild interstitial nephritis were somewhat improved. One patient with marked interstitial nephritis was considerably improved at first, but the treatment had no ultimate influence on the course of the disease. Three patients with well-marked interstitial nephritis

were not influenced; neither were 2 who had had decapsulation performed. One patient in the late stages of interstitial nephritis was made much worse by the treatment. Hence, lavage of the renal pelves is applicable only in selected cases. In subchronic and chronic parenchymatous nephritis, lavage will check the disease and markedly improve the general condition of the patient, in those cases that have not reached the stage known as cirrhotic kidney. It will certainly cure a beginning nephritis that is due to extension of inflammation from the renal pelves. Lavage of the renal pelves requires the utmost delicacy in handling the instruments, and the injections through the ureteral catheters must be made with patience and gentleness. Asepsis must be rigorously observed not only in regard to the cystoscope and catheters, but the hands of the operator and the urethra of the patient must also receive attention. The least roughness in the use of the cystoscope may cause injury to the urethra and to the vesical trigone. Lack of delicacy in the passage of the ureteral catheters may cause hemorrhage from the ureters. The use of too strong or too irritating solutions may cause severe renal colic; and an injection which is too copious or which is given with too much force causes considerable pain and will not benefit the patient. Ayres considers the straight view cystoscope preferable to the angular view in that it causes the patient much less pain; there is less danger of injury to the ureter; the character of any obstruction in the ureter may be more easily determined; and the entire operation of catheterization of the ureters is much more quickly completed with this form of instrument. The medication must be selected to suit each case. Ayres favors silver nitrate in a vehicle of boric acid, 1-8000, increasing slowly to 1-2000. The time occupied in giving a lavage varies with different patients. Those who have a tolerance for solutions in the renal pelves require about fifteen minutes, while patients with irritable or sensitive ureters require half an hour. In the former cases, the solution is thrown in slowly until there is a feeling of fullness over the kidneys; in the latter only about a dram should be thrown in at a time. In all from two to four ounces a temperature above that of the body—105 to 110 F. seems to be best borne by the patients. If colicy pains occur, it is best to remove the catheters immediately and to postpone further lavage for one week. A proper lavage of the renal pelves consists of repeated injections of small quantities of a medicated solution through a catheter that has been passed well up the ureters toward the pelves. It is not necessary that the eye of the catheter be in the pelvis, but it should be within six inches of it. After each injection, the fluid is allowed to flow out through the catheter before a second injection is given. Never inject large quantities. As the catheter is withdrawn, the solution is deposited all along the ureter so as to treat that organ. The patient is then requested to pass the water remaining in the bladder; a Janet wash of silver nitrate is given, and the operation is completed.

5. **Advice to Patients with Uterine Displacements.**—Child divides all malpositions of the uterus into three classes: Operative, non-operative, and questionable. The operative class is further divided into those requiring immediate attention, and those in which it is safe to wait for a reasonable time the convenience of the patient. Under the first subdivision, come those cases which may be classed as emergency ones, namely, inversion, incarceration and irreducible prolapse of the gravid uterus, and adherent gravid retrodisplacements with symptoms of threatened abortion. In the second subdivision are the complicated retrodisplacements and herniæ of the uterus either through the vagina or through the abdominal wall. In the non-operative class Child includes uncomplicated retrodisplacements and reducible hernia of the gravid uterus. The questionable class embraces the congenital type of cases and retrodisplacements with symptoms relieved by reduction, except when the use of a proper pessary fails to accomplish an anatomic cure, or in young virgins in whom its use is unjustifiable. The congenital cases being errors in development are each a law unto themselves and require a most thorough investigation. When the retrodisplacement is the only abnormality present, the patient is often greatly benefited by an early operation, but when other marked evidences of maldevelopment exist the prognosis is unfavorable.

American Medicine, Philadelphia.

July 1.

8 *Rectal Alimentation. W. H. Porter, New York City.
9 *Two Cases of Korsakoff's Psychosis; with Neuropathologic Findings in One of the Cases. R. V. Patterson, and D. J. McCarthy, Philadelphia.
10 *Primary Cancer of the Liver, with Metastases to the Left Adrenal and Right Lung. W. F. Cheney, San Francisco, Cal.
11 Some Phases of Tropic Malarial Disease. T. W. Jackson, Philadelphia.
12 *Surgical Aids in the Treatment of Paralyzed Muscles and Their Deformities. S. D. Hopkins, Denver, Colo.
13 *Rheumatic Purpura in Children. J. J. Manasses, Philadelphia.

8. **Rectal Alimentation.**—Porter calls attention to the fact that, owing to the limited amount of food that can be utilized in this manner, it is at best a very poor substitute for the natural method of feeding. It does, in a measure, relieve the pangs of thirst and hunger that of necessity follow the slow process of starvation which occurs when the stomach and small intestines are thrown out of commission, but, so far as Porter's experience has gone, rectal alimentation has proved most unsatisfactory. He has tried all forms of substances, predigested and otherwise, for rectal alimentation, with but one result, namely, progressive starvation without the most intensely distressing symptoms.

9. **Korsakoff's Psychosis.**—Paterson reports two cases which he regards as typical of the disease. Both cases reported were sudden in onset, of alcoholic origin, and each patient exhibited the symptoms of ordinary, severe multiple neuritis with marked weakness and inability to walk, disorientation as to time and place, marked fabrications, illusions of identity, hallucinations of sight and hearing, and defective memory, with a certain peevishness and childishness of manner. After two months, the mental symptoms in one patient had improved sufficiently to show little more than a feeble memory for recent events, and at the end of four months such improvement in the physical condition as gave promise of a more or less complete recovery from the multiple neuritis. The second patient died of cardiac exhaustion at the end of one month. Neuropathologic findings showed no gross change in the brain or spinal cord. Microscopic examination revealed marked degenerative changes in the anterior horn cells of the cord and throughout the peripheral nerves and muscles, pyknosis in some of the cells of the pyramidal layer taken from the Rolandic area, diffuse moderate chromatolysis of the large Betz cells in the brain and a complete diffuse chromatolysis of the anterior horn cells in the cord. No changes were found in the subendymal tissues, neuroglia, blood vessels, meninges or by sheath stains in the spinal cord, medulla or brain.

10. **Primary Cancer of the Liver.**—Cheney cites a case occurring in a man of 65, whose symptoms were pain in the left side for fifteen years past; pain in the right side and tumor in the same region for two years past; loss in weight and persistent vomiting. He had a large palpable tumor below the right costal margin continuous with the liver above; a nodule in the epigastrium the size of a walnut; and a large, indefinite, deeply-seated mass on the left side, beneath the costal margin. The blood count gave evidence of a secondary anemia. There was no disease of the kidneys, lungs or heart. The diagnosis made was cancer of the pyloric end of the stomach and a gastroenterostomy was done for its relief. The patient died the same day from shock. At the autopsy it was found that the tumor in the right side was a large cancerous mass in the right lobe of the liver; the nodule in the epigastrium was situated in the left lobe of the liver; and the mass in the left side was found to be a tumor of the left adrenal, the size of an infant's head. The stomach and intestines were entirely free from invasion. The tumor was considered primary in the liver, because the structure of the metastases in adrenal and lung resembled that of liver tissue; and also because bile pigment was found in the adrenal tumor.

12. **Surgical Aids in Treatment of Paralyzed Muscles.**—Hop-

kins says that when mechanical means have failed to restore paralyzed muscles to usefulness, such surgical procedures as tendon transplantation or arthrodesis should be employed. Certain precautions should be observed in tendon transplantation: 1. Careful selection of cases. 2. Before muscle grafting is performed, the electric reactions should be taken to determine the strength of the muscles to be transplanted. 3. The reinforcing tendon should be as nearly parallel as possible to the one to be reinforced, and it should belong to the same muscle group, although this latter precaution is not absolutely necessary. 4. Overextension at the time of suture should be avoided, as subsequently the muscle will lose its contractile power. 5. The tension of reinforcing muscle should be estimated by pulling on it until it shows signs of complete resistance. 6. Silk sutures should be used and the muscles quilted together firmly. 7. Strict asepsis should be observed during the operation.

13. **Rheumatic Purpura in Children.**—Manasses reports three cases. The first, that of a child of 3, was of rheumatic diathesis. The attack was ushered in with headache, sore throat, nausea, but no vomiting. Temperature ranged between 102 and 104 F. On the third day, the eruption appeared on the lower limbs and rapidly spread over the entire body. Some blebs became necrotic. On the sixth day, the child could not distinguish objects placed in front of its eyes. There was a trace of albumin in the urine; there was no blood from the mucous membrane or bowels. Recovery was slow. Fully four weeks elapsed before the purpura disappeared. The other two cases, in children aged 8 and 9 years, respectively, were mild and followed a course similar to the first, but the symptoms were less severe.

Medical Record, New York.

July 1.

14 *Correction of Nasal Deformities by Subcutaneous Operations. J. O. Roe, Rochester, N. Y.
15 *Actinomycosis of the Lung. E. F. Ingals, Chicago.
16 *Poisoning by Wood Alcohol. A Case of Complete Blindness (Transitory), With Recovery of Vision. C. Koller, New York.
17 *Aspects of the Cancer Problem. G. B. Massey, Philadelphia.
18 *Treatment of Spastic Constipation. A. Albu, Berlin, Germany.
19 *Inebriate Manias; A Medicolegal Study. T. D. Crothers, Hartford, Conn.
20 Advanced Scholarships and Morbid Mental Conditions; Some Clinical Cases. W. L. Howard, Baltimore, Md.

14. **Correction of Nasal Deformities by Subcutaneous Operations.**—Roe describes the operative technic employed in correcting seven cases of extreme or unusual deformity of the nose, due to disease or accidents of various sorts. The underlying principle of Roe's methods consists in doing as much of the work as possible subcutaneously, so as to avoid scarring of the skin, and he has been able to develop this plan to a remarkable degree. The "before and after" appearance of the patients is illustrated by a series of twenty-one photographs. Roe points out the importance to the individual of having such deformities corrected, and his results show that by the exercise of sufficient ingenuity and the most careful attention to detail it is possible to relieve patients of a disfigurement which forms a source of embarrassment to them, often amounting to positive torture.

15. **Actinomycosis of the Lung.**—Ingals describes a case in which the etiology is obscure, as the patient had not come into contact with diseased cattle. On incising a swelling in the right interscapular space, a quantity of grayish pus escaped, which on examination was found to contain actinomycosis fungi. The general symptoms were indefinite, as well as the pulmonary signs in the region of the abscess. The author says that the disease in its earlier stages may be divided into pleuropneumonic or bronchopneumonic varieties, while later on the lesions are so complex that it is often impossible to classify them. In pleuropneumonic actinomycosis the invasion occurs from without, but sooner or later the two forms run into each other, the pleuropneumonic extending inward, until the bronchi are involved or the bronchopneumonic progressing until the pleura is affected. Ingals' case was of the pleuropneumonic type, and the question arises whether the infection could have occurred through some forgotten scratch or pimple, or through the unbroken skin. The disease is likely to be mistaken for pulmonary tuberculosis, gangrene, malignant disease, syphilis, and hydatid cysts. The differential diagnosis and prognosis are discussed, and treatment with iodid of potassium in large doses combined with general tonic measures is said to offer the best chances of cure, though there is but little hope when secondary infection with pus cocci occurs.

16. **Poisoning by Wood Alcohol.**—Koller describes the case of a man of 42, suffering from acute, total blindness. The loss of sight had come on during the second night after taking about two ounces of whisky, a quantity which subsequent analysis showed contained about 20 c.c. of wood alcohol. The visual disturbance rapidly progressed, until about thirty-six hours later he was completely blind. On ophthalmoscopic examination, the optic nerves presented the picture of a neuroretinitis of moderate intensity and in the macular regions were dispersed numerous, yellowish, bright, shining spots similar to the picture described as choroiditis guttata. Potassium iodid, hot baths and good nourishment were prescribed, and six months later the right eye showed complete recovery of function, except a moderate diminution of visual acuity, and the left eye presented marked though moderate concentric contraction of the field, considerable diminution of central vision and absence of perception for green.

17. **Some Aspects of the Cancer Problem.**—Massey urges a wider diffusion among the public of our present knowledge concerning the disease. The public should be instructed as to the deplorable results of delay, whereby what was at first a strictly local process is permitted to become generally diffused. It is urgently to be desired that the government and wealthy private individuals should subsidize research laboratories devoted to the study of this question, as the private means of investigators are usually inadequate. In regard to treatment, Massey says that nearly 100 per cent. of external and semi-external growths can be positively cured in their early stage by cauterization, particularly by the electrochemical methods of destructive sterilization.

18. **Treatment of Spastic Constipation.**—Albu says that it has of late years been recognized that there is a type of the disease in which the gut is in a state of spastic contraction. At least 25 per cent. of the cases of constipation in women belong to this variety. Treatment of constipation due to spasm is naturally very different from that of constipation dependent on atony, but the diagnosis is often difficult or impossible. The patients are usually neurasthenic or hysterical individuals, who may exhibit spasm in other regions of the body, such as cardio spasm, pharyngeal spasm, etc. The intestinal spasm is not continuous and gives rise to sensations that may range merely from a feeling of discomfort to positive colics. The contracted knots of the intestine may be palpable as tender sausage-shaped masses, and rectal examination may reveal a spastic condition of the sphincters. The feces sometimes assume the characteristic ribbon or lead-pencil shape. The treatment comprises the avoidance of all irritation of the intestine, especially massage, and the use of soothing and relaxing measures, such as warm baths, hot applications to the abdomen, warm oil enemas, belladonna, non-irritating, gruel-like diet, and rectal bougies.

19. **Inebriate Manias.**—Crothers cites numerous instances in which men who had for years been moderate drinkers developed delusions of various sorts which prompted them to commit or to attempt murder, suicide, and other crimes.

Boston Medical and Surgical Journal.

June 29.

21 *Frequency, Prognosis and Treatment of Lobar Pneumonia in Infants and Children. H. Koplik, New York.
22 Acetonuria in Non-Diabetic Surgical Cases. J. C. Hubbard, Boston.
23 Toxic Degeneration of the Lower Neurons. J. E. Donley, Providence, R. I.

21. **Lobar Pneumonia in Infants and Children.**—Koplik says that the pneumonia of infancy and childhood as compared to that of the adult presents certain differences in its course which should impress the physician. In certain epidemics,

meningeal symptoms seem to predominate, especially in those cases in which the apices of either lung are involved. In other epidemics, pneumonia with meningeal symptoms is not so frequent. In children, pneumonia is more apt to be followed by purulent pleurisy, especially below the age of 4 years, than by pleurisy with effusion, as in the adult. During fifteen years he saw 839 cases of pneumonia of all kinds and types. Of these cases 582, or 69 per cent., occurred before the end of the first two years of life. Of the 839 cases mentioned 436 occurred in male and 403 in female children. The right lung is mostly affected, and the upper lobe of the right lung rather than the lower lobe of the left lung is mostly involved. The prognosis of lobar pneumonia in infants and children will vary as to the age, severity and kind of infection, as to the amount of lung involved, and the presence or absence of complications. Generally speaking, the prognosis as to age is best below 10 years. The younger the child, the greater the danger. The season of the year also influences mortality. In the winter months, when the epidemic is at its height, the mortality is greatest, and in the spring and summer months it is lowest. This is due, possibly, to the great virulence of the infection. Complications also influence the prognosis. In infants and children a complicating pericarditis is fatal. Other complications, such as otitis, pleurisy, empyema, do not materially influence the prognosis in infants and children if recognized early and treated on sound principles. Lobar pneumonia, being an acute infectious disease, absolutely self-limited in its course, uninfluenced by any mode of specific treatment that we know of, it should be the duty of the physician to manage a case of lobar pneumonia in an infant or child very much on the same principles as he would manage a case of any other infectious disease, such as typhoid fever, with a certain allowance for the duration of the disease and the severity of the infection.

New York Medical Journal.

July 1.

24 Varicella Gangrenosa, with Report of a Case. F. Kieffer, Fort D. A. Russell, Wyo.
25 *Improved Method of Making Fresh Blood Mounts. G. R. Plummer, Key West, Fla.
26 Primary Jugular Bulb Thrombosis in Children, as a Complication of Acute Purulent Otitis Media; Report of Cases. F. McKernon, New York.
27 Six Lectures on Diseases of the Blood. J. M. Swan, Philadelphia. I. Technic.
28 Scientific Spirit versus Commercialism in Medicine. W. L. Conklin, Rochester, N. Y.
29 Etiology of Bradycardia. J. E. Greiwe, Cincinnati.
30 How Far Shall We Go in Performing Multiple Operations at One Sitting? H. A. Royster, Raleigh, N. C.
31 Fibroma of the Sheath of a Tendon. F. Torek, New York.

25. **Improved Method of Making Fresh Blood Mounts.**—Plummer's method is the same as that proposed by Hayem, except that he does not make use of the forceps. He accomplishes the same result by holding the cover-slips together with a dab of hot sealing wax.

St. Louis Medical Review.

June 24.

32 *Clinical Studies at Mount St. Rose. W. Porter, St. Louis.
33 Rupture of the Gall Bladder (Spontaneous and Traumatic; with and Without Operation)—An Historical Review of 273 cases. B. M. Ricketts, Cincinnati.

32. **Clinical Studies of Tuberculosis.**—Porter offers the following practical deductions made at the bedside based on the study of a large number of cases: 1. The progress and extent of the local lesions do not go, *pari passu*, with the general condition in pulmonary tuberculosis. 2. Posterior lesions are most aggressive. 3. The number of bacilli is not indicative of the stage of the disease or of its progress. 4. Hemorrhage is not always harmful. 5. Autoinfection is an indication for the use of salt solution. 6. Large doses of creosote are not indicated. 7. Night sweats may be controlled by giving an ounce of whisky just before the time of their occurrence, which, of course, must be determined beforehand. 8. Heart tonics, given in the early stages with increased lung expansion, encourage the pulmonary circulation. 9. Alterative expectorants are of value in the first and second stages. Other points discussed by Porter are the mechanical treatment of hemorrhage; the control of the fever and cough; value of the spinal douche, and the personal equation of the medical attendant.

Lancet-Clinic, Cincinnati.

July 1.

35 The University an Important Factor in the Community. E. G. Zinke, Cincinnati.
36 Clinical Value of Autopsies. F. P. Anzinger, Springfield, Ohio.
37 Treatment of Ophthalmia Neonatorum. C. T. Souther, Cincinnati.
38 Cholecystitis. J. L. Wiggins, East St. Louis, Ill.

Annals of Surgery, Philadelphia.

May.

39 *Actinomycosis. A. D. Bevan, Chicago.
40 *Cerebral Tumor. J. E. Owens, Chicago.
41 *Retrosternal Accessory Thyroid Tumor. H. D. Collins, New York.
42 Transthoracic Resection of the Lower End of the Esophagus. W. Meyer, New York.
43 *Gastroenterostomy and Pyloroplasty. W. B. Cannon and J. B. Blake, Boston.
44 *Resection of the Middle Third of the Stomach for Carcinoma of the Greater Curvature, C. L. Scudder, Boston.
45 Surgical Considerations Pertaining to Gastric Dilatation. A. M. Pond, Webster City, Iowa.
46 Gunshot Wound of the Pancreas. F. G. Connell, Salida, Colo.
47 *Hydrocele in the Female. A. E. Halstead and C. P. Clark, Chicago.
48 *Tuberculosis of the Testicle. I. S. Haynes, New York.
49 Rupture of the Tendon of the Biceps Flexor Cubiti. W. W. Keen, Philadelphia.

39. See abstract in The Journal, Jan. 28, 1905, page 317.

40. **Cerebral Tumor.**—Owens describes a case of cerebral tumor—in the right parietal region—occurring in a woman, aged 30, which was removed in two stages by the osteoplastic method, with subsequent wiring of the bone flap and the introduction of a gold plate. A notable feature during the operation was the profuse hemorrhage from the scalp. In spite of the fact that the head was encircled with an elastic band, hemorrhage persisted until the scalp at the pedicle of the flap was loosened for the purpose of enclosing the pedicle in an elastic ligature. As there was no tendency toward bone union in the skull, and as it was impossible to prevent the reappearance of a hernia cerebri, which first appeared a few days after the operation, the following final operation was performed: Drilling the skull and inserting a 22-carat, thin gold plate beneath the edges of the bone and over the cerebral protrusion. A silver wire was introduced, the flap was pressed into as close apposition as possible, and the wire twisted. The edges of the scalp wound were freshened with scissors, the scalp sutured, and a dry dressing with gauze drain applied. Three months after the operation the patient felt quite well, her appetite was good and she slept well. Otherwise her condition was the same as before operation, except that she was not troubled with headaches or vomiting. The wound had healed nicely, and no portion of the gold plate was visible.

41. **Retrosternal Accessory Thyroid Tumor.**—A case of this kind requiring removal and terminating fatally is cited by Collins. The patient, a woman, aged 47, had a globular cystic tumor about one inch in diameter to the right, but close to the median line of the neck, overlying the thyroid cartilage. The tumor had been present for nineteen years, and in the last two or three years increased considerably in size. Lately there had also been some difficulty in breathing, but no difficulty in swallowing. Under general anesthesia, the cyst was pealed out of the gland tissue. Instead of finding a simple spherical mass, the globular head of the cyst had a tail or backward prolongation about a half inch in diameter, extending along the right side of the trachea and esophagus. Two small cysts were shelled out from the left lobe of the gland. A sinus persisted, discharging freely. Fifteen months after the operation, the sinus was dissected out and was found to terminate in a cavity lying on the vertebral column at about the level of the sternal notch. Below, and apparently a continuation of the termination of the sinus, lay a discrete mass, three inches long and measuring about an inch and a half transversely and also antero-posteriorly. This mass lay just to the left of the median line, terminating below behind the arch of the aorta. The mass was shelled out and was found to be pure thyroid tissue with many colloid cysts and numerous calcareous deposits. On the fourth day, a lobar pneumonia developed in the right middle lobe, finally involving the entire right lung, and eight days after the operation the patient died.

43. **Gastroenterostomy and Pyloroplasty.**—Cannon and Blake present the results of an experimental study by means of the Roentgen rays of gastroenterostomy and pyloroplasty as surgical methods of obviating non-malignant pyloric stenosis. This discussion is brought forward from clinical sources, from recent physiologic investigation, and from observations on animals on which the operations mentioned had been performed. The stomach is not a passive bag. During digestion the cardiac end slowly contracts, pressing its contents into the pyloric end. Over the pyloric end, during digestion, peristaltic waves are continually running, churning the food with the gastric juices and forcing the chyme into the intestine. Observations on the functionating human stomach show that as it empties it shortens, especially along the greater curvature. Therefore, the part of the stomach lowest when the organ is full or relaxed is not lowest as it empties. The pylorus then becomes the lowest point. Even if "gravity drainage" occurred, the pylorus is the natural outlet, so long as the stomach retains its power of contracting. After an ordinary meal, the peristalsis of the pyloric end of the stomach makes the contents of this part more fluid than the contents of the cardiac end. Because peristaltic waves move toward the pylorus, the intragastric pressure is three or four times greater at any pylorus than in the cardiac end. Observations on large cats with gastroenterostomy openings of various sizes at various parts of the stomach showed that unless the opening, or stoma, was in the antrum (i. e., close to the pylorus) the food, even when fluid, was pushed through the pylorus rather than through the stoma. With peristalsis only in the pyloric end of the stomach, with the intragastric pressure much greater at the pylorus than elsewhere in the stomach, and with the food in the pyloric end normally more fluid than that in the cardiac end, the food is forced into the intestine through the pylorus and not through the artificial opening, when both ways are offered. Circulation of the food through the pylorus to the duodenum and back to the stomach through the anastomosis has been repeatedly observed, but it was not followed by the clinical symptoms of the "vicious circle." The circulation was observed best when the stomach was very full. The stretching of the stomach separates the lips of the stoma and draws the intestinal wall into line with the gastric wall. The openings into the intestine at the stoma then become mere slits, and act like waves, permitting the entrance, but preventing the exit, of the food. The clinical symptoms of the "vicious circle" have been observed in animals in which a kink of the intestine has been found just distal to the anastomosis. Kinks at this point can not be straightened by peristaltic activity because the circular fibers of the intestine are cut at the nearby stoma. It is important that food be mixed with the secretions poured into the duodenum; these juices are highly effective in digestion, and also neutralize the acid chyme. If food leaves the stomach by the stoma, it is not mixed with these secretions. Jejunal ulcers after gastroenterostomy may be due to the presence of acid in a region in which the inorganic acid is not normally found. From the above considerations, it was concluded that the stoma should be large and as near to the pylorus as possible; that the circulation of the food be rendered less probable by avoidance of overeating, and that, so far as possible, kinks be obviated by attaching a narrow band of the distal gut to the stomach for several centimeters beyond the stoma, thus permitting peristalsis to become an effective force. The probability of a circulation of the food whenever the pylorus is left open, the non-mixture of the food with the digestive and neutralizing fluids in the duodenum, and the ever-present danger from kinks in gastroenterostomy do not make the operation an ideal one. In pyloroplasty (preferably the Finney operation) these complications are avoided, and a too rapid exit of the food through the pylorus is prevented by rhythmic segmentation of the food in the duodenum, an activity which, in part, replaces the functions of the pylorus, and also mixes the food with the pancreatic juice and the bile.

44. **Carcinoma of the Stomach.**—The case reported by Scudder is of interest because carcinoma of the greater curvature of the stomach is unusual. The growth did not infiltrate the submucosa, as is commonly the case with pyloric carcinoma. It had attained considerable size without causing many symptoms of gastric disturbance, for neither the pyloric nor the cardiac portions of the stomach were invaded. An end-to-end anastomosis was done, using an interrupted Connell suture. The technic of the operation was very greatly facilitated by the employment of clamps, according to the methods of Kocher, Hartman, Mayo and Moynihan. Ten months after the operation, the patient was still enjoying good health. Her age at the time of operation was 37. The diagnosis was confirmed microscopically. The feeding of the patient immediately after operation was as follows: She was fed for about one week on nutrient enemata containing milk, three ounces; one egg; salt solution, one ounce. A nutrient enema was given every eight hours. Each morning a cleansing enema was used thoroughly in the lower bowel. On the fourth day she was allowed water by mouth; on the ninth day, liquids; on the tenth day, soft solids.

47. **Hydrocele in the Female.**—Halstead and Clark report a case of a colored woman, 42 years of age, who, subsequent to the birth of her second child, eighteen years previously, noticed a mass in the right inguinal region, extending from the external abdominal ring into the right labium majus. It was slightly larger than an egg, oblong in shape, and was irreducible. It was tense, elastic, and very tender. A diagnosis of strangulated hernia was made, an operation advised and immediately performed. The tumor was found to be separated from the skin by a tough, adherent fascia. It contained an ounce and a half of a pale, straw-colored fluid. The diagnosis was changed to hydrocele of the canal of Nuck. The sac was freed from the surrounding tissue and from the round ligament, with which it was intimately connected, ligated at its highest point, and removed. Three layers of the abdominal wall were sutured, as in a Bassini operation for inguinal hernia. The round ligament was fastened in the inguinal canal by means of buried sutures. The skin incision was closed by silkworm gut sutures in the usual way.

48. **Tuberculosis of the Testicle.**—From a study of a personal case and other cases reported in the literature, Haynes concludes that the results from epididymectomy are more favorable than the best results obtained from castration, for in twenty epididymectomies there were only two deaths, one probably from tubercular kidney and the other from spinal disease. The much dreaded psychologic state following double castration occurs so very infrequently that this possibility can be disregarded entirely.

The Laryngoscope, St. Louis.

May.

50 Modern Methods of Accessory Sinus Treatment. H. H. Curtis, New York.
51 Antrum of Highmore; Removal of the Greater Part of Its Inner Wall Through the Nostrils for Empyema. O. T. Freer, Chicago.
52 *Proper Position of Patient in Operation for the Removal of Adenoids Under General Anesthesia. C. R. Holmes, Cincinnati.
53 Middle Ear Suppuration and Its Complications. H. F. Tod, London.
54 Acute Mastoiditis and the Mastoid Operation in Children. W. A. Wells, Washington.
55 *Mastoid Operation—Indications Therefor in Acute Suppurative Otitis Media Without Mastoid Symptoms. C. Jackson, Pittsburg.
57 Adenoid Curette. St. Clair Thomson, London.
58 Post-Nasal Forceps. St. Clair Thomson, London.

52. **Position of Patient in Removing Adenoids Under General Anesthesia.**—For the past fourteen years Holmes has proceeded as follows: The foot of the operating table is elevated slightly above the level of the head. The child, after thorough preparation, is anesthetized in the recumbent position. The scalp is done up firmly in a towel wrung out of antiseptic solution. When complete anesthesia is obtained, the chloroform mask is removed and the mouth gag (Holmes) introduced, and, while the child is still lying on its back, the hypertrophied faucial tonsils, if present, are liberated by a blunt dissector from any adhesions which may bind them to the faucial pillars. The child is then quickly turned on its left side, the left arm and shoulder are drawn back so that

the former lies on the table behind the child, the right arm is grasped near the shoulder joint by an assistant on the opposite side of the table, who lifts that half of the shoulder girdle away from the chest so as to secure ample breathing space and at the same time to steady the child. The mouth gag is reintroduced into the right side of the mouth by the principal assistant, who manages the gag and slightly extends and steadies the head, the face is brought even with the left edge of the table or even slightly over the edge, and the operator, equipped with an electric forehead mirror and seated on a stool of medium height on the left side of the table, removes the adenoid hypertrophy quickly and thoroughly with the Gottstein curette, or some modification of that instrument, and subsequently examines the nasopharynx with the index finger of the left hand and removes with curved scissors and forceps any shreds or tags of the growth, or of the pharyngeal mucous membrane that may have been stripped up, as may rarely occur. The faucial tonsils are then removed, if necessary, with the cold snare or, if soft and ragged, with the curette, the adenectomy having been thoroughly done so quickly as to allow an ample emergence from under the influence of the anesthetic. As soon as the hemorrhage ceases, the patient is rolled over into the supine position, the left cheek cleaned from the few flecks of blood that are on it, the towel removed from the head, and he is carried to his bed from which he is released the next day, to remain in his room in the hospital for three or four days. At the end of this time, all danger from a possible secondary hemorrhage is over and a healthy granulating surface has covered the wound and can resist to the utmost any accidental infection that might be encountered in the street or in the home. By this method of performing the operation, it will be observed that the position of the patient adds nothing to the ordinary dangers of the anesthetic, the force of gravitation does not add to the burden of the heart, the neck is straight, the respiration is not embarrassed by "embracing" the chest or "fixing" the arms, or by the pharynx filling with blood which is likely to find its way into the windpipe. That the position of the head is such that all the hemorrhage finds its way out of the nose or, when that becomes blocked by soft clots, out of the mouth, the inner surface of the left cheek forming the floor over which it travels to the left angle of the mouth. In this way, the field of operation is kept so clear that the operator can at all times see the posterior pharyngeal wall or can easily clear it with a wad of cotton on a sponge holder and can detect and remove any shreds that tend to make the operation imperfect, and the amount of blood lost can be accurately appreciated as it drops into a white stone receiver on the floor between the feet of the operator and none can find its way into the stomach to deceive the surgeon as to the volume of the hemorrhage and to annoy the patient after recovery from the anesthetic by producing emesis and possibly a secondary hemorrhage excited by the latter.

55. **Mastoid Operation.**—Jackson maintains that the opening of the mastoid is justifiable in acute purulent otitis media, in the absence of symptoms of mastoid envolvement, under one or more of the following conditions: When the discharge shows no sign of abatement after having persisted for a period of eight weeks, more or less, as judgment in the individual case may dictate; usually less in streptococcal infections; when there are occasionally, slight temperature rises, irritability of temper, malaise, fetid breath, etc., otherwise unaccounted for; when the social position of the patient makes it certain that the ear lesion will become chronic from neglect; in violent suppurations which threaten the hearing, if not the life, to delay is dangerous; when dependence on drainage through the canal becomes hazardous for any reason, such as swelling of the canal; when patients are going into remote districts or on a sea voyage, to allow them to run the risks of defective drainage is unwise; when cerebral or labyrinthine symptoms, such as headache, nausea, vomiting, vertigo, etc., are present, even though drainage seems ample, for the risk of delay here is great. If not due to actual pyogenic extensions, posterior drainage will promptly terminate the danger. In closing, Jackson offers the following propositions:

1. If an acute suppurative otitis media be operated on before inflammatory processes have worked lasting pathologic changes in the ear, we can in practically every case cure the patient—that is, stop the discharge, restore hearing, cure or prevent tinnitus. After inflammatory exudates have worked permanent changes, no surgeon on earth can restore hearing, or cure tinnitus. Cure the discharge, he probably can in almost every case. How? By doing a radical operation. Then why not do a simple mastoid in the first place?

2. To look over the text books and the periodical literature, one would suppose that the only pyogenic extension of purulent otitis media is by way of the mastoid cells. Yet, we all see occasional cases of intracranial extension through the tympanic roof. Are we then justified in considering mastoid empyema the only indication for opening the mastoid? May we not say that it is at times demanded solely for posterior drainage to prevent intracranial pyogenic extension?

3. The risks of operation are practically nil. The risks of postponement are great. To operate after an acute pyogenic invasion has infected the arachnoid, pia, and fluids is a forlorn hope.

4. May we not also say that opening the mastoid for posterior drainage and cure of acute suppurative otitis is justifiable to prevent loss of hearing, to prevent the patient drifting into a chronic suppurative otitis media, with its years of dread and misery, its pernicious anemia, leucocytosis, tinnitus, deafness, facial palsy, brain abscess, meningitis?

Physician and Surgeon, Ann Arbor.

May.

59 Differential Diagnosis and Treatment of Pott's Diseaes. J. Ridlon, Chicago.
60 Pathologic Fatigue and Its Treatment. I. H. Neff, Pontiac, Mich.

Texas Medical News, Austin.

May.

61 Outside View and Criticism of Medical Character and Legislation. J. H. Bell, San Antonio, Texas.
62 Death from Chloroform Anesthesia. W. Keiller, Galveston, Texas.

Journal of Medicine and Science, Portland, Maine.

May.

63 Paralysis in Children. N. J. Gehring, Portland.
64 Treatment of Nervous Insomnia. G. Meier, New York.

The Ophthalmic Record, Chicago.

May.

65 Injuries from Bursting of Locomotive Water and Oil Gauges. C. D. Conkey, Superior, Wis.
66 Interstitial Keratitis. J. W. Hildrup, Philadelphia.
67 Parinaud's Conjunctivitis. O. A. Griffin, Ann Arbor.
68 Papilloma of the Conjunctiva. R. H. Johnston, Baltimore.
69 Case Simulating Toxic Amblyopia. J. W. Pancoast, Philadelphia.

Colorado Medicine, Denver.

June.

70 What Is Doing in America in the Fight Against Consumption. A Zederbaum, Denver.
71 Sources of Infection in Tuberculosis. W. C. Mitchell, Denver.
72 Mixed Infection of Phthisis. G. R. Pogue, Greeley.
73 Fever of Phthisis; Its Etiology, Sequels and Treatment. J. F. McConnell, Colorado Springs.
74 Suggestions to the General Practitioner Regarding the Successful Practice of Medicine. J. F. Kearns, La Junta.

Western Medical Review, Lincoln, Neb.

May.

75 He's Only a Doctor. P. E. Plumb, Gothenburg, Neb.
76 Surgical Enthusiasm; Is It Declining? S. C. Beele, David City, Neb.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

July.

77 Needs and Advantages of an International Congress of Military Surgeons. N. Senn, Chicago.
78 Camp Sanitation. H. A. Arnold, Ardmore, Pa.
79 United States Naval Medical School. R. A. Marmion, U. S. N.
80 Military Hygiene; Its Theoretical and Practical Study in the Regular Army and Militia Forces. R. Smart, U. S. N.
81 Field Medical Organization. H. L. Gilchrist, U. S. A.

Southern Medicine and Surgery, Chattanooga, Tenn.

June.

82 Tuberculosis Cutis. J. M. King, Nashville, Tenn.
83 Eczema—Its Symptomatology. Etiology and Diagnosis. T. W. Murrell, Richmond, Va.
84 Treatment of Eczema. F. H. Beadles, Richmond, Va.
85 Diphtheria. J. P. Blankenship, Maryville, Tenn.

Providence Medical Journal.

May.

86 Annual Address Before the Providence Medical Association. G. S. Mathews.
87 Francis Joseph Gall. J. E. Donley, Providence, R. I.
88 Bacteriology of Diphtheria. F. P. Gorham.
89 Municipal Control of Diphtheria. C. V. Chapin, Providence, R. I.

The Medical Age, Detroit, Mich.

May.

90 Preliminary Report of a Case of Lichen Scrofulosorum. N. E. Aronstam, Detroit, Mich.
91 Abdominal Diagnosis. H. E. Randall, Lapeer, Mich.
92 Early Diagnosis and Early Treatment of Otitis Media. N. C. Steele, Chattanooga, Tenn.

Medical Fortnightly, St. Louis, Mo.

May 25.

93 Differential Diagnosis of Ureteral Calculus from Pain. B. Robinson, Chicago.
94 Relation of Man to Nature (A Study Prompted by "Testimonies of the Sepulchres"). A. S. Ashmead, New York.
95 "Give and Take of Service." F. P. Norbury, Jacksonville, Ill.
96 General Treatment of Nervous Diseases. A. D. Young, Oklahoma City.

Buffalo Medical Journal.

June.

99 Review of Tuberculosis Problem. DeLancey Rochester, Buffalo, N. Y.
100 Metrorrhagia in Interstitial Nephritis. C. G. Cumston, Boston, Mass.
101 Treatment of Acute Otitis Media. W. S. Renner, Buffalo, N. Y.

Journal of Medical Society of New Jersey, Newark.

May.

102 Notes and Observations on the Etiology and Pathology of Lobar Pneumonia. H. S. Carter, New York.
103 Symptoms and Diagnosis of Acute Lobar Pneumonia. N. B. Potter, New York.
104 Treatment of Lobar Pneumonia. N. R. Norton, New York.
105 Considerations of Facial Spasm. J. L. Corning, New York.
106 Plea for a More Careful Examination in Rectal Cases. A. H. Lippincott, Camden, N. J.
107 Congenital Heart Disease. E. Holmes, Englewood.
108 Municipal Milk Inspection with a Note on Tuberculous Milk. W. S. Green, Camden.
109 Can Outbreaks of Measles be Controlled? T. N. Gray, East Orange, N. J.
110 Case of Meningitis (Typhoid or Cerebrospinal), Illustrating Difficulties of Early Diagnosis. J. E. Moore, Bridgton, N. J.
111 Intravenous Use of Formalin in Bacteriemia. H. A. Pulsford, South Orange, N. J.

The Canadian Journal of Medicine and Surgery, Toronto.

June.

112 The Necessity of Physical Health in Acquiring an Education. A. Thompson, Strathroy.
113 The Treatments of Catarrh, Especially Postnasal Catarrh. W. Erwin, Philadelphia.

Fort Wayne Medical Journal-Magazine.

May.

114 Medical Expert Evidence: Is a Radical Change in the Present System Advisable? J. Morris, Jr., Indiana.

Albany Medical Annals, Albany.

June.

115 Public Health Laboratory. H. D. Pease.

Journal of the Mississippi Medical Association, Vicksburg.

June.

116 Race Suicide. J. W. Young, Grenada.
117 Tetanus of the Newborn, with Report of Three Recoveries. M. J. Alexander, Tunica.
118 Summer Diarrhea of Infancy and Childhood, with Recent Investigations and Findings. T. C. Sexton, Laurel.
119 Medical Ethics. N. L. Clarke, Meridian.

New York State Journal of Medicine, New York.

June.

120 President's Address. H. Van Hoevenberg, Kingston, N. Y.
121 Bacteriologic Findings in the Spinal Fluid of Fifty Patients with Cerebrospinal Meningitis. T. W. Hastings, New York City.
122 Few Considerations in the Treatment of Various Cardiac Conditions. A. Lambert, New York City.
123 Treatment of Acute Lobar Pneumonia. R. Van Santvoord, New York City.
124 Case of Miliary Tuberculosis. R. E. Mitchell, Middletown, N. Y.
125 Food and Drug Adulterations. C. I. Redfield, Middletown, N. Y.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

June 17.

1 *Acute Abdominal Symptoms. W. W. Cheyne.
2 Dilatation of the Gall Bladder Simulating Ovarian Cyst. A. Doran.
3 *Surgical Notes on Tuberculosis of the Kidney. H. A. Kelly.
4 Constriction of the Ureter. K. W. Monsarrat.
5 Value of the Use of a Shadowgraph Ureteric Bougie in the Precise Surgery of Renal Calculus. E. Fenwick.
6 *One Hundred Consecutive Laparotomies for Intussusception in Children. P. B. Clubbe.
7 *Curability of Hernia at all Ages by Operation. E. Deanesly.

1. **Acute Abdominal Symptoms.**—Cheyne discusses the differential diagnosis of what is called an acute abdominal illness, taking, in their order, pain, tenderness, abdominal rigidity, vomiting, collapse, rigor, pulse, temperature, gas, general condition of the patient, previous and after history, distension of the abdomen, and relative frequency. During the last three years, the total percentage of these acute abdominal cases admitted to the St. Thomas Hospital was as follows: Appendicitis and its complications, 37 per cent.; intestinal obstruction, 24 per cent.; intussusception, 15 per cent.; perforations of the alimentary tract, 11 per cent.; pelvic and gynecologic cases, 6 per cent.; abdominal abscesses, other than of the appendix, 3 per cent.; remainder, 4 per cent.

3. **Tuberculosis of the Kidney.**—Among the alternatives to be borne in mind in making a diagnosis of tuberculosis of the kidney, Kelly mentions the following:

1. Is the organism found the smegma bacillus? How was the urine secured? Was it by voiding or by catheterization?
2. Given the tubercle bacillus in the mixed urines, from which side does it come? Determine by catheterization the appearance of the ureteral orifice and the thickened ureter.
3. Is the opposite side entirely free from disease? Bear in mind that a simple pyelitis is not infrequent in the opposite kidney.
4. Bear in mind that the opposite ureter may show marked thickening (periureteritis) and yet the kidney be free from tuberculosis.
5. Note carefully to what extent the bladder is affected as having an important bearing on the operation and the subsequent treatment.
6. Determine the urea coefficient of the opposite kidney. Is it able to support life?
7. Look carefully for disease elsewhere. Is there a tuberculosis of the genital organs? Is there any pulmonary or glandular tuberculosis?
8. In injecting guinea-pigs remember that tubercle bacilli may pass out of the bladder, if your patient has phthisis, without injury to the kidney.
9. Remember that the enlarged kidney found in the loin may be the one functionally enlarged and, therefore, the only sound organ. Twice has such a kidney doing all the work of the body been taken out. There is a great risk of making this mistake.

6. **Intussusception in Children.**—Clubbe has performed 100 laparotomies for intussusception in children, with 63 recoveries and 37 deaths. The relative frequency of the various forms was as follows: Ileocecal, 64 patients, 43 cured, 21 died; ileocolic, 12 patients, 7 cured, 5 died; double, 20 patients, 11 cured, 9 died; colic, 3 patients, 2 cured, 1 died; enteric, 1 patient, 1 died. Clubbe employs the side incision, except when the mass is in the transverse or descending colon, when the incision should be made in the middle line, the umbilicus being the center of the cut. To close the abdomen, he nearly always uses through-and-through silkworm gut sutures with a Reverdin's needle. After the operation, the patients are given morphin, 1/40 to 1/20 grain, which is repeated, if necessary. Strychnin is given hypodermically until the immediate shock passes; sometimes salines. Within twelve hours, the colon is washed out with a weak solution of permanganate of potash, which nearly always produces a bowel movement.

7. **Curability of Hernia at All Ages.**—During the course of three years, Deanesly performed 142 hernia operations on 130 patients, in twelve of whom operations were performed on both sides. The youngest patient was 3 months, the oldest 70 years. Thirty-four patients were under 15 years, and 11 over 50 years. Of those under 15, 14 were infants under 2 years. Excluding strangulated cases, there was only one death, from pneumonia in an infant of 18 months old after a double operation. Eleven operations were for femoral hernia, all the rest for inguinal hernia. Of the latter, 3 were "direct," the remainder of the ordinary oblique variety. In 15 cases the patients could not be traced beyond one year, and their condition is unknown; but all were told to present themselves in case of return of the hernia. The remainder were all communicated with two years after the operation, and of these a few had died, without recurrence, from various causes unconnected with the hernia. Recurrence has occurred in 6 cases only, in every case less than twelve months after the operation. All six were cases of inguinal hernia, the femoral hernias having been found sound at the end of two years. Of the six relapses, in one case, a woman with a violent chronic cough, a small ventral hernia formed at the upper end of the scar. Three were ordinary inguinal herniæ, of moderate size, in healthy young men. One was a direct inguinal hernia in an elderly man. One was a small inguinal hernia in a boy of 8. This patient was operated on again, and remains free from recurrence fifteen months after the second operation. In all these cases, except the first, in which it was an ordinary ventral hernia, the relapse precisely resembled the original hernia, and a new inguinal sac of peritoneum had been formed. In these cases it is probable that the original pouch had not been completely obliterated, owing

to a faulty performance of the original operation, and thus rendered the formation of a new hernia possible. In no case was the new hernia as large or as troublesome as the original one, and in all it was easily controlled by a truss.

The Lancet, London.

June 17.

8 Indications for Operation. Morison.
9 Forty Cases of Ureteral Calculus in which the Roentgen Diagnosis was Confirmed by the Recovery of the Calculus. C. L. Leonard.
10 Advantages of a Purin-free Diet. W. A. Potts.
11 Case of Infantile Splenic Anemia. S. G. Scott.
12 *Rapid General Myasthenia Gravis. H. W. Dodd.
13 *Simple Technic for Enumeration of Organisms in Fluids. W. H. C. Forster.
14 Seven Cases of Beriberi. P. N. Gerrard.
15 Fatal Case of Precipitate Labor. H. E. Rayner.

12. **Rapid General Myasthenia Gravis.**—The case reported by Dodd and Woodwark was most typical, and showed such a rapid progress that in four weeks, from a strong, healthy man, the patient became so extremely weak that he actually fell and could not raise himself. The onset of the trouble appeared to have followed an attack of influenza. A difficulty he had in feeding himself is believed to have added somewhat to his rapid increase in weakness. His mental condition was remarkably acute; there was a certain depression of spirits and a tendency to suspicion. He was treated with the usual tonics, but failed to improve. He remained under treatment for ten days, when he disappeared.

13. **Simple Technic for Enumeration of Organisms in Fluids.**—The method described by Forster is a modification of the technic introduced by A. E. Wright for the estimation of the number of living organisms in a given culture. The following is the apparatus required: Three sterile diluting pipettes; three sterile watch glasses; eight agar slopes numbered from 1 to 8 consecutively; eight gelatin slopes numbered from 1 to 8 consecutively, and a vessel containing sterile water. The stem of the pipette is graduated in ten divisions of five cubic millimeters each, the remaining graduation marks indicating 450 cubic millimeters and 500 cubic millimeters, respectively. The safety chamber is dispensed with, the shank of the pipette being merely bent to a right angle in the blow-pipe flame. The steps of the operation are as follows:

> Four hundred and ninety-five cubic millimeters of sterile water are measured into each watch glass. This quantity is obtained by filling the pipette up to the 500 cubic millimeter mark and withholding five cubic millimeters when injecting into the watch glass. From the water to be examined five cubic millimeters are removed with the pipette—care being taken not to soil the pipette above the five cubic millimeter mark—and added to the contents of the first watch glass. This gives a dilution of 1 in 100. The contents of the watch glass are then thoroughly mixed with the pipette, and from this dilution 100 cubic millimeters (obtained by filling twice up to the 50 cubic millimeter mark, interspacing with an air bubble) are planted out in the gelatin and agar tubes numbered 3. Similarly, 10 cubic millimeters are planted out in the tubes numbered 4. From the 1 in 100 dilution five cubic millimeters are then transferred to the second watch glass, giving a dilution of 1 in 10,000. With the same pipette 100 cubic millimeters and ten cubic millimeters of the original water are planted out in the tubes numbered 1 and 2 respectively. The first pipette is then laid aside and another one is taken in hand. The contents of the second watch glass are thoroughly mixed and 100 cubic millimeters and ten cubic millimeters are planted out in the tubes numbered 5 and 6. From the 1 in 10,000 dilution five cubic millimeters are transferred to the third watch glass giving a dilution of 1 in 1,000,000. The third pipette is now taken in hand, and after thorough mixing 100 cubic millimeters and ten cubic millimeters of this dilution are planted out in the tubes numbered 7 and 8. If it is only desired to ascertain the limits within which the number of organisms per cubic centimeter must lie then the tubes are simply incubated in the vertical position and the results are interpretated as follows: Growth in tube 1, but not in tube 2, would place the number of organisms per cubic centimeter between 10 and 100. Growth in tube 2, but not in tube 3, would place the number of organisms per cubic centimeter between 100 and 1,000, and so on, the limits adopted being those in general use for the classification of waters by the number of contained organisms. If it is desired to know the actual number of organisms in terms of 10, 100, 1,000, etc., it will be necessary to distribute the water planted out over the surface of the medium and to incubate the tubes in the sloping position in order to prevent the accumulation of organisms at the foot of the slope. If preferred the quantity of water planted out may be spread over the surface of the medium with a glass rod, but in actual practice I have found this to be unnecessary as in the case of the larger quantities even distribution can be obtained by manipulation of the tube, while in the case of the smaller quantities sufficient distribution can be obtained by means of the pipette at the time of planting out.

Journal of Tropical Medicine, London.

June 1.

16 Inquiry into the Etiology and Pathology of Beriberi. H. Wright.
17 Case of Hematuria. A. F. Cole.

Glasgow Medical Journal.

June.

18 Report and Description of Specimens of Five Cases of Uterine Myoma and Three Cases of Ovarian Dermoid Tumor. J. K. Kelly.
19 *Appendicitis in Children. R. C. Dun.
20 The Amylolytic Action of Urine. G. H. Clark.

19. **Appendicitis in Children.**—Dun emphasizes the fact that appendicitis is not an uncommon disease in children; that it does not at first tend to be of a more serious type than in adults, but that the slighter cases are often difficult to diagnose and, therefore, apt to be overlooked. Dun urges a closer attention to recurrent attacks of colic, and points out the frequency with which diarrhea and bladder irritation are associated with inflammation of the appendix in childhood. When several slight attacks of appendicitis have occurred, the removal of the appendix is the best and safest treatment. When localized peritonitis is present, operation should be delayed until the quiescent period is reached, but pus formation must always be suspected and carefully watched for during the waiting period. Should abscess formation take place, immediate operation is demanded, but undue risks should not be run in attempting the removal of a firmly adherent appendix under such circumstances. The administration of purgatives and opium is not without risk, and is best avoided.

Annales des Mal. Génito-urinaires, Paris.

Last indexed page 139.

22 (XXIII, No. 5.) Etude clinique sur la pathogénie et la sémiotique de l'albumine. E. Lancereaux.
23 (No. 6.) *La séparation endovésicale des urines. Sa valeur au point de vue du diagnostic. T. Tuffier and A. Mauté.
24 *Rectal Palpation in Diagnosis and Treatment of Acute Gonorrheal Urethritis. Le toucher rectal. P. Lebreton.
25 Des uréthrites aigues non-gonococciques. T. Vannod (Berne).
26 De l'électrolyse dans le traitement des rétrécissements de l'urètre. Alcayde.
27 (No. 7.) Les affections tuberculeuses des reins (of kidneys). L. Bernard.
28 *Dispositif nouveau pour redresser les images cystoscopiques (to straighten view through cystoscope). P. Denis.
29 (No. 8.) Fistules rénales consécutives à la néphropexie. F. Gardner (New York).
30 De l'intervention opératoire dans les néphrites et dans certaines affections médicales du rein (of kidney). A. Yvert.
31 Quelques mots sur l'onanisme. C. Féré.
32 La rachistovainisation dans les maladies des voies urinaires. P. Héresco and L. Strominger.
33 (No. 9.) Traitement des prostatiques en rétention incomplète chronique aseptique avec dilatation de la vessie (dilatation of bladder in treatment of hypertrophied prostate). Nicolich (Trieste). See page 588 of last volume of The Journal.

23. **Intravesical Separation of Urine from the Kidneys.**—Tuffier's experience has been favorable with the intravesical segregators of Luys and Cathelin, and he thinks that this mode of examination has won a definite place for itself. To obtain the most instructive findings, the conditions should be reproduced identically at each test, and the patient should take nothing but milk during the preceding four or five hours. He analyzes the findings when the segregated urine is examined every half-hour. It is impossible to locate a tumor in the kidney exclusively from the functional urinary findings. Many causes are liable to reduce the output of a kidney occasionally, such as mere hysteric nephralgia alone. There is considerable sediment, even in normal urine, after introduction of a separator into the bladder. The ease and simplicity of the technic and the instructive data obtained by the method commend it for general adoption on condition that the points in which it fails are appreciated, that allowance be made for them, and that too much is not expected from mere endovesical segregation of the urine.

24. **Rectal Palpation in Acute Urethritis.**—Lebreton has practiced rectal palpation in 200 cases of acute gonorrheal urethritis. The infection was less than a week old in 73; less than two weeks in 31; less than three weeks in 18; less than a month in 21; less than two months in 30; less than a year in 24, and from this to two years in 3. He found that the posterior urethra was invaded much oftener than he had supposed, and very early. The proportion in the first week was 58.9 per cent.; in the second week, 77.42 per cent., and by the third or fourth week fully 88.8 per cent. Palpation and mas-

sage through the rectum are useful for diagnosing and treating such cases, especially with "expression" of the prostate. If pressure with the finger fails to elicit pain in the region of the prostate, massage is useless and even dangerous, as it irritates a previously more or less sound organ. The same is true when pressure elicits pain only on the median line, showing that the prostatic urethra alone is involved. The massage should never be done without preliminary copious lavage of the bladder. The palpation and massage should be guided by the patient's sensations, keeping it within bounds so as not to cause very much pain.

28. **To Straighten View Through Cystoscope.**—The cystoscopic picture is received on a small square of ground glass with a line traced horizontally across it. When the glass is turned over and the line held parallel to the sagittal plane, the picture showing through on the smooth side of the glass is identical with the true picture in the bladder.

Berliner klinische Wochenschrift.

34 (XLII, No. 21.) *Zur Bewertung des Tremors als Zeichen des Alkoholismus. Fürbringer.
35 *Zur Kenntnis der Hernia uteri inguinalis und der histologischen Veränderungen verlagerter Ovarien. R. Birnbaum.
36 *Hydrotherapie bei Syphilis und Haut-Krankheiten (cutaneous affections). C. Bruhns.
37 Balneologic Laboratories in Health Resorts.—Ueber Aufgaben und Ziele der balneologischen Laboratorien in den Kurorten. E. H. Kisch.
38 *Zur Behandlung der Herzverletzungen (injuries of heart). A. Neumann.
39 *Large Doses of Olive Oil in Treatment of Stomach Affections.—Zur Frage der Verwertbarkeit grösserer Dosen Olivenöl in der Therapie der Magenkrankheiten. O. Blum. (Commenced in No. 20.)
40 *Cytorhyctes luis Siegel. F. E. Schulze.
41 Zur Diagnose und Behandlung des Kehlkopfkrebses (laryngeal cancer). G. Finder.
42 *Marmorek's Antituberkulose-Serum (official report). E. Lewin.
43 The Red Cross and Prevention of Epidemics.—Der preussische Landesverein vom Roten Kreuz und seine Mitwirkung bei der Abwehr der Seuchengefahr. Kimmle.
44 Schillers Beziehungen zur Natur und Heilkunde (relations to natural science and medicine). C. Posner. Id. R. Greeff.

34. **Tremor as Sign of Abuse of Alcohol.**—Fürbringer states that in more than half of 500 persons examined the tremor observed had no alcoholic foundation. Severe tremor usually coincided with alcoholism, the proportion of probabilities in favor of the latter being 91.5 per cent., but the moderate degrees proved to be no criterion as to the liquor habit. He noticed that the female sex displayed a greater tendency to tremor than the male.

35. **Inguinal Hernia of Uterus.**—Birnbaum has been able to find only 23 cases in the literature. He reports in detail a case personally observed. It was distinguished by the fact that the ovary was included also in the hernia. The genital organs had rather an infantile character, and the patient had never menstruated, although married for eleven years. The hernia was first noticed at about the age of 5. It grew to be somewhat larger than a walnut and could be pushed down into the labium.

36. **Hydrotherapy in Cutaneous Affections and Syphilis.**—Bruhns expatiates, in the course of this article, on the benefit frequently derived from hot baths in pruritus, especially hot sitz baths in pruritus ani.

38. **Treatment of Heart Wounds.**—Neumann's experience has been in favor of drainage of the pericardium rather than immediate suture. In a case which he reports in detail, a man of 53 had been stabbed in the right ventricle, and the edges of the wound were so inflamed and the general condition so desperate that suture was out of the question. He passed a needle through the right edge of the wound in the pericardium and of the wound in the myocardium, from without inward, bringing the needle out through the other side of the wound. Two threads were introduced in this way, a sponge was applied over the wound and the ends of the thread tied over the sponge. The tampon was thus outside the heart and was held firmly by the threads. The patient succumbed in forty-five minutes, but the technic fully established its value. In another case, the stab wound was in the fifth and sixth interspace, and the costal cartilage and intercostal artery had been severed. The knife had entered the pericardium, which was full of partly coagulated blood. As no lesion could be found in the heart proper, he inserted a long strip of gauze, passing it around the heart as high as the auriculoventricular boundary. The heart tolerated this drainage without disturbance; the pulse was quiet and regular by the next day. The gauze was removed on the twelfth day, and the patient has been in good health for the twelve years since. He has never exhibited symptoms typical of adhesion of the sheets of the pericardium, although in the first four years there were occasional attacks of vertigo, etc., suggesting irritation of a hystero-epileptic center.

39. **Large Amounts of Olive Oil in Treatment of Stomach Affections.**—Blum reports experience with large amounts of olive oil in treatment of stomach affections at Ewald's clinic. It was found that only a few persons were able to take the oil without repugnance. In cases of hyperchlorhydria, with or without hypersecretion, the oil had a favorable action by reducing the values of acid. It promoted natural movements of the bowels and general nutrition. No favorable influence could be discovered in cases of ulcer in stomach or duodenum or organic stenosis of the pylorus. The oil is absolutely contraindicated in extreme stenosis. In one case of pyloric spasm the oil failed entirely. The particulars of the 18 cases in which a course of oil was tried are given in full. Renewed hemorrhage followed in 2 cases of ulcer, possibly owing to some irritating action from the oil on the ulcer.

40. **Siegel's Cytorhyctes Luis.**—Schulze gives the particulars of the parasite which Siegel has recently reported as found in smallpox, foot and mouth disease, scarlet fever and syphilis. A high-power microscope, magnifying 1,000 times, is necessary to detect them. They show up best in the kidneys three weeks after inoculation of rabbits with syphilis. They range in size from .5 to 2 microns, and are seen as flattish, long, pear-shaped bodies, actively motile, curling into a ring occasionally. The smaller ones are rounder, with a flagellum. They take the hematoxylin-azure stain, and this reveals from 2 to 16 nuclei.

42. **Antituberculosis Serum.**—See news columns, page 52.

Centralblatt f. Chirurgie, Leipsic.

Last indexed XLIV, page 1969.

45 (XXXII, No. 18.) *Ein neues Verfahren zur Radikal-Operation grosser Schenkelbrüche (large femoral hernia). E. A. Polya.
46 Uber Orchidopexie bei inguinalem Kryptorchismus. de Beule.
47 (No. 20.) Zur Technik der Amputatio penis (Witzel's technic). P. Janssen (Bonn).
48 (No. 23.) *Zur Blasennaht nach der Sectio alta (suture of bladder). C. Hofmann.
49 (No. 24.) *Zur Technik der Knie-Gelenk-Arthrodese (scraping out knee joint). H. Turner (St. Petersburg).

45. **Operation for Large Femoral Hernia.**—Polya gives the details of a technic for obliterating the femoral canal by plugging it with the entire thickness of the sartorius muscle. The operation has been performed twice at von Herczel's clinic at Budapest with very satisfactory results. One of the patients succumbed not long after to an intercurrent infectious disease, and the autopsy demonstrated the perfect anatomic results obtained by this technic. The incision is in the shape of a T or inverted L. The saphena is ligated and severed, and the hernial sac tied and buried if possible. The sheath of the sartorius is slit across below the level of the canal, and the sartorius muscle is cut a trifle above this slit. The proximal stump of the muscle is then worked through the saphenous opening above the large vessels and sutured, after being pushed as far into the canal as it can be made to go. Two or three stout catgut threads are passed through Poupart's ligament, the implanted sartorius and the sheath of the pectineus, and the muscle is pulled deep into the femoral canal as the threads are tied. A flap is made by cutting the fascia lata, and it is turned back and sutured to Poupart's ligament, to the sheath of the pectineus and to the sartorius below.

48. **Suture of Bladder After Suprapubic Incision.**—Hofmann has long been preaching the necessity for systematic treatment of the bladder to reduce inflammation before attempting surgical intervention on the organ. It consists of absolute bed rest, possibly for several weeks, with antiseptics internally,

hydropathic packs, and rinsing of the bladder. He used to believe that tamponing of the prevesical space and the permanent catheter were indispensable, but he has learned that the well-sutured wound is always water-tight for the first few days. If the prevesical space is partially obliterated by suturing the bladder to the abdominal wall, adhesions form between the outer layer of the bladder wall and the fascia in the abdominal wall, just as in similar operations on stomach or intestines. In his numerous experiences, he has never had any infiltration of urine when these precautions were taken. In case it should occur, the pain would at once give the alarm and the prevesical space could be tamponed then as well as at first. He has also discarded the permanent catheter. Spontaneous urination is sometimes observed, but generally the catheter must be used twice a day, especially at first, as the fixation of the bladder to the abdominal wall entails some residual urine. The permanent catheter must have an unfavorable influence on the healing of the wound; it is far preferable to introduce the catheter anew twice a day. An approximately normal condition of the urine before the operation is indispensable to the success of this technic.

49. **Arthrodesis of Knee.**—Turner describes the technic of the operation which aims to induce ankylosis in an abnormally lax joint. Hagen-Torn has been perfecting the technic, and Turner here gives illustrations of two instruments, resembling "safety razors," which much facilitate the operation. He also mentions a number of minor points, commending Textor's arc incision as the simplest and most convenient. His results have been excellent in his 15 cases.

Centralblatt f. Gynaekologie, Leipsic.

Last indexed XLIV, page 1969.

50 (XXIX, No. 18.) Zur Lehre vom Epithelioma chorioektodermale. L. Pick.
51 Increase of Hemagglutinins in Childbed.—Vermehrung der Hämagglutinine im Wochenbett. F. Schenk.
52 (No. 19.) Lutein Cells During Pregnancy.—Zur Frage der Luteinzellenwucherung in atretischen Follikeln während der Schwangerschaft. L. Seitz.
53 *Beitrag zur Kasuistik der intra-uterinen Fremdkörper (foreign bodies). C. Knoop.
54 *Zur Methodik der Sterilisation. K. Reifferscheid.
55 (No. 20.) *Zur Alexander-Adams'schen Operation. H. Fuchs (Kiel).
56 *Zur Anatomie und Genese der Kopfnickergeschwulst des Neugeborenen (congenital tumor in sterno-mastoid muscle). L. Pincus.
57 "Instrument und Methode Bossi" (reply to v. Bardeleben). Hammerschlag.
58 (No. 21) *Künstliche Sterilisierung (artificial sterilization). R. Chrobak.
59 Meine Eklampsie-Theorie (reply to Liepmann). A. Dienst.
60 (No. 22.) Gibt es ein Epithelioma chorioektodermale des Eierstockes (of ovary)? F. Michel.
61 *Experimental Study of Contractions of Isolated Uterus.—Experimentelle Methodik des Uterus im allgemeinen und die Registration der Kontraktionen seiner Hörner im besonderen. E. M. Kurdinowski.
62 (No. 23.) *Importance of Physical Properties of Child for Birth Mechanism.—Bedeutung der physikal. Eigenschaften, etc. H. Sellheim.
63 *Sectio cesarea an der Moribunden. H. Füth.
64 Die Methoden zur Herbeiführung der weiblichen Sterilität (artificial sterilization). Rissmann.
65 *Zur Dilatations—Frage. de Seigneux (Geneva).
66 (No. 24.) *New Pelvimeter.—Ein neuer Beckenmesser zur direkten Bestimmung des geraden Durchmessers des Beckeneinganges. A. Solowij (Lemberg).
67 *Zur Therapie der Hyperemesis gravidarum. R. v. Uhle.
68 Zur Frage der inneren Sekretion von Ovarium und Placenta. G. Fleck.

53. **Foreign Bodies in Uterus.**—Knoop relates the history of a hair pin which had been introduced in some way into the uterus four years after the menopause, but caused no disturbances for six years. Symptoms then developed suggesting cancer, but the discovery and removal of the hair pin restored conditions to normal. In another case a wad of crumpled newspaper was expelled during childbirth. It must have been in the vagina or cervix for some time before the onset of pregnancy.

54. **Artificial Sterilization.**—Reifferscheid reports a case in which excision of a piece of each tube, 2 cm. in length, and burying the uterine stumps under a fold of peritoneum failed to prevent conception later. Thread had been used instead of catgut to make the results more permanent. The operation had been done at the time of a Cesarean section.

55. **Alexander-Adams Operation.**—Fuchs reviews his experience with 220 cases in which this operation was performed. Time has gradually limited more and more its field of usefulness, so that the indication for it now is only simple, movable retroflexion in the rare cases in which any operation is required. For this condition, however, it is ideal.

56. **Origin of Congenital Tumor in Sternomastoid Muscle.**—Pincus published, ten years ago, a monograph on obstetric injuries of the sternocleido muscle. In addition to those therein described, he calls attention now to a congenital tumor which he had occasion to observe recently in a child born spontaneously under normal conditions. The child died of diarrhea not long after birth, and the microscope showed that the muscle tumor was of intrauterine inflammatory origin, a process of chronic interstitial myositis.

58. **Artificial Sterilization.**—Chrobak discusses the various indications which justify artificial sterilization of a woman. Chronic nephritis is one of them, but psychic disturbances, he thinks, can scarcely be included in the list, or only exceptionally, and only after the most serious deliberation on the part of the psychiatrist in charge of the case. In regard to tuberculosis, he ranks the interruption of the pregnancy on the same plane as cancer of the uterus in this respect. Incipient, curable tuberculosis is aggravated by a pregnancy, and the latter should be terminated at once, just as no one would delay a moment to remove the pregnant uterus when certain of its cancerous degeneration. To allow the pregnancy of a woman in incipient tuberculosis to continue until there are prospects of a viable child is compatible only with the belief that pulmonary tuberculosis does not make gigantic strides during pregnancy—and this belief is contrary to his views and experience. In advanced tuberculosis, the question of artificial sterilization must be decided by the physician for each individual case. Injuries of the uterus may afford an indication in certain cases in which rupture is liable to occur during a pregnancy. His experience has been very unfavorable with organs thus weakened by previous traumatism or lesions of various kinds, and especially by extensive operations, such as the removal of multiple myomata. Artificial sterilization is preferable to allowing the necessity for abortion in such cases.

61. **Experimental Study of Contractions of the Uterus.**—Kurdinowski gives an illustrated description of the technic by which he is able to study the motor functions of the isolated uterus and to register the contractions of the cornua. The work was done at the physiologic laboratories at Leipsic and Zurich on rabbits anesthetized by rectal injection of chloral.

62. **Birth Mechanism.**—Sellheim states that the fetus assumes the form of a cylinder to the utmost possible extent during delivery, in order to reduce friction to the minimum. At the same time, and for the same purpose, it turns on its axis to adapt itself to the birth passage.

63. **Cesarean Section on the Moribund.**—Füth remarks that he knows of only two cases of Cesarean section in extremis, reports of which have been published in this century. He adds a third to the list. The patient had a heart affection, and as labor began the heart symptoms became extremely threatening. Cesarean section was done at once, when the symptoms took a favorable turn. The patient lived for several days. The benefit observed in this case after extraction of the child, he says, should encourage others in similar cases not to wait until death has actually occurred, but to undertake the section early, not only to save the child, but also in the interests of the mother.

65. **Instrumental Dilatation.**—Seigneux' instrument has four branches which fold together into a small compass. They are operated by a thumb screw in the handle, and a graduated scale allows oversight of the amount of dilatation realized. The branches are in three sizes, narrow, medium and broad. The set of narrow branches is used first, and then, as the cervix becomes dilated, the sets of larger branches are substituted in turn. The details of the instrument are shown in six illustrations.

66. **New Pelvimeter.**—Solowij's measure consists of a scissors-like instrument with graduated scale between the rings of the handles. The blades terminate in a pair of branching antennæ with rounding tips. The distance between the tips is registered on the scale between the handles. When introduced into the pelvis, the longer, rear branch fits against the promontory and the other branch against the symphysis.

67. **Treatment of Hyperemesis Gravidarum.**—Uhle reports a case of protracted incoercible vomiting during the third month of pregnancy, persisting for weeks even after entire suspension of food or medicines by the mouth. The uterus was in pronounced anteflexion. After failure of all other measures, and as a partial preliminary to artificial abortion, a colpeurynter was placed in the vagina just beyond the entrance and moderately filled, thus lifting the uterus by pressure from below. The result was the immediate suspension of the vomiting; the patient was soon able to take a little milk. The colpeurynter was removed at night, but on recurrence of the vomiting was replaced the next morning, with the same successful results. It was removed again at night and there was no further trouble, the pregnancy progressing to a normal termination.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

69 (XXXI, No. 21.) *Einiges über die drohende Epidemie der Genickstarre (cerebrospinal meningitis). v. Leyden.
70 *To Designate Location of Apex Beat.—Wie ist bei Untersuchungen, besonders bei Gutachten, die Herzspitze topographisch zu bestimmen? A. Kirchner.
71 *Die Neurasthenie in Arbeiterkreisen (among wage-earners). P. Leubuscher and W. Bibrowicz.
72 *Die Cyklodialyse, eine neue Glaukomoperation. Heine.
73 *Cause, Prevention and Treatment of Appendicitis and Perityphlitis.—Ursache, Verhütung und Behandlung des perityphlitischen Anfalls. F. Karewski.
74 New Ready-to-Apply Dressings.—Ein neuer Einzelverband und eine neue Tamponadepatrone. A. Heermann.

69. **Cerebrospinal Meningitis.**—The epidemic at Königsberg in 1865 is described as witnessed by von Leyden. He refers in particular to the fulminating cases in which persons were stricken and fell dead at their work. He does not approve of baths for adults, as the slightest touch is so painful; repose, ice bags and nourishment, with morphin subcutaneously, he thinks, should be the main reliance.

70. **To Designate Location of Apex.**—Kirchner recommends that the heart apex be located by its distance from the median line and not from the nipple line, as the location of the latter differs so widely in different persons. If the apex beat is not perceptible, the apex can be located by light percussion; sagittal percussion gives more accurate findings than radial.

71. **Neurasthenia Among the Working Classes.**—The various sanitariums conducted by the Berlin National Sickness Insurance Society have had 1,564 cases of neurasthenia in their care since the first was opened in 1894. Of this number, nearly 16 per cent. were typesetters, nearly 10 per cent. cabinet makers, and 5 per cent. locksmiths. These three trades thus supply nearly 32 per cent. of the total material. In only 5.7 per cent. of the total number were there alcoholic antecedents, and in only 0.7 per cent. abuse of tobacco. The patients were generally between 25 and 45 years of age, and in three-fourths the neurasthenia was undoubtedly acquired. Early and adequate sanitarium treatment gives satisfactory results.

72. **Cyclo-dialysis, a New Operation for Glaucoma.**—In this communication from Uhthoff's clinic at Breslau, Heine describes a means of opening communication between the anterior chamber and the suprachorioidal space. After incising the sclerotic near the limbus, the ligamentum pectinatum is slowly pierced with a stiletto. No vitreous humor follows the gradual withdrawal of the stiletto, but by the second or third day the intraocular tension will be found much reduced.

73. **Prevention of Appendicitis.**—Karewski concludes his monograph with the remark that clinical experience and autopsy findings all confirm the assumption that enterocolitis is the common cause of appendicitis. That consequently every intestinal catarrh should be regarded as a serious affection requiring careful treatment to prevent trouble at the appendix.

Monatshefte f. praktische Dermatologie, Hamburg.

Last indexed XLIII, page 1508.

75 (XXXIX, Nos. 7-8.) *Mykosis fungoides und Leukämie. M. Pelagatti.
76 (No. 9.) Zur Technik der Urethral-Injektionen. Vajda.
77 Bemerkungen zu Brandweiners Fall von neurotischer Haut-Gangrän (of skin). Kreibich.
78 (No. 10.) Dermatotherapeutische und urologische Beobachtungen (observations). Weitlaner.
79 Drei Fälle von Pruritus nach Tabak-Genuss (pruritus after smoking). Bottstein.
80 (No. 11.) Zur Histologie des Hauthorns (keratoma). C. Philip.
81 Fall von Mykosis fungoides. J. Ullmann (Palermo).
82 *Changes in Skin with Kidney Affections.—Hautveränderungen bei Nierenkranken. A. Jordan.
83 (No. 12.) Zur Anatomie des Präputiums. E. Delbanco (Hamburg). (Commenced in No. 11.)
84 *Zur Tabes-Syphilisfrage im Anschlusse an einige mit manifester Syphilis verbundene Tabesfälle. J. Guszman.
85 Zur Therapie der Impetigines. Honcamp.

75. **Fungoid Mycosis and Leukemia.**—Pelagatti reports a case of the association of these two affections, suggesting the nosologic identity of the two processes. The patient was a man of 53 who presented the typical picture of fungoid mycosis, while the blood and the postmortem findings testified to the existence of myelogenic leukemia. Histologic investigation of the efflorescences on the skin revealed the features characteristic of metastases of the morbid process involving the bone marrow. He presents numerous arguments to sustain this view of the close connection between the mycosis and the leukemia, and brings up and answers a number of objections that might be urged against this assumption that the fungoid mycosis is merely the localization in the skin of a general leukemic process. The first symptoms noted had been itching and spots on the skin two years before death.

82. **Changes in Skin with Kidney Affections.**—Jordan refers to 3 cases of rebellious excoriations, pustules, local edema, pruritus or an eczematous eruption, observed in persons under treatment for a kidney affection. Local measures proved ineffectual, but the skin lesions subsided as soon as the kidney functions were regulated. The rebellious cutaneous affections were of comparatively long standing, but, thanks to the treatment of the kidneys, conditions were soon restored to normal, as far as the skin was concerned. He suggests that certain dermatoses might be classed as "albuminuric dermatoses," amenable only to measures directed against the underlying kidney affection. He believes that the latter has the tendency to render the skin more sensitive, and thus favors the development of cutaneous affections.

84. **Syphilis and Tabes.**—Guszman insists on the necessity for examining for possible tabes every patient presenting the manifestations of tertiary syphilis. When this is done systematically, an incipient tabes may be discovered and arrested by suitable treatment.

Münchener medizinische Wochenschrift.

86 (LII No. 19, May 9.) Die Pathogenese des Ikterus. D. Gerhardt.
87 Differentiation of Various Albumins from Same Organism by Precipitin Reaction: "Biologie Test." Präzipitinreaktion, etc. G. Forssner.
88 *Zur Frage der atonischen Magenerweiterung (dilatation of stomach). C. Wegele.
89 *Haemonephrose und Nierenkrebs (cancer of kidney). C. Hueter.
90 *Zur Behandlung des Heufiebers (hay fever). A. Denker.
91 *Zur Behandlung der Leukämie und Pseudoleukämie mit Röntgen-Strahlen. F. Lommel.
92 Beitrag zur Wirkungsweise der Edebohls'schen Operation (mode of action). Scheben.
93 Einfluss der Vibration auf das Faradisations-Gefühl (sensation). V. Schlapfer.
94 *Zur chemischen Imitation der biologischen Strahlenwirkung (action of rays). J. Schlachta.
95 *Notiz über eine neue Form der Zählkammer (blood counting apparatus). K. Burker (Tübingen).

88. **Dilatation of Stomach from Atony.**—Wegele has had three cases under observation in which the symptoms indicated typical dilatation of the stomach, presumably from pyloric obstruction. The motor insufficiency was of the second degree. The patients recovered under merely internal and dietetic measures, and have been in perfect health for years. This outcome speaks decidedly against the assumption of pyloric obstruction, he thinks, and in favor of a mere atonic ectasia as the cause of the trouble. This is a rare condition,

but it certainly occurs sometimes, occasionally in connection with some actual lesion. An atonic condition is the greatest obstacle to the success of a gastroenterostomy, and favors the vicious circle. When water is poured into the stomach it is promptly expelled in siphonage in case of ectasia from stenosis, but when the ectasia is due to atony the water comes out slowly and deliberately. Another argument in favor of the assumption of atonic ectasia is the analogy between it and acute dilatation of the stomach after gross errors in diet, as also the paralysis observed at times after trauma and laparotomies. The stomach remains relaxed and enlarged even when empty. Wegele has appealed to a number of surgeons for their experience in this line, but has obtained scanty data. Ectasia without organic pyloric stenosis was noted only in exceptional cases and then as an accompaniment to gastroptosis or chronic spasm of the pylorus. Rigid pyloric spasm is frequently observed, and its prompt subsidence under the surgeon's eyes, but he knows of no instance of tonic contraction of the pylorus on record. Ectasia from stenosis may vary in its intensity at different times, and transient improvement may be noted, but permanent recovery from this form of dilatation has never been attained by internal treatment alone.

89. **Hemonephrosis and Cancer of Kidney.**—Hueter reports a case which demonstrates that a rupture can occur in a cystic kidney with consequent severe hemorrhage without perforation into the abdominal cavity. The fact that the kidney can be palpated does not exclude the presence of a large hydronephrotic sac. Another remarkable feature of the case was that no blood was found in ureter or bladder, although hematuria had been noted for two months before the trauma. The patient was a cabinet maker, 50 years old, who, as the result of an apparently insignificant traumatism, had ruptured a cystic kidney, causing considerable hemorrhage. The congenital hydronephrosis in the hilum had become a hematonephrosis. Hueter can find only three similar cases in the literature. The microscope revealed cancerous degeneration in the apparently sound part of the kidney—further evidence of the value of hematuria as a sign of malignant disease in this organ.

90. **Massage of Nose in Hay Fever.**—Denker reports that he has absolutely cured eight hay-fever victims by massage of the mucous lining of the nose. By this means he was able not only to cure an existing attack, but to prevent its recurrence in following seasons. He first anesthetizes the sensitive mucosa by swabbing it with a mixture of 1 part cocain and .01 part adrenalin in 10 parts distilled water, using a cotton-wound nose sound for the purpose. The massage is done with this sound dipped in a 10 per cent. antiseptic oil. He commences with slow, light stroking of the inferior turbinate, gradually increasing the rapidity and the pressure and passing to the middle turbinate, and thence, if possible, to the superior, returning over the mucosa of the septum. The massage is completed in two or three minutes at first and in from three to four as the patient becomes used to it. The procedure is repeated through each nostril every day, supplemented, if necessary, by instillation of diluted laudanum in the conjunctival sac. He thinks that it is more logical to remove the cause than to attempt to combat the established affection by antitoxin or otherwise.

91. **Leukemia and Roentgen Rays.**—Lommel reports three cases of leukemia, one was the lymphatic form in a new-born child, fatal in a few days. The parents were healthy, but the blood findings soon after birth were 1 white to 1.03 red corpuscles, and the spleen and liver were much enlarged from lymphoid tissue accumulations suggesting metastases. The second patient was a farmer of 27 with pronounced myeloid leukemia, who improved remarkably under Roentgen treatment. In sixty-five days the number of leucocytes dropped from 554,000 to 12,000, while the reds increased. The general health improved and the patient gained considerably in weight for a few months, and regarded himself as completely cured. Six months later, however, the blood findings showed again the myelogenic leukemic tendency, the number of whites having increased to 46,220, although the general health was apparently perfect. The patient was advised to take another course of Roentgen exposures. The third case was one of pseudoleukemia, with extreme anemia, in a 2-year-old boy whose mother and sisters also exhibited a leukemic tendency with enlarged spleens. He improved very much under Roentgen exposures, but succumbed to intercurrent pneumonia a few months later. The postmortem findings indicated that the Roentgen rays had induced marked curative changes in the spleen, but nothing was found to suggest that the circulating blood cells had been directly influenced by the rays.

94. **Chemical Imitation of Biologic Action of Rays.**—Schlachta's experiments have confirmed those of Werner, mentioned on page 1888 of the last volume of The Journal. They both found that oxidized lecithin had the same action in experiments on animals as radioactivated lecithin, that is, lecithin exposed to the action of radium or Roentgen rays. It is still open to question whether this action is due to the presence of oxygen or an alkali. A suspension of lecithin in water, heated for four hours in the warm bath, showed the same unmistakable action, although not very pronounced.

95. **New Form of Blood-Counting Apparatus.**—Bürker of Tübingen enumerates the drawbacks of the ordinary Thoma-Zeiss apparatus as the difficulty of making it work faultlessly, the liability to uneven distribution of the blood over the field, the dependence of the findings on the air pressure, and the small area of the counting surface. These are all avoided in the new apparatus, which is proving extremely satisfactory. An article on the subject appeared recently in *Pflüger's Archiv.*, page 426.

Gazzetta degli Ospedali, Milan.

Last indexed page 143.

96 (XXVI, No. 22.) Electricity of Human Body.—Sulla attivita elettrica del corpo umana. C. Garibaldi and F. Mariani.
97 *Sulla patogenesi dell' ateromasia adrenalinica e dell' ateroma in generale. N. Marini.
98 Sulle infezioni gastro-enteriche dei lattanti (in infants). V. Maggioni.
99 Eziologia del morbo di Little. O. Broglio.
100 Hernia of Bladder.—Contributo alle ernie vescicali diverticolari. A. Cernezzi.
101 Brace for Habitual Luxation of Shoulder.—Contentivo delle lussazioni abituali della spalla. G. Cajozzo.
102 *Angiospasmo periferico ed uremia. A. Caprio.
103 (No. 25.) *Di un nuovo metodo di sieroterapia delle sifilide. L. M. Bossi.
104 Relations Between Chloroform Anesthesia and Elimination of Ureic Nitrogen.—Sui rapporti fra cloronarcosi ed eliminazione dell' azote ureico. N. Federici.
105 Errors in Freund's Test for Sulphuric Acid.—Erroneita del metodo Freund per la determinazione dell' acido solforico. E. Pittarelli.
106 Peculiar Course of Epidemic Suggesting Staphylococcus and Streptococcus Infection.—Decorso epidemico e polimorfo di un infezione col caratteri delle stafilococcie e streptococcie. G. Morelli.
107 *L' iodo nella tifoide. G. Campanella.
108 Sulla cura del tetano. A. Giannelli.
109 Eritema nodoso e porpora febrile. A. Valli.
110 *Post-typhoid Abscesses and Hypodermic Medication.—Contributo clinico sugli ascessi post-tifici e l'influenza su questi delle infezioni ipodermiche medicamentose. E. Basurgi.

97. **Causes of Atheroma.**—Marini has been experimenting on animals with adrenalin and thus inducing atheromatous degeneration. He explains the mechanism of its action and states that hypertension is the primary and efficient cause for both experimental and clinical endarteritis with atheromatous degeneration. The adrenalin induces the hypertension in the experiments. In the clinic the same effect is produced by toxic substances generated in the organism which have a peripheral vasoconstricting action. Nature strives to favor their elimination from the body by the hypertension induced.

102. **Peripheral Angiospasm and Uremia.**—The attack described by Caprio was evidently a form of uremia, an uremic equivalent. The peripheral angio-spasm was very pronounced, and the symptoms indicated impending acute edema of the lungs with acute valvular insufficiency. Leeches to the feet and mustard to the chest, with diuretics and a milk diet, soon restored conditions to the previous state.

103. **Serotherapy of Syphilids on New Basis.**—Bossi believes that Colles' law and Profeta's law both indicate that the placenta serves as a filter, preventing infection of a non-syphilitic mother from a fetus with a paternal inheritance of syphilis, and of the non-syphilitic fetus from a syphilitic mother. The filter thus offered by the placenta prevents in-

fection, but it allows the passage of immunizing substances that seem to confer immunity in each case. Bozzi consequently conceived the idea that the immunizing substances must be particularly abundant in the blood of women free from manifestations of syphilis who have just been delivered of a syphilitic child. He suggests this as a new basis for serotherapy of syphilids, adding that further material might be procured from the blood in the umbilical cord in cases of syphilides in the course of pregnancy. His experiences have been too limited as yet to be any criterion for the value of the method, and he urges others to try it on a larger scale.

107. **Iodin in Typhoid.**—Campanella attributes both antiseptic and antitoxic action to iodin, and describes a number of cases in which it proved extremely effectual in typhoid fever. He injected it hypodermically according to Durante's technic.

110. **Post-typhoid Abscesses and Hypodermic Injections.**—Basurgi announces as the conclusions of considerable experience and observation that the typhoid bacillus circulating in the blood is liable to display a pyogenic action at points of lesser resistance. Hypodermic medication is liable to cause slight injury, sufficient to serve as a point of lesser resistance, and an abscess may form at the site of the injection, even when every aseptic precaution has been taken. These abscesses are painless, but should be opened and evacuated at the earliest possible moment, after which they soon heal.

Riforma Medica, Palermo and Naples.

Last indexed XLIV, page 1818.

111 (XXI No. 15.) *Blood Pressure, Seated and Reclining, in Various Diseases.—Sulle variazioni della pressione sanguigna, etc. C. Gennari.
112 Lid Plastics with Flap from Brow.—Blefaroplastica a lembo frontale mediano. E. Moretti.
113 (No. 16.) Caso di pancreatite cronica indurativa con stomaco a clessidra. Glastroplastica. Guarigione. (With hourglass stomach. Recovery.) F. Purpura.
114 *Studii sperimentali sulla endocardite tubercolare. B. de Vecchi.
115 (No. 17.) *Contributo alla cura delle occlusioni intestinali. F. Gangitano. (Commenced in No. 15.)
116 *Early Diagnosis of Tabes.—Intorno alla diagnosi iniziale della tabe dorsale. G. Severino.
117 (No. 18.) *Sulla permeabilita della parete intestinale ai batterii (of intestinal wall). S. Rindone.
118 *Action of Radium Rays on Rabic Virus.—L'azione dei raggi del Radio sul virus rabido in vitro e nell'animale. G. Tizzoni and A. Bongiovanni.

111. **Variations in Blood Pressure with Position.**—Gennari has been studying the variations in the blood pressure when the subject sits or reclines, comparing the findings in health and disease. In health, the pressure drops about 6 mm. as the subject sits up after reclining, while the pulse rate increases. In convalescents from typhoid or other infectious diseases or in severe anemia, the blood pressure drops and sometimes a dicrotic beat is observed, but the pulse shows marked increase, from 10 to 18 beats. The pulse rate becomes especially accelerated in typhoid, although the drop in the blood pressure is not very marked. In heart disease the pressure varies very little with the change of position. This differentiates organic heart trouble from the merely functional. In all his cases of neuroses of the heart the pressure became much reduced when the patient sat up, and the pulse became decidedly dicrotic, while these changes were very slight in case of organic disease.

114. **Experimental Tuberculous Endocarditis.**—De Vecchi has previously announced that the local presence of the tubercle bacillus is not necessary for the production of tuberculous endocarditis. The toxic products of the bacilli, associated with some slight trauma of the endocardium, are sufficient to produce the specific lesions. He has recently been studying the process that follows inoculation of a few tubercle bacilli into the cornea. The anatomic conditions there much resemble those in the endocardium. In both, the bacilli are unable to induce the formation of true tubercles, but they stimulate the tissues to a reaction which is apparently merely an ordinary, chronic inflammation.

115. **Treatment of Intestinal Occlusion.**—Gangitano relates the particulars of eleven cases representing different types of intestinal occlusion, to emphasize his plea for surgical interference in all cases if medical treatment fails. Even in apparently moribund cases the results may be unexpectedly favorable. Atropin should be tried after failure of other measures, if the case is not urgent. It was always well borne in his experience and proved useful sometimes even after operation. He insists on the advantages of evacuating the intestine through an opening made near the tract where the obstruction lies, with lavage afterward. He made an artificial anus in only one of the patients, but without benefit.

116. **Diagnosis of Incipient Tabes.**—Severino describes the course of a case in which incipient tabes was apparently arrested by mercurial treatment. He based his diagnosis principally on the absence of the Achilles reflex, the sluggishness of the pupil reflex and the marked lymphocytosis in the cerebrospinal fluid.

117. **Permeability of Intestinal Wall.**—Germs did not pass through the intestinal wall, in the experiments reported, except when there was some necrotic lesion extending through its entire thickness. Lesions merely in the serosa or muscle outside did not allow the penetration of germs.

118. **Destructive Action of Radium Rays on Virus of Rabies.**—Tizzoni describes two series of experiments which have attracted much attention. In the first, the virus was exposed *in vitro* to the action of the radium rays; in the second, animals were inoculated in the eye, or sciatic nerve, or under the dura mater with virus, and the part was then exposed to the rays for an hour a day for eight days. The results indicate that the radium rays destroy the virus of rabies both *in vitro* and in the living animal. In the animals the effect of the rays is the same whether the part inoculated was exposed to them or some distant region. The virus exposed *in vitro* evidently had been deprived of all toxic properties when injected into the eyes of animals afterward. When exposed only for a short time, it caused a slow, wasting, fatal affection, different in every respect from typical rabies. When animals inoculated in one eye with the virus were exposed at once to the radium rays, the virus was rendered harmless, even when only the opposite eye was exposed to the rays. Also, when the animal had been inoculated in the meninges or sciatic nerve, exposure of one eye sufficed to annul the toxic action of the virus anywhere in the body. He suggests that possibly virus attenuated by exposure to radium may prove an efficient material for Pasteur treatment. He hazards the suggestion that the radium rays disinfect or disintoxicate the entire nervous system when applied to the eye.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Die palpablen Gebilde des normalen menschlichen Koerpers und deren Methodische Palpation. Nach eigenen Untersuchungen an der Leiche und am Lebenden. von Dr. Toby Cohn, Nervenarzt in Berlin. 1. Teil: Obere Extremitat. Mit 21 Abbildungen. Paper. Pp. 216. Price, 5.60 m. Berlin: Verlag Von S. Karger. 1905.

Die Krankheiten des Verdauungskanals (Oesophagus, Magen, Darm). Ein Leitfaden für praktische Aerzte. von Dr. Paul Cohnheim, Spezialärzt für Magen- und Darmkrankheiten in Berlin. Mit 17 Abbildungen. Paper. Pp. 247. Price, 5.60 m. Berlin: Verlag Von S. Karger. 1905.

The Surgical Assistant. A Manual for Students, Practitioners, Hospital Internes and Nurses. By W. M. Brickner, B.S., M.D., with 123 Original Illustrations. Cloth. Pp. 363. Price $2.00. New York: International Journal of Surgery Co.

Transactions of the Tenth Annual Meeting of the American Laryngological, Rhinological and Otological Society, Held at Chicago, May 30-31 and June 1, 1904. Cloth. Pp. 431. New York: Published by the Society. 1905.

The Office Treatment of Rectal Diseases Explained and Simplified. By R. D. Mason, M.D., Omaha, Neb. Illustrated. Third Edition. Cloth. Pp. 222. Price, $2.00. Minneapolis: Burton Co. 1905.

Pharmacology of the Fluid Extracts in Common Use. By J. S. Wright. Prepared especially for Students of Medicine. Leather. Pp. 225. Eli Lilly & Co., Indianapolis. 1905.

Psychiatry. A Text-book for Students and Physicians, by S. Paton, M.D., Cloth. Pp. 618. Price $4.00. Philadelphia: J. B. Lippincott Co. 1905.

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Original Articles

INTRAVENOUS INJECTION OF ERGOT.

EFFECTS ON THE MAMMALIAN CIRCULATION.*

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Ergot is commonly supposed to produce a powerful and persistent contraction of blood vessels. This belief rests mainly on clinical evidence, which is not conclusive; even when the observations are correct, they generally admit of other explanations. For instance, the hemostatic action of ergot in postpartum hemorrhage is now referred to the contraction of the uterine muscle, rather than to a vasoconstriction.

It is also generally assumed that the vasoconstriction has been firmly established by experimental evidence. An inspection of any of the critical text-books of pharmacology, however, will suffice to show that different investigators have obtained variable results on mammals.

This caused us to undertake the present investigation, the original object of which was to determine, on dogs, the circulatory effects of the ergot preparations as found on the market, in therapeutic doses, normally and in the pathologic conditions in which the drug is recommended.

We intended to use the drug by intramuscular injection. The results were so slight that their investigation seemed unpromising. We, therefore, changed to the study of the effects of intravenous injection. This is also the method employed by all other investigators. It may be objected that the conclusions based on intravenous injection can not be applied to the therapeutic use of the drug. This objection we shall discuss later.

As we proceeded with our investigation we found that the results were extremely variable; indeed, we have obtained practically all the results of our predecessors, even the most contradictory.

To reconcile these contradictions and to find the conditions on which they depend, it was necessary to make a very considerable number of experiments under a great variety of conditions. About 350 injections of ergot were made on 38 animals.

METHODS.

We employed dogs in the experiments in which the animal is not named specifically.

These received a moderate dose of morphin and were anesthetized with ether during the operation, the smallest quantity being used which would keep the animal quiet. The blood-pressure tracings were taken with a mercury manometer, the connection being filled with 25 per cent. magnesium sulphate.[1]

Injections were made into the femoral vein, through a burette. The usual effective dose was from 0.02 to 0.04 gm. (from 1 to 2 c.c. of a 2 per cent. solution in normal saline solution) per kilogram of dog. (This would equal from 1.0 to 3.0 c.c. of fluid extract per man.)

The essential details of special experiments will be given in the text.

Intramuscular Injection.—These were made into the gluteal muscles.[2] Larger doses were employed than for intravenous injection. Three dogs were used. In two of these (one in shock), no effect whatever was produced, but these animals also failed to react to intravenous injection. In the third animal, three doses of 0.5 gm. per kg. body weight, each produced a slight, very short rise, not exceeding from 8 to 10 millimeters of mercury, reached in from 2 to 4 minutes and returning to normal within 10 minutes (Fig. 1). There is no indication of the primary fall which will be described for intravenous injection. This agrees with the results of Wood[3] and of Wertheimer[4] for hypodermic injections and with Wertheimer for intraperitoneal and intrapleural injections.

PHENOMENA CHARACTERIZING THE INTRAVENOUS INJECTION OF ERGOT.

When an effective dose of ergot is injected rapidly into the femoral vein of an animal, it produces the effects illustrated in Figure 2 and in many of the other tracings. (Exceptions will be discussed later.) There is a small, momentary rise of from 10 to 20 mm. (This is due to the mechanical effects of the injections, and occurs equally well when the same quantity of pure saline solution is introduced; it is often absent.) This returns promptly to normal, and is then followed by a sudden drop in the pressure. This fall is generally from 40 to 60 mm., but may be as much as 90 mm. It reaches its minimum in from 20 to 30 seconds.[5] This is again succeeded by prompt recovery in every case. The normal is reached in from 50 to 90 seconds.[5] In about a fourth of the injections (52/230), the pressure does not quite reach the normal; in the same number it returns to just about normal. In half the cases (126/230), it rises a trifle above normal—from 10 to 20 mm., generally not more than 10 mm. This maximum is reached in from one and one-half to two and one-half minutes.[5] In from two to three minutes this has again fallen to the original blood pressure.

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* From the Pharmacological Laboratory of Western Reserve University. Read in abstract at the meeting of the American Therapeutic Society, 1905.

* Reference to authors whose papers were not accessible to us will be found in Wood's Therapeutics, 11th Edition, page 749.

[1] We convinced ourselves that this played no part in the phenomena by comparing it with sodium sulphate in the same dog.

[2] Meltzer and Auer, Jour. of Exper. Med., 1905, vol. vii, pp. 1-20, have shown that the absorption is much more active from intramuscular than from subcutaneous injections.

[3] Wood, H. C.: Philadelphia Med. Times, 1874, vol. iv, p. 518.

[4] Wertheimer: Archiv de Phys., 1891, vol. xxiii, p. 558; 1893, vol. xxv, p. 297.

[5] The time is counted from the beginning of the injection.

COMPARISON WITH THE RESULTS OF OTHER INVESTIGATORS.

Our results agree with the descriptions of Holmes,[6] Koehler and Eberty,[7] Jacobj,[8] Kobert,[9] Mellin,[10] Wertheimer and Magnin[11] Pick,[12] Bradford and Dean,[13] Hemmeter[14] and Wood.[3]

The agreement applies to every detail, with the following exceptions:

Kobert, working with sphacelinic acid, does not mention the preliminary fall. This is probably a mere oversight.

Ergotinin Tanret (which probably contains mainly cornutin) has no effect. (Wertheimer, Koehler and Eberty).

Jacobj, working with chrysotoxin and sphacelotoxin, finds the secondary rise to exceed the normal somewhat, in cats, but not in rabbits. Kobert, on the other hand, finds the rise to be larger in rabbits. Neither investigator had sufficient material to make his conclusions binding.

Evidently, the fall of pressure is the most conspicuous and most constant result of the intravenous injection of ergot; it occurs in all animals observed: dogs, cats and rabbits, and to these we may add an experiment on a rooster. The secondary rise of blood pressure is small and short. The only authors who report a considerable, although short rise of pressure after ergot, are Kobert and Wood.

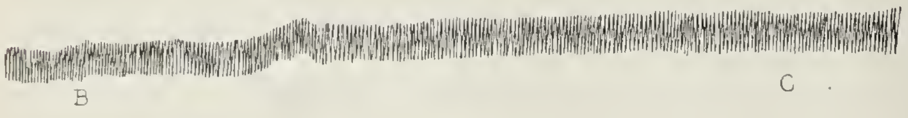

Fig. 1.—Intramuscular injection of ergot; 0.5 c.c. of the fluid extract per kilo, injected in the gluteal muscle at B. Time at B, 12:58; at C, 1:02.

THE EXTENT OF THE RISE OF BLOOD PRESSURE AFTER INTRAVENOUS INJECTION OF ERGOT.

This is a matter of some importance from a therapeutic standpoint.

Kobert, experimenting on rabbits with sphacelinic acid, noticed exceptionally a secondary rise of blood pressure to double the original; but this was only obtained from convulsive doses, and can not, therefore, be considered the ordinary effect of ergot.

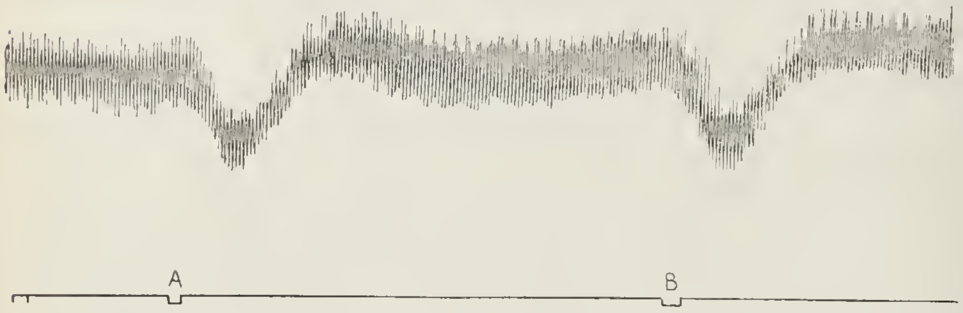

Fig. 2.—Typical results of the intravenous injection of ergot. Also comparison of two preparations, both of old ergot. Dose of each injection 0.04 gm. per kilo. A. Time, 10:39; 11 c.c. ergot injected. B. Time, 10:41, 11 c.c. ergot (wine) injected.

Wood's results present the best samples of a high rise. In his third experiment the pressure was raised by 70 mm. (from 90 to 160 mm.) in five minutes. Repetition of the injection was less effective. His fourth experiment gave analogous results.

These results are almost unique. Wood was evidently dealing with a preparation of unusual pressor efficiency. It is not impossible that this was due to a high content of cornutin, the convulsant alkaloid of ergot. Mellin[10] sometimes saw a rise of 40 mm. With the other investigators, it did not exceed 10 or 20 mm. Jacobj,[8] Hermanides[15] and Holmes[6] saw no rise whatsoever in a considerable proportion of their cases.

In our series of 327 injections, only 10 (3 per cent.) showed a rise above 20 mm.; in all but three of these the unusual rise could be attributed to causes other than ergot, with more or less certainty (recovery from shock; injection of large quantity of saline; recovery from anesthesia). Even in these it amounted only to 34-54 mm. of mercury.

The only instances in which the abnormal rise was certainly due to ergot occurred in Dog 6, the injection being made into the peripheral end of the femoral artery. In these three injections, the pressure rose by 28, 34 and 34 mm. in 3 to 6 minutes.

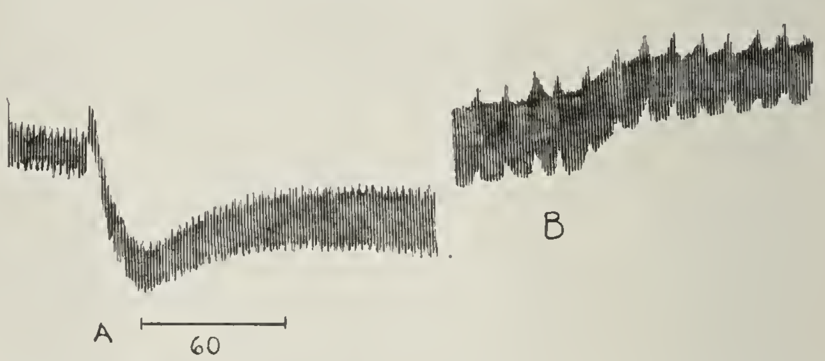

Fig. 3.—Different preparations of ergot. A is the old acetic extract, which tends to lower the blood pressure, 11 c.c. injected at 10:33½; B is a fresh fluid extract which tends to raise the pressure, 11 c.c. injected at 11:22. These tracings illustrate the extreme lower and upper limit of the secondary rise. The dog and the doses are the same as in Figure 2. The space marked 60 represents sixty seconds.

THE VARIABILITY OF THE ERGOT PHENOMENA.

SUMMARY.

In our series of 327 injections, 51, or 16 per cent., produced no effect. These can be accounted for by the existence of shock, etc., and may be disregarded for the present.

Of the remaining 276 injections, 230 (84 per cent.) showed the primary fall. All of these returned toward normal; 52 (25 per cent. of 230) remained below the original pressure; 52 (25 per cent.) just reached the original; 126 (50 per cent.) showed a temporary rise above the original pressure.

Of the 276 active injections, 46 (16 per cent.) gave a rise without previous fall. The rise was prompt and short in 22 (8 per cent.); in 24 (8 per cent.) it was gradual and prolonged. The latter result was obtained only after destruction of the spinal cord.

A rise above the original pressure, with or without previous fall, occurred in 172 of the 276 injections (62 per cent.).

Comparing our results with those of some other investigators, we find:

	Our Series	Holmes	Mellin
Primary Fall	$\frac{230}{276}$ = 84 per cent	$\frac{21}{23}$ = 91 per cent	$\frac{6}{23}$ = 18 per cent
Rise above normal	$\frac{172}{276}$ = 62 per cent	$\frac{6}{23}$ = 26 per cent	

The results are seen to vary considerably, with different series of experiments, and within the same series. This depends on several causes: Differences in the preparations of ergot; in the dosage and the number of doses; in the animals; in the existence of the various forms of shock, etc. All these have a definite influence

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General Explanation: The base line in these illustrations represents zero pressure. So much space would be required to show the base line in some tracings with high blood pressure that this line has been omitted. The line is dropped during the time of injection. B. P.—Blood Pressure. All tracings are reproduced one-half the size of the original.

6. Holmes: Hrch. de Physiol., 1870, vol. iii, p. 384.
7. Koehler and Eberty: Virchow's Arch., 1874, vol. lx, p. 384.
8. Jacobj: Arch. f. exp. Pathol. u. Pharm., 1897, vol. xxxix, p. 85.
9. Kobert: Ibid, 1884, vol. xviii, p. 317.
10. Mellin, G.; Skandinavisches Arch. f. Phys., 1904, vol. xv, p. 147.
11. Wertheimer and Magnin: Archiv de Phys., 1892, vol. xxiv, p. 92.
12. Pick: Arch. f. exp. Path. and Pharm., 1899, vol. xlii, p. 426.
13. Bradford and Dean: Proceedings Royal Society, 1889, vol. xlv, p. 369 (not consulted in the original); Journal of Physiology, 1894, vol. xvi, p. 85.
14. Hemmeter: Med. News, 1891, vol. lix, pp. 133, 152, 264, 494.
15. Hermanides: Berliner klin. Wochen., 1880, pp. 598 and 617.

on the ergot effects and render their study peculiarly complex, but interesting.

COMPARISON OF DIFFERENT PREPARATIONS OF ERGOT.

The differences between the results of different investigators show that the particular preparation of ergot employed by them must have influenced their results. The frequent occurrence of a high rise in the experiments of Wood, and its comparative rarity in other series, can only be attributed to this cause. No definite conclusions can be reached, however, except that preparations which are relatively rich in cornutin and poor in the other ergot principles—such as the ergotinin of Tarret and the ergotin of Wiggers—do not produce the typical ergot effects, particularly the primary fall (Koehler and Eberty,[7] Wertheimer[4]); although they may cause a high convulsive rise of pressure, if the dose is large enough to cause actual convulsions. The ordinary fluid and solid extracts, made with an aqueous menstruum (Ergotin Bonjean) or with the addition of acid (Ergotin Yvon) produce the typical results. Jacobj[8] has also shown that these results follow the injection of the isolated chrysotoxin and sphlacelotoxin and secalintoxin.

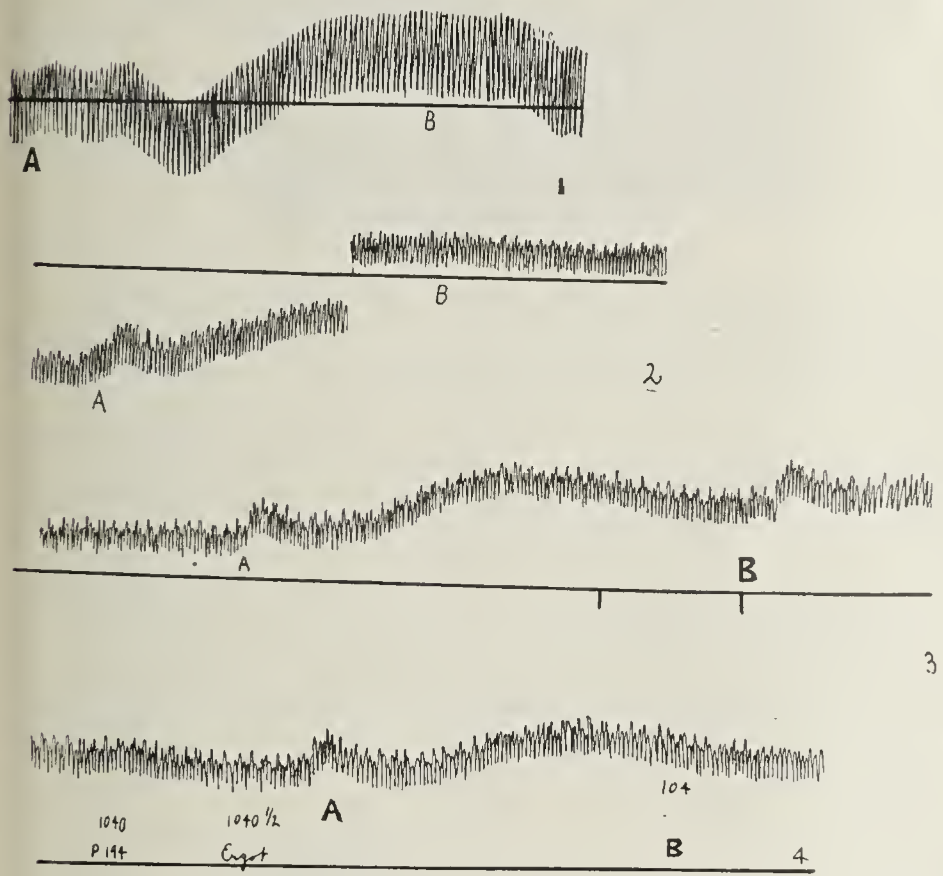

Fig. 4.—Influence of destruction of the spinal cord on the ergot phenomena: 1. Before the cord was destroyed. 2. Five minutes after destruction. 3. Fourteen minutes. 4. Seventeen minutes. The gradual and prolonged rise in 2 is probably due to recovery from shock; but the primary fall and fairly high secondary rise in 3 and 4 are true ergot effects. In 1, at A, 15.7 c.c. of ergot were injected at 10:10; B, 10:11. In 2, at A, 15.4 c.c. of ergot were injected at 10:28. B, 10:35. In 3, time at A, 10:37, 14.4 c.c. of ergot were injected; at B, time, 10:39 NaCl injected. In 4, time at A, 10:40½, 15.4 c.c. of ergot were injected, at B, time, 10:42.

As it was one of our objects to investigate the differences in the preparations actually found on the American market, and the influence of age, method of preparation, etc., we made a considerable number of experiments to this end. We will summarize these very briefly:

We compared aqueous infusions, tincture, wine, fluid extracts of different manufacturers, fluid acetic acid extract, and solid extract, using in all eleven different preparations. Three of these were fluid extracts of reliable makers, just purchased or kindly furnished by the manufacturers. One was an infusion of the latest crop of Spanish ergot, imported especially for this purpose and presented to us by Parke, Davis & Co. The other seven preparations were from 4 to 10 years old.

We may state at once that the method of preparation did not seem to have any influence on the effect, so far as we could judge. Indeed, all the preparations were qualitatively identical. Each of them produced a primary fall and a secondary rise, at least in some cases. They presented quantitative differences in their total effect, however, and in the relative tendency to produce a rise or fall. Much to our surprise, the age of the ergot does not make any difference. For instance, the infusion of the ergot of crop of 1899, preserved without special precautions, was about as active as that made from the crop of 1904. The older was rather the more effective of the two. All the old preparations showed a good fall and a relatively poor rise; but this may be a mere coincidence. The greatest tendency to rise was shown by some of the fresh fluid extracts; but others, of presumably equal quality, did not excel in this respect.

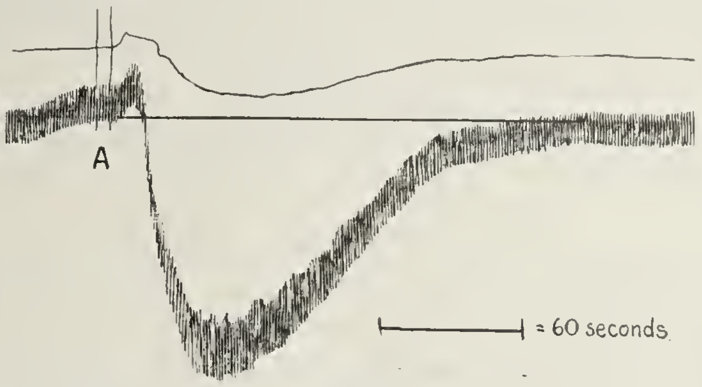

Fig. 5.—Simultaneous oncometer (upper) and blood-pressure tracings (lower). The two correspond in every detail. The oncometer tracing was taken from the kidney. This tracing also shows the largest fall which we obtained in any of our experiments, 99 mm. Injection at H.

The best fall was obtained with an old solid extract; then by the old acetic extract; then with the infusion and tincture of the old crop ergot; then with the infusion of the new crop; then with the old and new fluid extracts and the old wine.

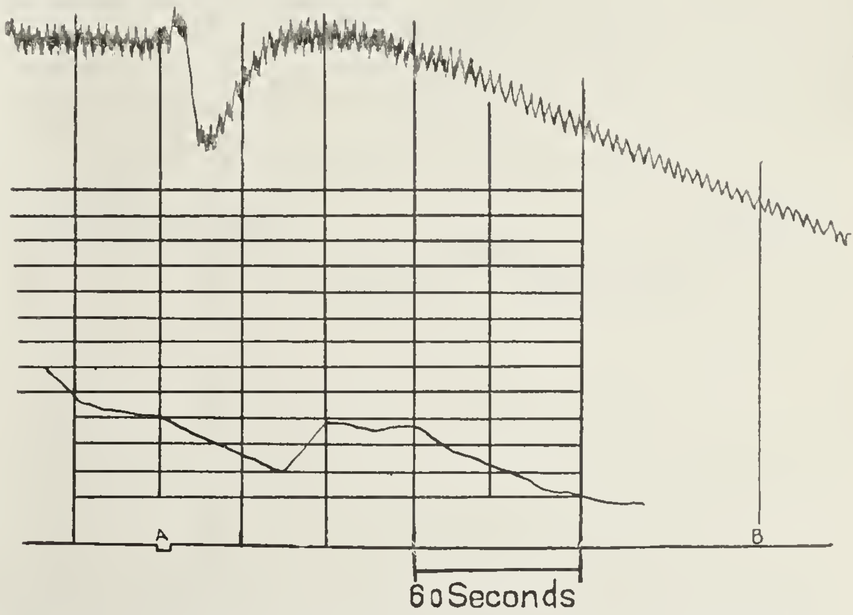

Fig. 6.—Simultaneous oncometer (lower) and blood-pressure tracings (upper). (Oncometer on intestine; curve plotted from readings.) The oncometer reaches its lowest level only after the blood pressure has recovered, indicating vasoconstriction. A, 11 c.c. ergot injected at 10:22½; B, 10:26.

The best rise was obtained with the new fluid extracts; then with the old fluid extract; then with the old and new infusion and tincture; the rise was deficient in the acetic extract, and especially in the old solid extract.

Figures 2 and 3 may serve to illustrate these statements. In this connection, it should be remarked that successive injections of the same preparation in the same animal, under identical conditions, give identical results in almost all the experiments. Differences were very rare.

INDIVIDUAL DIFFERENCES IN THE EFFECT ON ANIMALS.

Our experiments show that different individuals react unequally to ergot. Many of these differences may be referred to the blood pressure, to states of shock, etc. Others, however, must be referred to unexplained idiosyncrasy. For instance, Dogs 7, 12, 15, 28, 32, 34 reacted well; Dogs 20 and 29, poorly.

Other causes of variability will be discussed later, as they have some bearing on the explanation of the ergot effects.

INVESTIGATION OF THE MECHANISM OF THE ACTIONS OF ERGOT.

The blood-pressure phenomena could be either cardiac or vascular; they could originate in the central nervous system or peripherally; they might be direct or reflex effects. The fall and rise of blood pressure might be due to successive actions on the same or on different mechanisms. Several of these possible actions might be exerted at the same time.

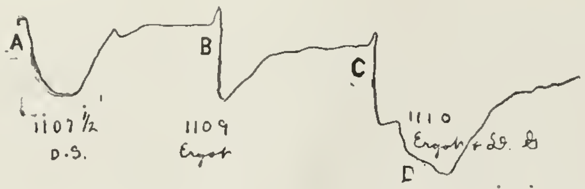

Fig. 7.—Depressor stimulation (D. S.) and ergot (rabbit). At A, D. S. time, 11:07½; at B, 11:09, ergot was injected. At C, ergot was injected, with D. S. at D.

Destruction of the spinal cord is an efficient method of ascertaining whether or not direct or reflex actions on the vasomotor center are the essential cause of the phenomena.

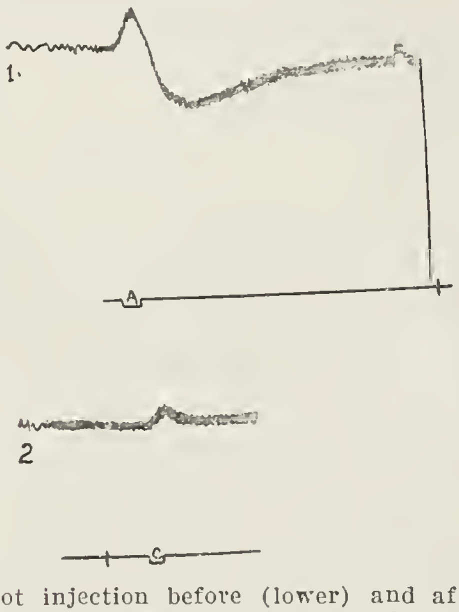

Fig. 8.—Ergot injection before (lower) and after (upper tracing) ligating the thoracic aorta: This shows the usual typical ergot phenomena, rather better after the aorta is tied. 1. Aorta clamped; A, time 11:39½, 20 c.c. of ergot were injected (Squibb's and old infusion). 2. Before clamping aorta; C, 11:16½, 20 c.c. of ergot were injected.

OPERATION. SECTION OF CORD.

Dog 10.—The cord was divided between the third and fourth cervical vertebræ. The division was almost, but not quite complete. Stimulation of sciatic nerve was ineffective. Pressure fell from 97 to 65, but later recovered to 88 mm.

Dog 11.—Cord crushed, but not completely divided between third and fourth cervical vertebræ. Sciatic stimulation ineffective. Pressure fell to 48 mm.

SECTION OF CORD FOLLOWED BY DESTRUCTION.

(A brass rod was passed down the spinal canal.)

Dog 21.—The cord was completely divided between atlas and axis; sciatic stimulation was ineffective. Pressure fell to 110. Cord destroyed to tenth dorsal vertebra.

Dog 22.—The cord was divided between atlas and axis; evidently above vasomotor center, for pressure remained at 170 and sciatic stimulation was effective. Cord was destroyed, dog died.

DESTRUCTION OF THE CORD.

Dog 13.—The cord was completely severed between third and fourth cervical vertebræ and destroyed to eleventh dorsal. Sciatic stimulation was ineffective. Pressure fell to 56 mm.

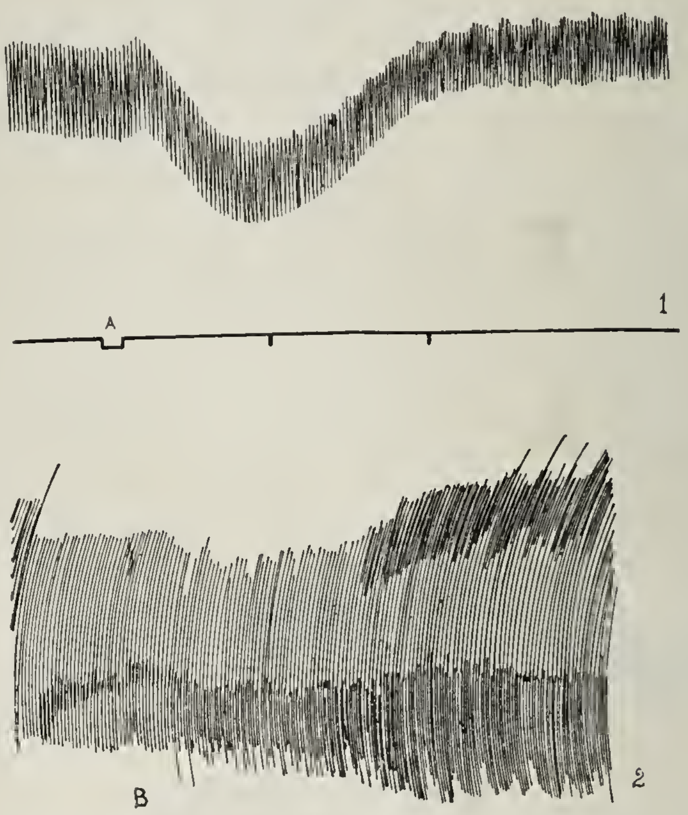

Fig. 9.—Simultaneous blood-pressure tracing and myocardiogram (needle in heart). 1. Blood pressure; A, 10:15, 6 c.c. of ergot were injected. 2. Myocardiogram, chest closed. The heart is weakened during the fall and greatly strengthened during the rise of pressure; B, ergot.

Dog 14.—The cord was completely severed between third and fourth cervical vertebræ and destroyed to first dorsal, where the wire left the spine and pierced the lung (with very little hemorrhage). Pressure fell to 64.

COCAINIZATION OF MEDULLA.

A pledget of cotton, saturated with cocain solution, was applied to the exposed medulla.

Dog 12.—Sciatic stimulation became ineffective and pressure fell to 33 mm., recovered to 62 mm. After forty-four minutes the cocain was washed off. The sciatic stimulation became effective again, but the pressure remained low.

It will be seen that the vasomotor center was effectively excluded in six of these experiments (for sciatic stimulation proved ineffective). All the animals were kept alive by artificial respiration and the ergot effect was compared before and at various times after the section or destruction of the cord.

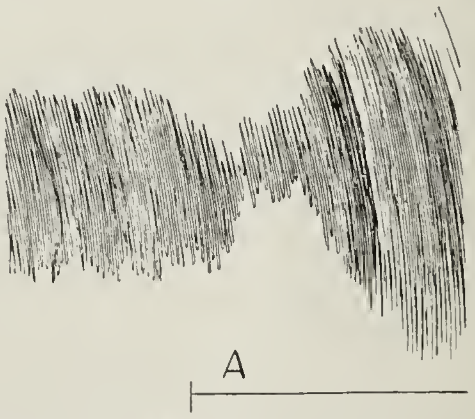

Fig. 10.—Cardiac tracings from excised Langendorff heart. Very typical ergot effect. A, ergot.

In all these experiments, the ergot fall was diminished, or even abolished, immediately after the destruction of the cord; while the rise was rather more powerful and more prolonged, but more gradual. These modifications are seen most typically shortly after the destruction of the cord. After a time, both the fall and rise approximate more closely to the effects before the cord was destroyed; but the efficiency of the ergot grows less and less until it finally disappears.

The very unusual high rise noticed shortly after destruction of the cord in some of the experiments may be attributed to recovery from shock; but this explanation can not apply to most of the observations (Fig. 4). Consequently there can be no doubt that both the fall and the rise of pressure may occur after destruction of the spinal cord; and that these phenomena, therefore, are essentially independent of the vasomotor center and of vasomotor reflexes.

RESULTS OF OTHER INVESTIGATORS.

Hemmeter and Wood also noticed the fall of pressure after destruction of the cord, so that there is no disagreement about this phenomenon. It is quite otherwise with the rise of pressure. Our results confirm those of Jacobj[8] (who also found the primary fall diminished), but are opposed by those of Wood,[3] Kobert[9] and Hemmeter,[14] who find that the rise does not occur after destruction of the cord. We can see two explanations for these results: One, that these authors allowed considerable time to elapse after destroying the cord. before they injected the ergot. This was the case with Wood. Now we have repeatedly found that the pressor response was absent at this time, while it was marked soon after the operation. A second possibility is that the preparations used by these authors really had an action on the vasomotor center, which was lacking or very inconspicuous in our samples. The preparations of Wood[3] and Kobert,[9] it may be remembered, produced an unusually high rise in normal animals, and Hemmeter[14] and Wernick[16] observed an actual constriction in their animals, which is practically lacking in ours, as we shall show later. It is conceivable that their samples were unusually rich in cornutin, which stimulates the vasomotor center. At all events, we are prepared to affirm that all the preparations examined by us produced at least as effective a rise soon after destruction of the cord as before, in twenty-one injections, in all the animals.

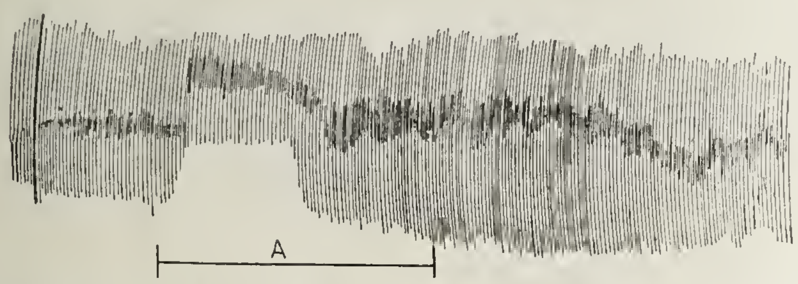

Fig. 11.—Cardiac tracing from the same excised Langendorff heart, as in Fig. 10, showing the typical primary diminution and secondary increase of force. A, ergot. A different preparation of ergot was used in this experiment.

Cause of the Modification of the Ergot Effects by Section or Destruction of the Cord.—The quantitative differences in the ergot effects before and after the operation may be referred in part to the fall of blood pressure, which always diminishes the ergot actions, and especially the fall, as we shall show later. There is, however, some other factor, probably "shock," for in Dog 13, the fall was abolished when the pressure was raised to 140 mm. In Dog 23, when the pressure was at 65 mm., ergot produced no fall, but a rise of 40 mm.; when the pressure rose to 115 mm., ergot did produce a fair fall, 20 mm., and a secondary rise of 18 mm.; when the pressure had again dropped to 60 mm., the ergot produced a fall of 8, and a rise of 6 mm. The relatively high rise of pressure, with a low initial blood pressure, was only observed after destruction of the cord, and not when the pressure had been lowered by any other means.

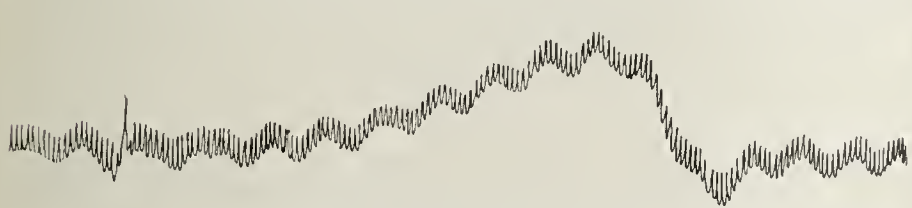

Fig. 12.—Fast tracing, vagi intact. Note the slight quickening of the heart during the fall and recovery.

Injection into the Cerebral End of the Carotid Artery.—Wood sought to decide between a central and peripheral origin of the phenomena by injecting the ergot into the cerebral end of the carotid artery, causing it to go to the brain before it reached the heart or peripheral vessels. The attempt was not very successful, as he obtained very variable results. We performed these injections on several dogs, and found that the results did not differ essentially from those of injections into the femoral vein. This does not justify any conclusions in either sense.

When the injections were made very slowly, into the distal end of the femoral artery, the effects were correspondingly delayed, and more prolonged. Otherwise, they were quite typical in Dog 4, in six injections. Dog 5 was in shock, and showed only a slight effect, but of the same type; while Dog 6, in which the injections were made especially slowly, showed a quite considerable rise, with scarcely noticeable fall, in each of three injections.

These results prove only that the ergot effects are not reflexes originating in the vessels.

ONCOMETER OBSERVATIONS.

The measurements of the volume of an organ is a conclusive and convenient method of deciding whether an observed change of blood pressure is of vascular or cardiac origin: If it be vascular, the oncometer and the blood pressure vary in an opposite direction; if it be cardiac, they change in the same direction. We made some thirty-five comparative observations of this kind, applying the oncometer to the kidney, spleen or intestine. In some of our experiments, the oncometer was read and the readings plotted on the blood-pressure curve; in others, the oncometer excursions were registered directly on the tracing by a Brodie bellows. In twenty-four of the injections, the oncometer followed the blood pressure in every phase (Fig. 5); so that all the ergot phenomena must be essentially of cardiac origin. In the remaining eleven injections, it departed only in one phase, i. e., during the recovery of the blood pressure from the fall; in these the oncometer began to rise only some time after the blood pressure, so that there must have been some vasoconstriction (Fig. 6). Even in these cases, however, the oncometer rose before the blood pressure exceeded the normal, and it continued to rise with the rise of the blood pressure above normal. In almost a third of the cases, therefore, ergot produced some vasoconstriction; but this is evidently of less significance than the cardiac changes. It is worth observing that this phenomenon was never seen with the extracts which had a poor pressor effect. The same phenomenon—fall of oncometer with fall of pressure, but delayed recovery—can be seen in all the oncometer tracings of Wertheimer and Magnin[11] taken from the

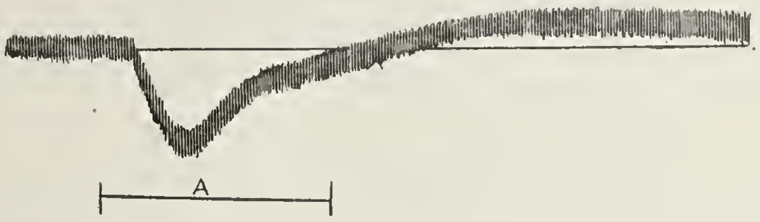

Fig. 13.—A prolonged injection of large dose of ergot (0.35 gm. per kilo). The phenomena are the same as with small, short injections; the pressure recovers during the injection. The space marked A indicates the duration of the injection.

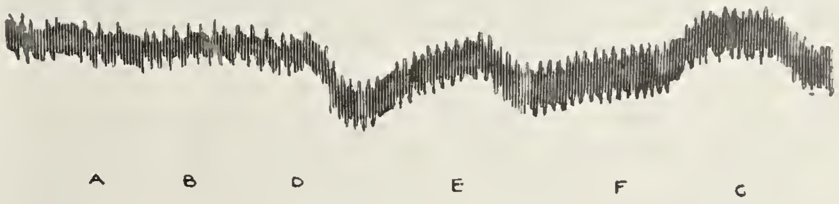

Fig. 14.—Prolonged injection, rate quickened at D and E. The pressure falls and recovers each time. At A the time was 11:37; started injection of 95 c.c. of infusion of ergot of new crop, the rate was quickened at D and E. At F, 11:42, the injection was stopped, and at G, 11:42½, 18 c.c. were injected.

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[16] Wernick: Virchow's Arch., 1872, vol. lvi, p. 505.

kidney. Bradford and Dean[13] also state that the plethysmograph indicates a constriction during the ergot rise.

EVIDENCE FROM INSPECTION OF ORGANS.

Holmes[6] (in most cases), Eberty,[17] Hemmeter,[14] Huizinga and others have observed a constriction of the vessels in the frog's tongue or in the web of the foot, as the result of the injection of ergot. Hermanides,[15] however, throws some doubt on the value of these statements; he also described this effect in his first paper, but in a second paper he rejects it altogether, as being due to inflammatory changes and not to ergot.

In mammals, Schueller described constriction of the vessels in the pia; Hemmeter[14] in the ear and omentum of rabbits, and Wernick[16] especially in the skin, muscles, intestine, bladder and in the pia of the cerebrum and cord. Hemmeter and Wernick both state that this constrictor reaction fails when the cord has been destroyed, and, therefore, attribute it to stimulation of the vasomotor center. We looked for evidences of constriction of the mesenteric vessels in several of our experiments, but were unable to confirm it. (The effects on the comb of the rooster and the gangrene action of the ergot have no bearing whatever on the present question. They are only produced slowly, are very persistent, and are apparently lost when the drug is aged.)

OUTFLOW FROM VEINS.

Pick[2] observed this carefully in a number of his experiments, in different areas, by a very excellent method, and failed to find any material change. This speaks against a pronounced and lasting vasoconstriction.

EFFECT OF DEPRESSOR STIMULATION.

If the effects of ergot were due to an action on the vasomotor center, they would probably be modified by stimulation of the depressor nerve. This would apply especially to the ergot fall. We found that this is not the case: The ergot and depressor fall are additive, indicating that they are the product of different mechanisms.

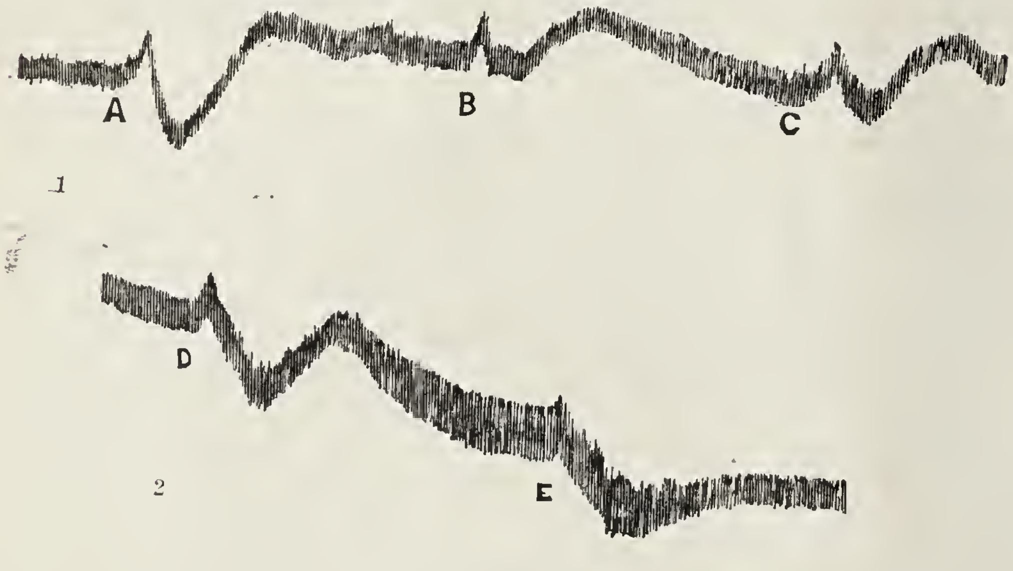

Fig. 15.—Rapidly repeated injections the mean pressure rises at first 1, and then falls progressively, 2. At A, 11:01 in 1, 8 c.c. of ergot (Wyeth) were injected, at B, 11:04, the injection of the same preparation was repeated, and at C, 11:07, 8 c.c. of Parke, Davis & Co.'s ergot were injected. In 2, at D, 11:09, 8 c.c. of Squibb's ergot were injected, and at E, 11:11½ the injection was repeated. Base lines omitted.

These experiments were made on a rabbit: the results were quite uniform. Stimulation of the depressor at the base of the ergot fall gives a marked further fall, and prevents the recovery of the pressure; stimulation during the ergot recovery again causes a fall (Fig. 7); injection of ergot during the depressor stimulation causes a marked further fall, and delayed recovery.

Ergot and depressor stimulation do, however, interfere with each other to a slight degree: The fall, when both are used together, is not quite equal to the sum of the falls which they cause separately (Fig. 7). It would seem, also, that the ergot interferes more with the effect of the depressor, than vice versa; for the drop is rather less when the ergot is given before the depressor is stimulated, than vice versa. The difference is not sufficient to be decisive. It is quite probable that the slight interference of the ergot and depressor stimulation may be referred to the change in the blood pressure.

Effects of Amyl Nitrite.—If the blood pressure is lowered by the inhalation of amyl nitrite, ergot is rendered less effective, but it still produces some effect. This indicates that it does not act on the vasomotor system centrally to the structures which are paralyzed by the nitrite.

Effect of Suprarenal Alkaloid.—This should also interfere with the effects of ergot, if these were due to vasomotor actions. They were found to be practically the same (We shall give the details later). This, therefore, is a further proof that the actions of ergot are not essentially vascular.

ACTION OF ERGOT ON THE CIRCULATION THROUGH EXCISED ORGANS.

The peripheral vasomotor action of drugs may be studied by adding them to fluid perfused under constant pressure through the vessels of excised organs, and noting their effect on the outflow from the vein, or on the oncometer; a diminution of the "veinflow" shows constriction, and vice versa. We made sixteen experiments of this kind, using the kidney, leg, spleen and intestine at room temperature and at body temperature, adding from 0.03 to 2 per cent. of ergot to 1 per cent. salt solution and to defibrinated blood, diluted with Locke's fluid. None of these showed any marked effect; the changes which we obtained were so small and variable that we must consider them accidental.

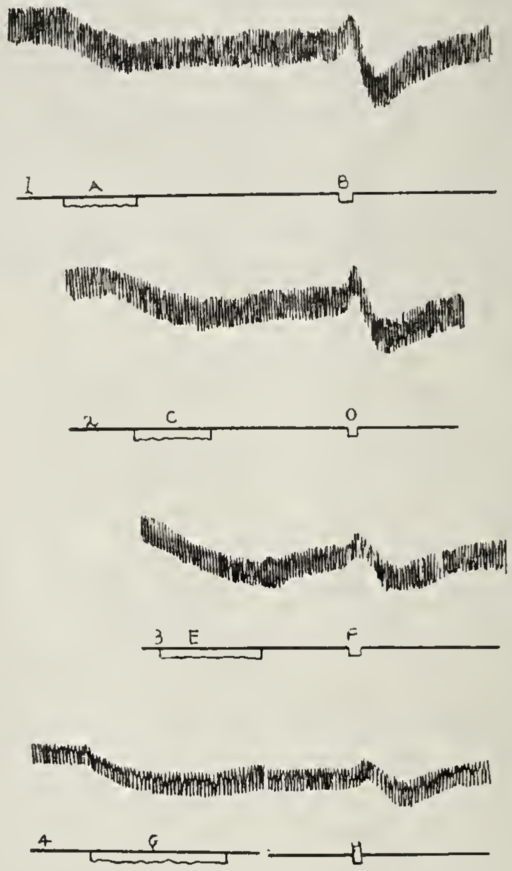

Fig. 16.—Influence of hemorrhage. The ergot effect diminishes as the pressure falls. In 1, at A, 11:25, 40 c.c. of blood were drawn off; at B, 11:27, 12 c.c. of ergot were injected. In 2, at C, 11:28, 40 c.c. of blood were drawn off; at D, 11:29½, 12 c.c. of ergot were injected. In 3, at E, 11:30½, 80 c.c. of blood were drawn off, and at F, 11:32, 14 c.c. of ergot were injected. In 4, at G, 11:33, 80 c.c. of blood were drawn off, and at H, 11:35½, 12 c.c. of ergot were injected.

We must conclude that ergot does not stimulate the vasomotor endings and that it has no direct action on the arterial muscle. Whatever vasoconstrictor action it possesses, therefore, must be central.

Jacobj[8] also tried the effect of the isolated ergot principle (chrysotoxin, secalintoxin and sphacelotoxin) in artificial perfusion. He claims that they slow the circulation, but his results scarcely suffice to prove this point.

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[17] Eberty: Inaugural Dissertation, Halle, 1873 (not consulted in the original).

A final proof of the insignificance of the vascular change is furnished by the fact that the same phenomena are produced when the vessels are practically excluded by clamping the thoracic aorta (Fig. 8).

SUMMARY AS TO VASOMOTOR EFFECTS.

It will be seen that all our experimental evidence agrees in excluding vasomotor effects as the essential cause of the ergot phenomena. They play no part whatever in the fall of pressure. A vasoconstriction of central origin, varying in extent with different preparations and with different conditions, co-operates in the rise of blood pressure, but is not its essential cause. The ergot phenomena, therefore, must be due mainly to cardiac changes. This view is supported by the strongest direct experimental evidence.

EFFECT OF ERGOT ON THE HEART—INTACT ANIMALS.

In a number of our experiments, we took simultaneous tracings from the carotid artery and from the cardiac muscle. In two dogs (27 and 28), the chest and pericardium were opened; a pin was hooked in the apex of the left ventricle and connected with a recording lever. The operation always caused considerable shock and thereby interfered with the result. The movement of the lungs also renders the tracing somewhat irregular. In Dogs 32 and 34, a long needle was thrust into the heart through the intact thorax and connected with the lever. About thirty-five injections were made. The results agree in all cases (Fig. 9). During the fall of pressure the excursions are greatly weakened; during the rise of pressure they are increased. The rate was not greatly altered, but in many experiments there was a tendency to slowing during the fall and to quickening during the rise. The changes in the carotid pressure and myocardium coincide in every detail, both as to kind and as to time. When the ergot did not alter the blood pressure, it also failed to affect the myocardium. These are precisely the results obtained by Wertheimer and Magnin,[11] who registered the intracardiac pressure from the right ventricle (see their tracing No. 4).

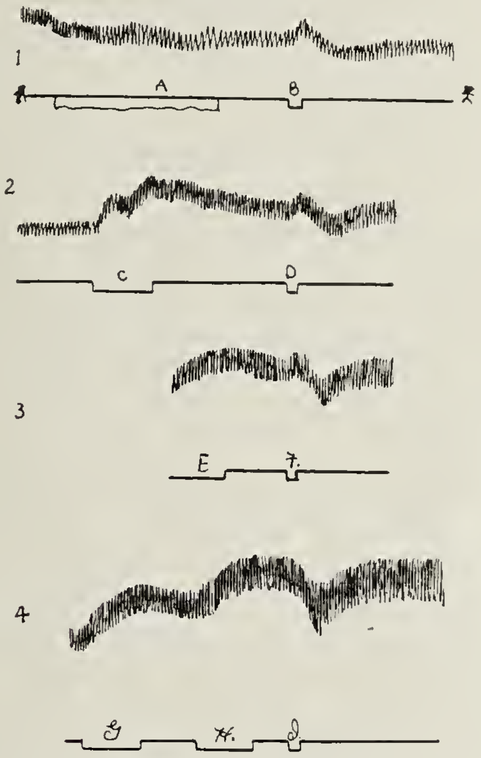

Fig. 17.—Influence of saline perfusion. (Continuation of Figure 16.) The ergot effect increases as the pressure rises. In 1, at A, 11:36½, 100 c.c. of Locke's solution were injected, at B, 11:38, 12 c.c. of ergot were injected. In 2, at C, 11:40, 100 c.c. of the solution were injected and at D, 11:41, 12 c.c. of ergot were injected In 3, at E, 11:41½, 100 c.c. of the solution were injected, and at F, 11:42½, 12 c.c. of ergot were injected. In 4, at G, 11:43, 100 c.c. of the solution were injected, at H, 11:44, the injection was repeated, and at I, 11:44½, 12 c.c. of ergot were injected.

EXPERIMENTS ON THE EXCISED HEARTS OF DOGS.

Precisely the same results were obtained by perfusing excised hearts, by Langendorff's method, with defibrinated blood, diluted with Locke's fluid, at 32 to 40° C. This was alternated with the same fluid, to which 0.04 per cent. of fluid extract of ergot was added. The tracings (Figs. 10 and 11) are scarcely to be distinguished from the myocardiograms taken from the intact animals; they even correspond closely in regard to time. Immediately on entering, the ergot greatly lessens the excursions; in 5 out of 7 experiments, the heart had a distinctly systolic tendency (Fig. 11); it was never diastolic. In a very short time, i. e., during the perfusion of the ergot, the contractions were strengthened, beyond the normal, often very considerably so. This persisted about as long as the ergot perfusion continued, returning to normal when the pure diluted blood was resumed (Fig. 11). During the lessened excursions, the rate was generally somewhat slowed, and during the greater excursions it was increased; but the changes in the rate were neither marked nor constant. As the contractions of the heart weakened from exposure the ergot became less effective, just as in "shock" in intact animals.

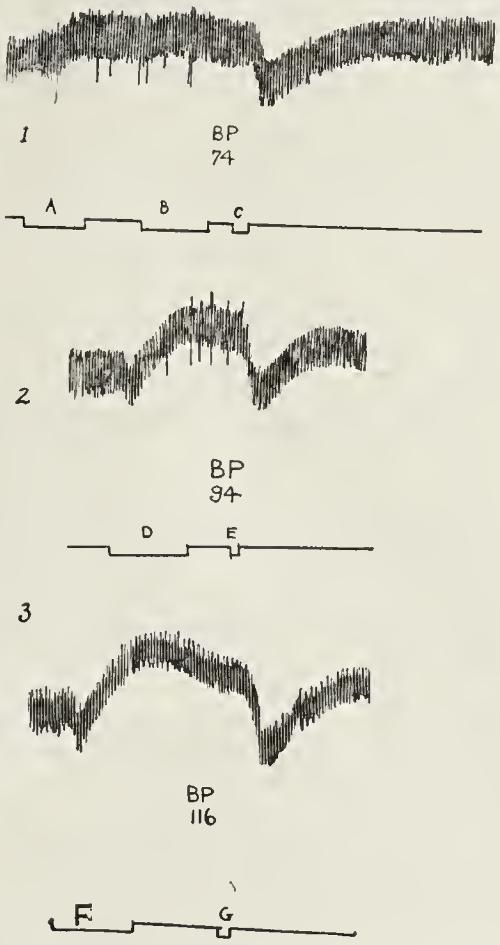

Fig. 18.—Influences of injection of blood. (Continuation of Figure 17.) The pressure and the ergot effect increase still more. In 1, at A, 11:45½, 100 c.c. of Locke's solution were injected, at B, 11.46½, the injection was repeated, and at C, 11:47, 12 c.c. of ergot were injected. In 2. at D, 11:49, 100 c.c. of blood were injected, and at E, 11:50, 12 c.c. of ergot. In 3, at F, 11:52, 100 c.c. of blood were injected, and at G, 11:53, 12 c.c. of ergot.

These results leave no doubt that the cardiac effects of ergot are peripheral.

STUDY OF THE CARDIAC CHANGES AS SHOWN ON THE CAROTID PRESSURE TRACINGS.

Some of our simultaneous carotid and myocardiac tracings demonstrate very strikingly that it is quite useless to try to judge the cardiac excursions by the excursions of the mercury manometer. The two are often precisely reversed, as in Figure 9.

EFFECT OF ERGOT ON THE RATE OF THE HEART.

In our experiments on animals, the effects on the rate of the heart were generally slight.

When the vagi had been divided (25 observations), the injections caused little if any change during the fall and recovery of the pressure; if the pressure rose above normal the rate was often somewhat quickened. In the excised heart, the rate was at first decreased, then slightly increased. These observations show that ergot does not stimulate the vagus endings, and that it does not act on the accelerators.

With the vagi intact (29 observations), the rate is increased somewhat while the pressure is low (Figure 12). This must be due to inhibition on the vagus center, and can probably be explained by the fall of blood pressure, rather than by any direct central action of ergot.

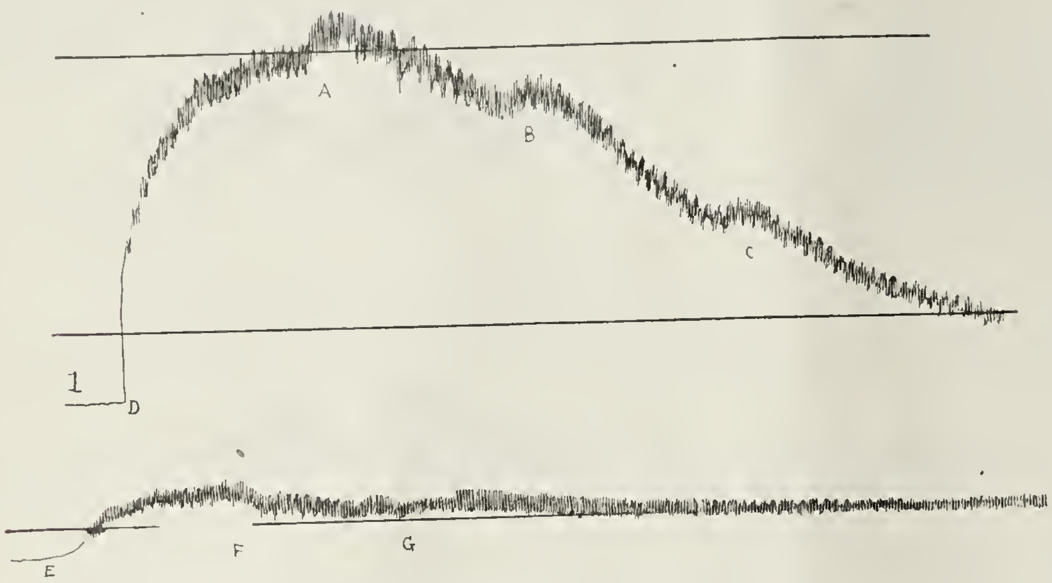

Fig. 19.—Influence of adrenalin. The upper tracing shows that raising the pressure by adrenalin does not improve the response to ergot. Paralysis of vasomotor endings by ergot: A comparison of the upper tracing (after 0.14 gm. of ergot per kilo) and the lower[2] (0.64 gm.) shows how the response to adrenalin has been decreased by the ergot. Sciatic stimulation has also become almost ineffective. In 1, at A, 11:30, B, 4:31, and C, 4:32, 25 c.c. of ergot were injected. At D, 11:27, adrenalin was administered. In 2, at E, 11:46, adrenalin was administered, at F, 11:46¼, sciatic stimulation, at G, 11:46½, 50 c.c. of ergot were injected. This is not the true base line.

STATEMENTS OF OTHER OBSERVERS.

Eberty[17] also found that ergot did not change the pulse-rate in atropinized mammals. With the vagi intact and active, Koehler and Eberty,[7] Wood,[3] and Bradford and Dean[13] found the heart considerably slowed during the rise of pressure. The slowing could easily be due to the latter. These experimenters were generally dealing with more marked pressor phenomena than occurred in our experiments. We observed a slowing in only one out of ten experiments in which the pressure rose above normal. In man, large doses of ergot are generally stated to slow the heart by from 10 to 25 beats a minute.

EXPERIMENTS ON FROG'S HEART.

We did not perform any of these, and mention them only for the sake of completeness. The heart appears to be slowed and weakened (Hemmeter[14]); and according to Koehler and Eberty,[7] this is due to stimulation of the vagus endings, proceeding to diastolic standstill. The action is, therefore, not the same as in mammals.

SECTION OF THE VAGI DOES NOT INTERFERE WITH THE TYPICAL ACTIONS OF ERGOT.

This conclusion is sufficiently confirmed by the experiments already cited. We have compared the effect of ergot before and after vagotomy in quite a number of our experiments. There was no material difference in the rise and fall, but only in the change of rate during the fall, which is probably an indirect effect, as we have just explained.[18]

This is also the conclusion of all the other investigators. Holmes has also shown that the results may occur when the depressor nerves are divided in rabbits.

HOLMES' THEORY OF THE CAUSE OF THE PRIMARY FALL IN THE SYSTEMIC PRESSURE.

Holmes,[6] who appears to be the discoverer of this effect of ergot, explained it by a powerful constriction of the pulmonary vessels, preventing the access of blood to the left heart, and hence to the general circulation. He advanced this theory on purely speculative grounds, without any experimental foundation. Later, Bradford and Dean[13] showed that this injection of ergot does indeed raise the blood pressure in the pulmonary artery, but not sufficiently to account for the fall in the systemic pressure. Mellin[10] obtained the same results, and finds further that the rise in the pulmonary, and the fall in the systemic pressure may occur independently, and have absolutely no relation to each other. It is to be remarked that the pulmonary pressure never shows a primary fall.

Ergot exhibits the phenomenon of (apparent) depression preceding stimulation. These successive effects have hitherto been explained by invoking two distant actions. According to the prevailing theory, the ergot, when injected intravenously, reaches the heart in concentrated form and depresses it. As the drug becomes diluted, this depression wears off and at the same time a vasoconstriction develops.

This simple explanation—that the passing of the depressant action is due to the dilution of the ergot—found support in the observation that ergot does not lower the pressure if it reaches the circulation slowly.[19] It is absolutely disproved, however, by our experiments on Langendorff hearts, in which the heart recovered and was even strengthened during the course of the injection.

PROLONGED INFUSION OF ERGOT.

Precisely the same result is obtained on intact animals. When large and long injections are made, the pressure falls, as usual, but immediately in every instance (7) recovers and rises even above normal (Fig. 13); but whenever the rate of injection is increased, the pressure again falls, and again recovers (Fig. 14).

These observations prove conclusively that the (apparent) depressant effects of the ergot pass off and are succeeded by stimulation, while the influence of the ergot is kept constant; and since these phenomena are seen also on the excised heart, in which scarcely anything but the muscle could be affected, it follows that the ergot first (apparently) depresses and then stimulates a single structure (i. e. the cardiac muscle).

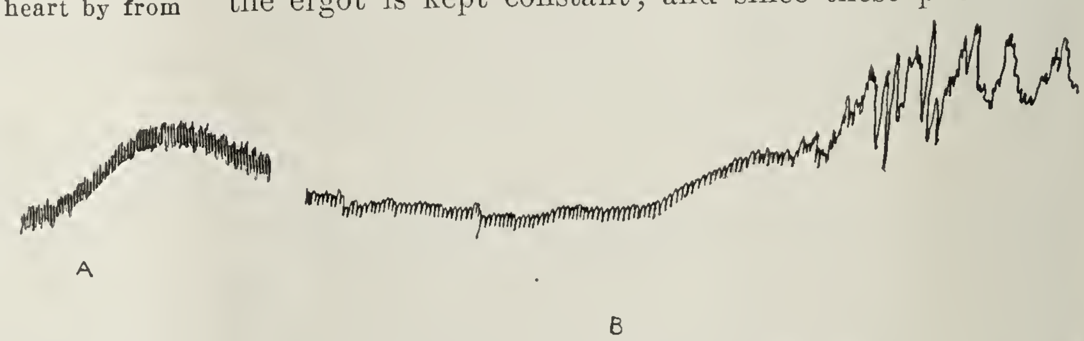

Fig. 20.—Paralysis of vasomotor endings after 0.75 gm. of ergot per kilo. The blood pressure reacts but weakly to adrenalin, strongly to barium. At A, 12:25¼, 1 c.c. of adrenalin was injected; at B, 12:29½, $BaCl_2$, 20 mg., per kilo. Base lines omitted.

DISCUSSION OF THIS PHENOMENON.

The succession of a depression by a stimulation of the same structure, under a constant dosage of the drug, would be an almost unique phenomenon in pharmacology. It is furthermore rendered unlikely by the recurrence of the fall when the rate of injection is hastened. One should look, therefore, for other explanations. The following occur to us:

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[18] After we had confirmed the absence of influence of vagotomy on the ergot phenomena, we performed this operation in most of the experiments, before injecting the ergot.

[19] See intramuscular injection.

It might be that the depressant and stimulant effects are due to two separate ingredients of ergot—the former acting quickly, the latter after a latent period, but more powerfully. This view has some support in the rather constant predominance of one action over the other, in some of the ergot preparations. It is contradicted, however, by the results of Jacobj,[8] who found that his isolated principles produced both actions.

The second explanation which we have to offer, is, that the lessened excursions of the heart are not produced by depression, but by a systolic stimulation of such strength as to prevent complete relaxation—a phenomenon noticed in certain stages of digitalis action. The secondary increase of excursions would be due to lesser degree of this action, from a kind of incipient fatigue. The rise of pressure without preliminary fall, after intramuscular injection would be due to the concentration of the ergot never reaching the degree where it would cause the hypersystolic condition. The support of this explanation lies in the observation that, in our Langendorff hearts, the lessened excursions were accompanied by a distinct systolic tendency in 5 out of 7 perfusions (Fig. 11). In the other two, the position of the heart was median—never diastolic. The theory is rendered insecure, however, by these exceptions; it also fails to account for the occasionally still greater increase of systole during the succeeding phase (Fig. 10).

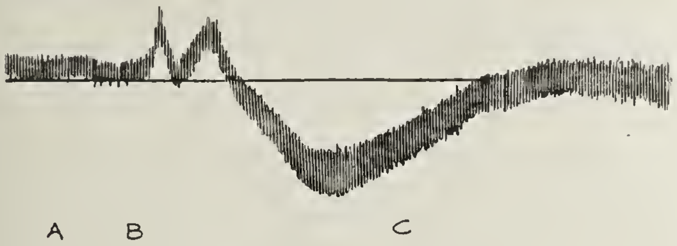

Fig. 21.—-Anomalous ergot effect, of warm saline solution, 25 c.c. per kilo. A, 9:24; B. P. 143 at B, 9:24½, injection of solution started; at C, 9:26, the injection was stopped. Base line omitted.

A third explanation could be offered, namely, that the cardiac effects are merely indirect, the result of (hypothetical) changes in the coronary vessels. We did not investigate this, as it seemed to us unpromising, in view of the absence of peripheral vasomotor effects in other organs.

There are, therefore, objections to each of these suggested explanations; but we regret that we must leave the subject in this unsatisfactory manner.

SOME OTHER ACTIONS OF ERGOT.

Respiratory and Motor Stimulation.—Holmes noticed that his animals (which were not anesthetized) cried out and struggled during the fall of pressure; they quieted again before the pressure arose. Jacobj[8] and others have also observed this. Struggling occurred in several of our experiments, when the anesthesia was light. In a still larger number, the respiration was greatly increased during the fall. We are inclined to attribute these results to asphyxia, from the sudden anemia of the centers.

THE INFLUENCE OF CERTAIN CONDITIONS ON THE EFFECTS OF ERGOT.

The Influence of the Dose.—By comparing the effects of different doses on the same animals, it was found that the effect increased with the dose to a certain point. Above this optimum dose—0.01 to 0.04, generally 0.02 gm. per kilo,—further increase of dose does not increase the effect. Even very large single doses—0.3 gm. per kg.—produce identical effects (Fig. 13). Very large doses, or frequently repeated injections, have certain additional effects, which will be discussed later.

Repetition of the Injections.—When several doses of ergot are injected with a few minutes interval, the effect is generally identical. If the injections succeed very closely, the effect is progressively lessened; the mean blood pressure rises at the same time—probably from the saline solutions which are introduced with the ergot (Fig. 15). When too many doses are given, the mean pressure falls and the ergot becomes less effective. The lessened effect is doubtless due usually to the lowered blood pressure and shock. In the Langendorff hearts, the reactions also became less and less pronounced as the ergot perfusions were repeated; but this might well be due to the gradual dying of the heart.

THE INFLUENCE OF BLOOD PRESSURE, SHOCK, ETC., ON THE ERGOT PHENOMENA.

We had frequent occasions to observe that the effects of ergot, particularly the fall, vary quantitatively with the condition of the animal, particularly with its blood pressure. In every case in which this was low, the ergot effect was also small, and in a general way, vice versa.

The Influence of Blood Pressure.—This may be presented in several ways:

Arranging the data of 61 experiments into three groups, according to the mean blood pressure just before the ergot was injected, we find:

Mean Blood Pressure, (mm. Hg.):	Above 125	75 to 125	25 to 75	
			Inclusive of Section of Cord.	Exclusive of Section of Cord.
Percentage of the experiments showing a primary fall of pressure.......	89	74	17	17
Mean fall in mm.........	45	23	3½	3½
Percentage showing a rise of pressure	67	6.1	35	0
Mean rise in mm.	8.3	61	16.2	0
Number of experiments . .	18	31	23	12

It is seen that the frequency and the extent of the ergot phenomena—both fall and rise—vary in the same direction as the blood pressure. Changes of the pressure within each of these divisions does not influence the ergot effect materially. The difference between the first and second groups (between pressures above 125 mm. and between 125 and 75 mm.) is unmistakable but moderate. A very abrupt decrease of efficiency occurs with pressures below 75 mm., i. e., about the point where "shock" may be said to begin.

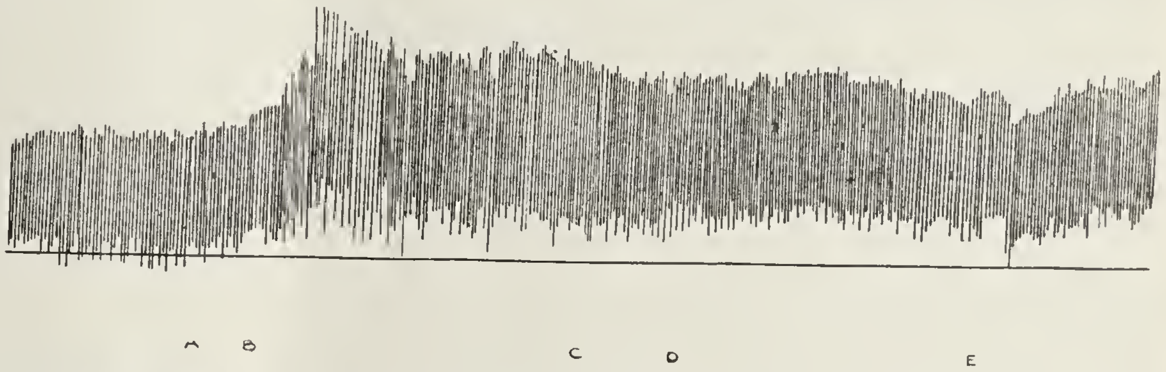

Fig. 22.—Effect of saline injection; prolonged rise and increased excursions; small dose before ergot. A, 10:39; B. P. 151; B, 10:40, 36 c.c. saline solution injected: C, 10:42; B. P. 174; D, 10:43, 18 c.c. saline solution injected; E, 10:44½, 25 c.c. ergot (P. D. & Co.) injected. Base line omitted.

The influences of blood pressure are equally obvious when the experiments are studied individually:

In a series of 24 experiments in which the mean blood pressure had risen, the ergot fall also increased in 17. In a series of 17 experiments the secondary rise was increased in 3.

In a series of 25 experiments[20] in which the mean pressure had fallen, the ergot fall was decreased in 24; in 14 experiments the ergot rise was also decreased.

Illustrations of these modifications will be given in the next section.

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[20] Experiments in which the ergot was ineffective at the higher pressures and in which the cord was destroyed are excluded.

INFLUENCES OF CHANGES OF BLOOD PRESSURE, ARRANGED ACCORDING TO THEIR CAUSES.

The Influence of Hemorrhage and Saline Infusions.—Severe hemorrhage lessened the response to ergot in every case. This is illustrated on Dog 16, and on Dog 30, Fig. 16. In the latter experiment the injection of warm Locke's fluid always increased the response, in strict proportion to the rise of mean blood pressure (Fig. 17). The injection of blood acted still more powerfully (Fig. 18). In Dog 16 the injection of saline solution and blood did not increase the efficiency of ergot; but neither did it raise the mean blood pressure materially. It may, therefore, be concluded that bleeding and the infusion of saline solutions modifies the action of ergot by changing the blood pressure.

The injection of saline solution in shock is much less effective, but still has the same kind of influence. This is shown by Dog 29. The animal was in shock from the start. In Dog 17 (shock from piercing the abdomen, pressure 47), the injection of 100 c.c. of salt solution did not increase the response to ergot, but neither did it raise the blood pressure.

The Influence of Operative Shock.—Opening the Thorax.—This invariably caused a great fall of blood pressure and a correspondingly lessened efficiency of the ergot fall and rise. It was observed in Dogs 27, 28 and 31.

Operations on Abdomen.—These did not usually cause a material fall of pressure, and consequently did not affect the ergot phenomena. In Dog 17, however, the pressure fell from 175 to 47, and the ergot fall and rise were correspondingly decreased. A (spontaneous) recovery of the mean pressure to 65 mm. did not improve the response to ergot.

Shock from Unknown Causes.—This had the same effect as operative shock. It was seen in Dogs 18, 19 and 29. Dog 19 is interesting, as it showed considerable spontaneous changes in the blood pressure.

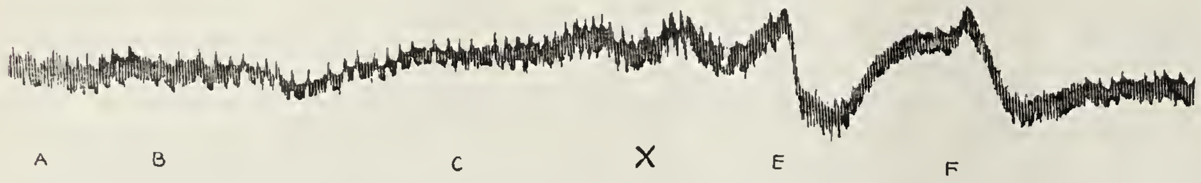

Fig. 23.—Anomalous effect of saline solution. A more typical ergot effect is obtained in this case with saline than with ergot. Sciatic stimulation is effective, after 0.36 gm. ergot, per kilo. Base line omitted. A, 11:25; B. P. 130; B, 11:26, started injection of ergot (18 c.c.); C, injection stopped, time 11:28. X, sciatic stimulation; E, 20 c.c. normal saline injected, time 11:31½; F, 20 c.c. normal saline injected.

Pressure.	S. K. F. Ergot.		Acetic Ergot.	
	Fall.	Rise.	Fall.	Rise.
80 mm.	0 mm.	20 mm.	60 mm.	10 mm.
108 mm.	40 mm.	10 mm.	..	..
134 mm.	0 mm.	10 mm.	..	..
42 mm.	..	..	0 mm.	0 mm.

Spontaneous Rise of Blood Pressure.—In Dog 26 the blood pressure rose, from unknown causes, from 164 to 188 mm.; the ergot fall increased from 40 to 50 mm., the secondary rise diminished from 20 to 10 mm.

Shock from Destruction of Spinal Cord.—It will be recalled that imediately after destruction, in the primary shock, the ergot fall is abolished and the ergot rise increased. After a time a recovery from this primary shock occurs, in which the ergot fall reappears (but remains much less than normal), and the abnormally high ergot rise is diminished. This is succeeded by a secondary shock in which the fall and rise are both greatly diminished or abolished.

Shock from Ergot Itself.—We have observed that the response to ergot is lessened after large doses of the drug have been given, the mean blood pressure being also lowered. This was seen in dogs 32 and 34, and in many others.

The Influence of Depressor Stimulation and of Amyl Nitrite.—This was also discussed previously. It supports the general relation of the ergot response to the blood pressure.

This is also true of variations of blood pressure produced by variation in the degree of anesthesia. In Dog 15 the ergot produced a fall of 50 mm. with a mean pressure of 140, 40 mm. with a mean pressure of 115, 50 mm. with a mean pressure of 140, the changes of blood pressure being due purely to the anesthetic.

Influence of Adrenalin on the Ergot Phenomenon.—Increasing the blood pressure by adrenalin furnishes most striking exceptions to the rule that the ergot response varies with the blood pressure. In five dogs in which the response to ergot had almost or quite disappeared on account of shock—the pressures being from 40 to 70 mm.—the raising of the pressure by adrenalin did not restore the ergot phenomena to their original degree, although it improved them slightly in most cases (Fig. 19).

The failure of the adrenalin rise to influence the ergot phenomena is not due to any interference of the two drugs; for if the adrenalin was given to animals which reacted typically to ergot, it did not diminish this reaction. It may be due to the relatively short duration of the blood-pressure rise.

It will be apparent, from the preceding, that the effects of ergot are modified quantitatively by the blood pressure of the animal, the response to ergot becoming insignificant with pressure below 75 mm.

THE EFFECTS OF VERY LARGE (TOXIC) DOSES OF ERGOT.

The immediate results of the intravenous injection of large doses of ergot differ in no essential from those of small doses. Figure 13, for instance, shows precisely the same phenomena from 0.3 gm. of ergot per kilo, as are ordinarily produced by a tenth of this dose. The secondary rise is generally higher, sometimes considerably so, as in Dog 17 (0.43 gm. of ergot per kilo); but this may be largely referred to the saline solution which was injected with the ergot (in this case, 182 c.c.).

When a considerable number of doses are injected in close succession, as in Figure 15, the blood pressure at first rises, and then falls progressively. The latter phenomenon is to be explained by a gradual depression of the vasomotor endings, which occurs very slowly. Repeated large doses of ergot also depress the cardiac vagus center, the excitability of the cardiac vagus endings being preserved. Even very large doses (to 2.27 gm. per kilo) were not fatal in the period of observation.

FATALITIES IN THE COURSE OF THE ERGOT EXPERIMENTS.

In a series of thirty dogs injected with quantities of ergot exceeding 0.086 gm. per kilo, only eight died spontaneously. The death in these cases was due to shock, from assignable causes other than ergot. Of those which survived, and which were killed intentionally at the end of the observations, the following quantities of ergot had been injected intravenously:

In five dogs	0.6 to 1 gm. per kilo.
In three dogs	1.0 to 1.5 gm. per kilo.
In three dogs	1.5 to 1.8 gm. per kilo.
In one dog	2.27 gm. per kilo.

Effect of Division of the Vagi after Large Doses of Ergot.—In normal dogs, division of the vagi quickens the heart rate and diminishes the excursions of the manometer. In the four dogs in which we performed this operation after 0.12 to 0.78 gm. of ergot per kilo had been given, only one (with 0.2 gm. per kilo) showed any quickening, and this only from 120 to 141 beats per minute. The three others showed no effect whatsoever. In one of these, the loss of vagus tone could not be attributed to anemia or to shock of the vagus center. This indicates that large doses of ergot gradually depress the vagus tone.

Effect of Large Doses of Ergot on the Mean Rate of the Heart.—Comparing the tracings at the beginning and toward the end of the experiments, in which the vagi had not been divided, we found that the heart rate was materially increased and the excursion lessened in three dogs (0.1 to 0.9 gm. per kilo); not affected in three dogs (.04 to 0.6 gm. per kilo); rate increased in none.

There is consequently a distinct tendency to increase the heart rate. That this is due to a depression of the vagus center is shown by comparison with a series of six dogs in which the vagi were divided early in the experiment: In all of these, the heart rate remained unchanged throughout the injections (0.08 to 0.96 gm. of ergot per kilo).

Effect of Rise of Blood Pressure on the Heart Rate.—In normal animals, a rise of blood pressure (as by adrenalin) is generally accompanied by a slowing of the heart, from central vagus stimulation. This was very often absent after large doses of ergot.

The excitability of the vagus nerve and endings is not affected by ergot. In five dogs, electrical stimulation of the vagus was effective after doses of from 0.56 to 2.4 gm. per kilo.

The only statement bearing on this point, which we encountered in the literature, is by Boreischa (quoted from Wood[3]), that large doses of ergot quicken the heart, and paralyze the vagus nerve endings. The first statement agrees with our results, but the second does not.

Effect of Large Doses of Ergot on the Mean Blood Pressure.—This subject is somewhat difficult to investigate, as one can never be quite certain that other causes of shock are really excluded. Making this exclusion as fairly as possible, and comparing the blood pressure early and late in the experiments, it is found that in a series of 17 dogs:

	Dose of ergot given before the last observations (gm. per kilo).	
Mean blood pressure.	Extremes.	Mean dose.
Fell in 6 experiments..........	0.24 to 1.87	0.38
Rose in 5 experiments.	0.04 to 0.8	0.155
Unchanged in 6 experiments....	0.12 to 0.96	0.33

The average fall of mean blood pressure in the six experiments showing a fall, amounts to 47 mm.

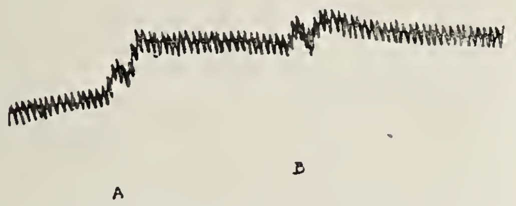

Fig. 24.—Common effect of saline solution. A, 10:47½, 20 c.c. of saline solution injected; B, 10:49, injection repeated. Base line omitted.

This indicates a distinct tendency to a considerable fall of the mean pressure, which is also illustrated in Figure 15.

Effects of Large Doses of Ergot on the Response to Adrenalin.—1 cc. of 1:1000 adrenalin, injected intravenously with 10 cc. of saline solution, produced but a small effect after large doses of ergot had been given, as shown by the following table:

Rise of blood pressure produced by adrenalin.	After dose of ergot (per kilo.)	Number of Experiments
0 to 35 mm.	0.64 to 2.4 gm.	5
45 to 60 mm.	0.1 to 1.18 gm.	6
70 to 120 mm.	0.14 to 0.24 gm.	3

This is also well illustrated on Dog 23:

Dose of ergot.	Adrenalin rise.
0.4	160
1.18	55
1.38	25

Figure 19 shows almost complete absence of reaction after 0.64 gm.

Effect on Response to Splanchnic Stimulation.—This was very much diminished, simultaneously with the response to adrenalin:

Dose of ergot per kilo.	Adrenalin rise.	Splanchnic rise.
.85 gm.	+60 mm.	+10 mm.
1.38 gm.	+25 mm.	+8 mm.
.78 gm.	+35 mm.	0 mm.

The Response to Sciatic Stimulation.—This was also lessened.

Dose of ergot per kilo.	Adrenalin rise.	Sciatic rise.
.36	..	30
.64	+25	8

Strychnin convulsions were also practically ineffective in raising the blood pressure.

Barium chlorid (20 mg. per kilo), on the other hand, was perfectly efficient. Figure 20.

It must be concluded that large doses of ergot produce a peripheral vasomotor paralysis. Since they prevent the action of adrenalin, but not that of barium, it must be concluded that they depress the endings.

EFFECT OF ERGOT ON THE VASOMOTOR REACTIONS IN EXCISED ORGANS.

Adrenalin caused no constriction, but a dilation of vessels, when it was injected into a spleen which had been perfused with ergot for 25 minutes. A kidney, after fifteen minutes perfusion with ergot, reacted but slightly to adrenalin. An intestine, after thirteen minutes of ergot, gave a food adrenalin reaction.

These results coincide with those obtained on living animals.

RESULTS OF OTHER INVESTIGATORS.

The fall of blood pressure after large doses of ergot has been observed by Haudelin, Boreischa, Brown-Sequard,[21] and others. Koehler and Eberty[7] claim that the vasomotor center responds to reflex stimulation even after the largest dose of ergot. Boreischa also noticed that this fall of pressure does not occur if the ergot is given after the spinal cord has been cut; this also agrees with our observation, and our interpretations.

THE RESULTS OF PLUMIER.[22]

After the completion of this paper, we became acquainted with the work of Plumier, published Jan. 15, 1905. This is especially interesting, as he obtained the same results on the excised heart. His principal observations, however, bear on the action of ergot on the pulmonary vessels. With the fluid extract of ergot (and in rather large doses) his results are as follows:

The effect on the general blood pressure consists in a considerable primary fall, followed by a small secondary rise. The pressure in the pulmonary artery rises without primary fall. The pressure in the left auricle does not generally change. The heart rate is quickened during the fall. The volume of the kidney diminishes during the fall, but does not recover during the rise. Langendorff hearts show a primary depression and secondary augmentation. Artificial perfusion of the leg shows a slowing. The blood flow through the lungs is slowed, even after section of the nerves and after death.

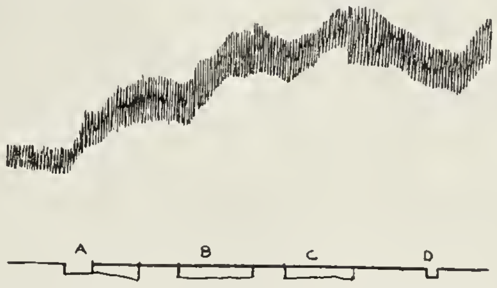

Fig. 25.—Saline injection; example of persistent rise in spontaneous shock. A, 10:37, 100 c.c. saline solution injected; B, 10:37¾, injection repeated; C, 10:38¼, injection repeated; D, 10:39, 16 c.c. ergot injected.

These results show the same effects on the heart as we have observed; they present, however, a more powerful vasoconstriction. Plumier, therefore, attributes the primary fall of pressure to the cardiac action; but the secondary rise is composed of two factors: cardiac augmentation and vasoconstriction. He does not express himself as to the relative importance of these two factors. Our results also indicate that this is variable. In the effect on the pulmonary circulation a peripheral vasoconstriction predominates.

Another ergot preparation gave much less cardiac depression. Tanret's ergotinin was devoid of cardiac action, but produced a strong vasoconstriction even in the systemic circulation. (Considering the variable response of different animals, it seems to us that the conclusions as to these different preparations would require a rather large amount of experimental material.)

CONCLUSIONS.

The typical effects of the intravenous injection of ergot consist in a large and abrupt fall of blood pressure, followed by a prompt recovery, and generally by a slight and short rise. The volume of the organs varies generally in the same direction as the blood pressure. The changes in the latter are mainly cardiac. This is confirmed by myocardiograms from the intact and excised heart. Ergot causes first a lessening and then an increase of the excursions; both phenomena may occur whilst the ergot is being injected. The rate of the heart is but little altered. The effect of ergot must be exerted directly on the cardiac muscle. There is some oncometric evidence that ergot has a slight vasoconstrictor action, but this is inconstant and inconsiderable. There was no evidence of strong constriction or of a high rise of blood pressure.

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[21] Brown-Séquard: Archives de Physiologie, 1870, vol. iii, p. 434.

[22] Plumier, L.: Journ. de Phys. et Path. gén., 1905, vol. vii, p. 13.

The preliminary fall of blood pressure is absent if the ergot is given by intramuscular injection.

The action of ergot is independent of the dose, within wide limits. The relative predominance of the fall and rise differ somewhat in different ergot preparations; age, however, does not impair the efficiency of their action on the mammalian circulation. The effects are greatly diminished by lowering the blood pressure, by any method. Shortly after the destruction of the spinal cord, however, ergot produces a relatively good rise of pressure.

Large doses of ergot depress the vagus center and the vasomotor endings. It is not acutely fatal, even in very large doses.

THERAPEUTIC BEARING OF THE RESULTS.

Our experimental material contains no item which would point to ergot as a useful drug for modifying the general circulation. The reputed rise of blood pressure is too small, and particularly too short, to have any significance. It fails most completely in conditions in which the blood pressure is low.

In making this statement, we would not be understood as denying the existence of those vascular actions which have been discovered by some clinicians, and denied by others. We would merely say that these clinical observations are not at present supported by experimental evidence. The peculiar effect of ergot on the combs of fowls indicates that certain animals, and special vascular areas, are more susceptible to the constrictor action of the drug. Man may belong to this class. Frenkel[23], by the use of Basch's sphygmomanometer, claims to have demonstrated that the hypodermic injection gives a small rise, of from 20 to 30 mm., but lasting over an hour. So far as we know, her observations have not been repeated. Nicol and Mossop claim to have observed a constriction of retinal vessels. It is conceivable that ergot, acting in man unequally on different organs, might thus alter the distribution of blood so as to be of benefit in the obscure conditions in which it is recommended. In the face of the negative experimental evidence, however, clinical conclusions should be formulated with caution and conservatism.[24]

AN UNUSUAL EFFECT OF SALINE INJECTION.

In the course of the ergot experiments, we had occasion to observe several times a rather peculiar effect on injecting 0.9 per cent. sodium chlorid solution intravenously. This consisted in a considerable primary fall, followed by a slight secondary rise, resembling very closely the typical ergot phenomena. This occurred in three animals, only when the blood pressure was high. It could be repeated a number of times on each animal. It occurred better with relatively large doses (20 to 25 c.c. per kilo), Figure 21, but was also observed with small doses (2 to 4 c.c. per kilo). In at least one of the experiments, the saline solution was at body temperature when injected. The peculiar phenomenon was at its best when the ether had been removed for some time. It disappeared completely when the animals passed into shock.

Figure 23 shows a more typical "ergot" effect from saline solution than from ergot.

It is scarcely necessary to say that we always made control injections of saline solution, comparing them with equal quantities of our ergot solutions.

For comparison, we append tracings showing the ordinary effects of small doses of normal saline with good blood pressure (Fig. 24); and of large injections with low blood pressure (Fig. 25).

INGUINAL HERNIA OF THE BLADDER.

REPORT OF A CASE. REMARKS ON DIAGNOSIS.*

S. C. PLUMMER, M.D.
CHICAGO.

Patient.—H. E. R., aged 40, locomotive engineer, on Dec. 24, 1903, jumped from his engine, which was about to leave the track. He struck on his feet, which slid out from under him, allowing him to fall heavily on his buttocks.

Examination.—Dr. R. A. Kerr, of Peoria, who examined him the same day, reports "a very large left inguinal ring. No previous history of hernia. No protrusion of abdominal contents." About a month later I saw the patient and he plainly had, at that time, a left inguinal hernia. I arranged to operate on him at a later date to suit his convenience. On the right side, there was no sign of a testicle either in the scrotum or in the inguinal canal, and the patient said there never had been.

Operation.—June 16, 1904. After making the usual incision, a thick-walled sac, containing much fat, was separated, with some difficulty, from the surrounding tissues. The sac was the size of a large walnut, and had a neck as large as the greatest diameter of the sac, easily permitting the ends of three fingers to be passed through it. The opened sac was found to contain omentum and bowel. It was transfixed with a needle threaded with catgut, and, after being ligated off, first in halves, then by encircling the entire neck with a ligature, the redundant portion was cut away.

In an ordinary case, I should now have proceeded to sew up the inguinal canal, but in this case there was so much fat in the canal that I thought best to dissect away some of it. In doing this, I discovered another sac to the inner side of the first. This sac was about one and one-fourth inches long and one-half inch in diameter, with a neck slightly less in diameter. In structure it resembled the average hernial sac of peritoneum. On opening it, it had the appearance of peritoneum, and, on exploring with the finger, I found that the opening led down behind the pubic bone; no intestine or omentum could be felt. I was at a loss how to account for this second sac. In view of the absence of the testicle on the opposite side, the possibility that this had some connection with a misplaced funicular process occurred to me. I put a ligature around the neck and cut away the sac. Then I was struck with the thought that, perhaps, I had to do with the bladder. I removed the ligature, and, on holding apart the edges of the wound, I could see fluid. I passed a sound through the urethra, and, on pushing an artery forceps through the neck of the sac, the two came in contact. The fluid which I saw was, of course, urine.

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[23] Frenkel. S.: Deutsches Archiv für klinische Medicin, 1890, vol. xlvi, p. 571.

[24] Other references which may be consulted are Grünfeld, A.: Dorpat Arbeiten, 1890, vol. iv, p. 1; 1892, vol. viii, p. 108; 1895, vol. xii, p. 295. Houghton: Ther. Gaz., 1889, vol. xxii, p. 433; 1903, vol. xxvii, p. 450.

* Read by invitation at the meeting of the medical societies of the second congressional district of Iowa, and of the Iowa and Illinois Central District Medical Society, Davenport, Iowa, 1905.

Being now sure that I had a wound of the bladder, I proceeded to repair it, using two layers of continuous catgut suture, the first passing through the cut edges, but not coming out on the mucous surface of the bladder wall, the second being inserted in a manner similar to a Lembert suture. The wound was not more than an inch long and was in the extraperitoneal portion of the bladder.

The inguinal canal was now closed by Ferguson's method with the exception of about one inch at the lower inner end, where a gauze drain was inserted down to the bladder. A catheter was passed into the bladder through the urethra and allowed to remain there.

After-Treatment.—The patient made an uneventful recovery. The highest temperature was 100.5 F. on the evening of the day following the operation. On the second day the dressing was changed. There was no leakage from the bladder wound. The gauze packing was removed and a smaller piece of gauze inserted into the wound, but not down to the bladder. At the end of three days, I removed the catheter, and during the next two days the patient was instructed to urinate every two hours voluntarily. On the fifth day, I removed all drainage and inserted two catgut sutures through the aponeurosis of the external oblique and conjoined tendon above and Poupart's ligament below, also two silkworm-gut sutures through the skin, under nitrous oxid gas anesthesia.

Result.—Primary union. The patient was kept in bed till July 3, and left the hospital July 13. Shortly afterward he returned to work. On Feb. 4, 1905, I examined him and found no recurrence of the hernia, although he reports that, about Jan. 1, 1905, he slipped from the running board of his engine and fell to the ground, a distance of about six feet, alighting on his feet.

Since the radical operation for the cure of hernia has become so common it has been learned that hernia of the bladder occurs more frequently than was formerly supposed. As a rule, the diagnosis can not be made clinically, but comes as a surprise during the operation. In some of the reported cases the operator has recognized the bladder before wounding it, but in the majority it has been recognized only after being wounded, and in some not even then.

Why is it that the various operators who have reported cases have almost invariably been puzzled as to the identity of the structure with which they had to deal when meeting with a hernia of the bladder for the first time?

I think it is because we have been taught to regard this condition as a curiosity, and so have failed to be on the lookout for it. In my own case, although I had never before seen an inguinal hernia of the bladder, I feel that I should have recognized it sooner, for, in assisting the late Dr. Christian Fenger in hernia operations, I was taught to look for this condition, and an urethral sound was always ready during each hernia operation. One condition which should have been suggestive to me was the presence of an abundance of fat in the inguinal canal, which is mentioned by all authors as usually accompanying bladder hernia. Again, the position of the second sac, to the median side of the true hernial sac, was characteristic. The feature which deceived me was the appearance and structure of the sac itself. It did not at all resemble the normal bladder wall, and probably was devoid of muscular tissue, as the herniated portion of the bladder frequently has been found to be. Its thickness was about that of blotting paper. The absence of the testicle on the opposite side added to the confusion by suggesting some anomalous arrangement.

Inguinal hernia of the bladder is almost always accompanied by intestinal or omental hernia. According to the portion of the bladder involved, we speak of extraperitoneal, intraperitoneal and paraperitoneal, the latter involving that portion of the bladder which is partly intraperitoneal and partly extraperitoneal, and this is by far the most frequent form. My case, however, was of the extraperitoneal variety.

Clinical symptoms suggestive of the presence of the bladder in an inguinal hernia are difficulties in passing urine, the enlargement of the hernia when the bladder is full and the fluctuation in the tumor. Hernia of the bladder generally occurs in adults. Sometimes the patient can empty the bladder only with his body in a certain position or when he makes pressure with his hand over the hernia. Sometimes the urine escapes drop by drop, and again it may be voided in two acts, the first emptying the bladder proper, the second the herniated portion. Sometimes pressure on the hernia causes a desire to urinate.

Distention of the bladder for diagnostic purposes may be brought about by having the patient retain his urine for a long time, or by injecting the bladder with air or water. Occasionally it has been found possible to pass a catheter into the herniated portion.

Pressure may reduce the size of the fluctuating swelling, the accompanying intestinal or omental hernia may be reduced, but almost invariably there remains behind what B. Farquhar Curtis[1] describes as "a small, flat, doughy tumor, feeling like a thickened sac or like a flattened piece of adherent omentum."

Conditions which lead to the suspicion of the presence of the bladder during operation are the presence of an unusual amount of fat in the inguinal canal, the location of the tumor, the difficulty of separating it from the true hernial sac, the recognition of its musculature when present, the possibility of passing an urethral catheter or sound into the hernia, in addition to which Shepherd[2] mentions the large size of the inguinal opening, out of proportion to the size of the protruding intestines, the likelihood that the hernia will be direct (two out of four cases in his personal experience), and the difficulty of finding a neck to the true hernial sac. The latter difficulty was present in my case. The fat which is present in the inguinal canal in these cases may be found as a diffuse layer or as a lipoma.

The herniated portion of the bladder is always found to the inner side of the true hernial sac. Sonnenberg, writing in "von Bergmann's Surgery," says that it is always to the inner side and behind the hernial sac. As a rule it lies to the inner side of the spermatic cord instead of in front of it, as the ordinary inguinal hernial sac does; it is not intimately connected with the cord. The pedicle of the herniated portion of the bladder leads down behind the pubic bone into the true pelvis.

In the most frequent form of bladder hernia, the paraperitoneal, that portion of the bladder which has a peritoneal covering, is continuous with the posterior and inner portion of the true hernial sac; in some cases, indeed, it actually forms this portion of the true hernial sac, and consequently is very easily injured in cleaning off or in ligating the neck of the sac. This intimate connection between the true hernial sac and the bladder makes it very difficult to separate the one from the other without injury to the bladder.

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[1] Annals of Surgery, vol. xxi, 1895.

[2] Annals of Surgery, vol. xl, 1904.

If the portion of the bladder which is in the hernia is normal, the bladder wall can be identified by its thickness, but frequently there is little or nothing of the muscular coat present in the hernia, which, consequently, has more the appearance of an ordinary hernial sac.

If the tip of an urethral sound can be made to pass from the bladder into the hernial sac, it is proof positive that there is a hernia of the bladder, but it is not, as a rule, possible to do this.

If the bladder has been wounded it may be identified by the presence of urine and by the possibility of passing a metal instrument through the wound and bringing it in contact with a sound passed into the bladder through the urethra.

The bladder has been mistaken for the true hernial sac, for a lipoma, for properitoneal fat, for omentum, for a cyst, for a thickened patch in the sac wall, for a hydrocele of the cord, for a sacculation of the colon, and finally, as in my case, for a second hernial sac.

In the radical operation for the cure of inguinal hernia as done to-day, the neck of the sac is drawn down as far as possible in order to ligate off the sac as high as possible. In doing this the neighboring parietal peritoneum is also drawn on, and through it traction may be made on the bladder. In case of a recurrence of the hernia after operation, it can readily be seen that the bladder would be quite likely to be present in the hernia. In operations for recurrent hernia, therefore, we should be particularly on our guard against wounding the bladder.

FETAL DEATH FROM LOOPING OF CORD.

HERBERT C. JONES, M.D.,
DECATUR, ILL.

When we consider the conditions present in the uterus during pregnancy, it should not be a matter of surprise that complications arise, in the relation of the movable contents, but rather that such complications are not more frequent.

There is a developing fetus with more or less freedom of movement floating in an ovoid sac of fluid, and attached at its center by a long loose cord to the uterine wall. Let it not be forgotten that the permeability of this rope of blood vessels is at all times essential to fetal existence, and if the evidence of the prospective mother is to be accepted, this selfsame fetus is seldom still, day or night, during the latter half of intrauterine life.

I agree with the statement of obstetric writers that once in every five or six labors this cord is found looped about some portion of the newborn infant, usually the neck, from one to six or eight times, and I think that most experienced obstetricians will agree that this occurs more frequently than stated. In my own experience, covering over fourteen hundred cases, I should think the condition had been present in greater or less degree in nearly half my cases, though I have no record to verify the statement. These cases embraced from one to four loops about the neck, arm, body, or leg, or a combination of two or more of these loopings.

It has been suggested that this looping may in some cases be a conservative accident, saving an unusually long cord from the danger of prolapsing. Be that as it may, while it has sometimes been annoying and doubtless offered some hindrance to delivery, as well as requiring hurried attention after the delivery of the head, I have seldom seen any serious results follow this very common accident.

In one case, occurring in early practice, an otherwise physically perfect infant was still-born, though at the beginning of the second stage of labor it was alive, as shown by audible fetal heart sounds and perceptible movement. Postnatal examination showed that the cord which was around the neck and across the face had been compressed between the arm and the cheek or brow during a tedious delivery. It is possible that a hasty application of the forceps might have saved this child, though doubtless at the expense of the integrity of the maternal parts.

The following case, however, is one which it seems to me possesses enough unusual features to warrant me in reporting it:

History.—Mrs. L. W., aged 36, was pregnant for the fourth time. She was short and stout of physique, and had a history of comparatively easy labors. The last menstruation occurred during the first week in March, 1904. There was nothing abnormal about the course of the pregnancy, except complaint of more than usually active movements, until about October 9, when, after a period of very active movement, all perceptible motion ceased. This was reported to me next day and for several succeeding days. I suggested the probability of fetal death and predicted a still-birth in about two weeks.

Nothing occurred, however, for two months, or until December 12, though it was thought no further enlargement took place after the cessation of movement. Owing to her corpulency and to the absence of any measurements this is only stated as her impression.

Pains were felt in the forenoon of December 12, and I was called at 2 p. m. On examination I found full dilatation had taken place with the os retracted above a bulging amniotic sac.

Believing the fetus dead, I endeavored to preserve the membranes unbroken as long as possible, and within an hour had the satisfaction of seeing the unbroken sac protruding through the vulvar opening, and with one strong expulsive effort the entire contents of the uterus was expelled in one mass—the sac unbroken and the placenta closely adherent, through the membranes, to the buttocks of a female child, of about five pounds weight. The uterine surface of the placenta was smooth and complete, and no hemorrhage or other untoward event disturbed the normal puerperium. The unbroken amniotic sac was taken to my office and shown to several physicians, after which it was opened and the accidental cause of fetal death shown to be strangulation of the cord, which was looped around both legs—four times around the left, with an overlap, and once around the right, with the last loop only a few inches from the placenta. The loops were so tightly drawn that grooves reduced the size of the legs at that point to the size of the bones and the skin covering them.

The features of this case which seemed to me extraordinary, and unlike anything in my past experience, or of which I had seen a report, were the fact that the dead fetus should be carried two months before expulsion, and that delivery should occur at so late a period as the end of the seventh month without rupture of the membranes, and more especially after carrying its contents to the full term of pregnancy. The descent of the child and the separation of the placenta must have been coincident, and yet uterine contraction followed so closely as to prevent any postpartum hemorrhage. There was no possibility of delivery occurring without the placenta being included except by rupture of the umbilical cord.

It is, of course, conceivable that the death of the fetus did not take place at the time of cessation of perceptible motion, and this opinion is supported by the fact that maceration apparently was not greater than is seen after two or three weeks. If so, a low degree of vitality may have been maintained for a part of the period between that time and final delivery, but not sufficient to produce any appreciable growth or development.

Complete intrauterine amputations have been reported, but they are generally attributed to amniotic bands rather than to looping of the cord, and it is doubtful whether a sufficient compression could have been made by these loops completely to amputate without first cutting off the circulation and stopping growth. This, doubtless, is the logic of the argument in favor of amniotic bands as the cause of these amputations.

It must be apparent that so complicated a looping about the extremities as shown in this case could only have been brought about by instinctive efforts to disentangle them. Nature, it would thus seem, implants even in the unborn creature the impulse to struggle to maintain its existence, and although in this case the efforts resulted disastrously, it is quite conceivable that they might have resulted differently, and freed the legs from their entanglement. At any rate the effort put forth was not much less intelligent and well-directed than the similar efforts put forth in the struggles of full grown domestic animals to free themselves from the coils of a tethering rope.

CHRONIC ACETANILID POISONING.

REPORT OF TWO ADDITIONAL CASES.*

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PHILADELPHIA.

Chronic acetanilid poisoning is probably very much more frequent than the medical profession appreciates, for the reason that the symptoms may be comparatively inconspicuous. The drug in its pure form or in various proprietary combinations is so easily obtained that its indiscriminate use has naturally resulted. A very striking case came under my observation three years ago and was reported by myself and Dr. C. Y. White; since that time two additional cases have been under my care: one, a private patient, was sent to me by a medical friend on account of obscure symptoms, which proved to be the result of chronic acetanilid poisoning; the other, a hospital patient with rather more marked symptoms, was referred to me on account of other conditions.

CASE 1.—Mr. W. C. H., aged 38, a merchant, consulted me in July, 1902, on account of increasing weakness, nervousness and slight shortness of breath. There were occasional palpitations of the heart and frequently a sense of throbbing in the neck. He had noticed a blue color of the lips and finger nails. For several years he had suffered from facial neuralgia and later from severe headaches. With these exceptions he had always been in good health.

Examination.—The patient is a strongly built, well-nourished man. The face, lips and finger nails were deeply cyanosed, but the surface was not specially cold. There was marked pulsation of the vessels of the neck; pulse rate 85, and on slight exertion reached 105 or 110.

Physical examination: The heart was found to be enlarged to the left and to the right, the left border extending beyond the midclavicular line and the right border a little beyond the right edge of the sternum. The heart action was irregular and the apex impulse rather diffuse. On auscultation the sounds were found to be somewhat indistinct and vibrating in quality, but there was no murmur. Lungs were negative.

Abdominal organs were apparently normal. The spleen was not palpable.

The station was good, the knee jerks and other reflexes normal. The eyes were a little prominent, but otherwise normal. There was a slight tremor of the hands. No enlargement of the thyroid gland.

Urine: The urine on the patient's first visit was found very dark and showed a considerable amount of indican, but was otherwise negative. Subsequently repeated examinations showed no abnormalities in color or in other appearances.

Blood: Repeated examinations of the blood were made, but unfortunately the records have been mislaid. A constant result of these examinations was the discovery of marked polycythemia, the number of red corpuscles being 6,000,000 or greater. There was no excess of leucocytes. Histologic examinations showed no abnormalities in the erythrocytes except an apparent enlargement. Nucleated red cells were never found, and basic granulations and polychromatophilia were absent.

History.—Later I obtained the information that the patient had for some time taken a proprietary remedy known as cephalgin on account of his facial neuralgia and headaches. The amount could not be determined, as he carried it about and took doses at irregular intervals and without any care to avoid excess. I learned that the blueness of the skin was of about a year's duration, which agreed quite accurately with the time during which he had been taking the remedy mentioned. It was difficult to obtain an accurate history from the patient, as he either could not recall the taking of the drug, or wished to conceal the fact from me. From his wife, however, I learned that he had taken a great deal of the preparation, that he had grown steadily more nervous and irritable, that he slept almost constantly from the time of his return from business to the next morning, and that he was quite altered in his general character and disposition.

Treatment.—The patient returned at intervals from July, 1902, until January, 1903. At first we had reason to believe that he continued to take some of the antineuralgic remedy, though he denied it to us. Subsequently, under tonic treatment, together with the administration of iron, arsenic and cardiac stimulants, his condition improved and by the end of 1902 he was practically well, and has so remained up to the present time.

Remarks.—Recently I saw him on the occasion of the illness of another member of his family, and he told me that he thought he had taken much more of the cephalgin than he had told me in the beginning, and expressed himself as quite certain that his condition was directly and entirely due to the drug taken.

CASE 2.—Miss M. E., aged 27, was admitted to the University Hospital, June 30, 1903, with the following history:

History.—The patient had had the usual diseases of childhood, but subsequently was in excellent health until eight or nine years ago, when she began to suffer from sick headaches. The attacks grew more and more frequent up to four or five years ago, when she began to use "tablets" to relieve the pain, and continued them steadily up to March, 1903, when she discontinued their use. Her stomach had become increasingly irritable, and about nine months ago she noted a change in the color of her skin. At first this was of a grayish or light purplish hue. Later it became a deeper blue. During five or six weeks before admission she had also suffered from dyspnea and palpitation of the heart. This discoloration of the skin improved somewhat after discontinuance of the tablets.

Examination.—Temperature normal; pulse and respiration a little rapid. The patient complained of disturbance of the stomach and of some headache. The skin of the face was of a light steel blue color; at times it had a dusky hue; at other times a clear blue. The finger nails and lips were more deeply cyanosed. The surface temperature felt normal.

Physical Examination: There was found slight enlargement of the heart, mainly to the left. The first sound at the apex was distinctly murmurish; the second pulmonic sound was slightly exaggerated. The lungs, abdominal organs and nervous system were practically normal.

Blood: R.B.C., 3,460,000; W.B.C., 6,960; hemoglobin, 72 per cent. (Accurate determination of the hemoglobin was almost impossible on account of the peculiar dark discoloration of the blood.) Histologic examination showed no abnormalities in the character of the blood corpuscles.

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* From the William Pepper Laboratory of Clinical Medicine; Phoebe A. Hearst Foundation.

Urine: Color dark brown, distinctly smoky, reaction acid, specific gravity, 1038; no albumin, no sugar, no bile. Microscopic examination showed some leucocytes and a few red blood corpuscles with calcium oxalate crystals and scattered epithelial cells.

The patient improved gradually, and was discharged from the hospital on August 7, 1903.

Subsequent History.—April 19, 1904: The patient was re-admitted, giving the following history:

For three months after her discharge she was in excellent health, but about Dec. 1, 1903, the headaches recurred and soon became severe. She now presents a peculiar pallor of the skin, together with some cyanosis. There is extreme prostration of strength.

Physical Examination.—The area of cardiac dullness is increased decidedly on both sides, and on auscultation a well-marked systolic murmur is audible at the apex, practically replacing the first sound. The second pulmonic sound is accentuated. The spleen is much enlarged, being easily palpated two inches below the costal margin. The liver also extends below the edge of the ribs. Lungs, negative.

Blood:[1] R.B.C., 3,170,000; W.B.C., 9,680; hemoglobin, 64 per cent. Histologic examination shows moderate anisocytosis and poikilocytosis. No nuclear red cells.

Urine: Mahogany brown in color, alkaline, sp. gr. 1024; no albumin, no sugar. There was a whitish sediment. Microscopically, triple phosphate crystals with epithelial cells and leucocytes were discovered. Uro-erythrin was present in moderate amount; indican was present in excessive quantity. No reaction with Rosenbach's test. No hematin, hemoglobin, methemoglobin, hematoporphyrin, bile pigment, pathologic urobilin, nor melanin could be found. No phenol nor acetone. No color reaction with iron chlorid. The high color was probably due to purin substances derived from indican.

April 25, 1904: The patient complained of pains in the region of the heart, as well as continued facial, frontal and orbital pain. The color of the skin improved progressively from the day of her admission to the hospital.

Blood: R.B.C., 3,680,000; W.B.C., 9,200; hemoglobin, 68 per cent. Microscopic examination showed a few nucleated red cells, poikilocytosis, and variability in the staining affinity of the erythrocytes.

April 28, 1904: The patient has continued to improve. Dr. Fife reports the following results of the examination of the urine:

Amount (total for twenty-four hours), 680 c.c.; sp. gr., 1022; acid, volatile fatty acids equal 51.6 c.c. of 0.1 normal acid solution. No acetone, no phenol. Tests for blood and bile pigments negative. Heller's test for urophein positive; Harley's test for urohematin negative. No urobilin. Indican excessive in amount. Both the indoxyl sulphates and indoxyl glycuronate present to Strauss' test.

May 6, 1904: At this time, some doubt having been cast on our conclusion that acetanilid had alone caused the symptoms, and the patient having denied the taking of any acetanilid between her first and second visit to the hospital, we administered the drug in doses increasing from 20 to 45 grains daily, with the result that there was a progressive increase in cyanosis and a return of the dark color of the urine. The chemical examination, however, again showed the absence of blood pigments. The following examination was reported by Dr. Fife, May 16: Amount of urine 600 c.c. dark reddish brown color, acid reaction, color becoming brown wine-red on addition of an alkali. This had been noted at previous examinations, but was not recorded in the reports, probably due to paramidophenol, a derivative of acetanilid. Excessive amount of both indoxyl sulphate and glycuronate (Strauss). Total sulphates, 1.4212 H_2SO_4, ethereal sulphates, .3769 H_2SO_4; preformed sulphates, 1.044 H_2SO_4; total nitrogen, 9.4 grms. The indophenol reaction of paramidophenol present in ethereal extract (Jaffé method). Oxycarbamid not demonstrated. No blood pigments present. The high color is probably due to paramidophenol and possibly in part to substances derived from [illegible] indican.

Blood: Blood serum obtained by puncture of a vein with a hollow needle was distinctly colored, but on spectroscopic examination showed only the absorption bands of oxyhemoglobin. When treated with ammonium sulphid and with Stokes ferrous tartrate solution, it exhibited the band of reduced hemoglobin. Examination of the blood showed some nucleated red corpuscles, poikilocytes and irregularity in the affinity for stains.

June 10, 1903: Acetanilid was discontinued on May 24. After this time the patient steadily improved. On June 5 the following notes were recorded: The patient's condition is much improved. There is now only a dull feeling in the head and slight pains in the extremities. The dusky or ashy color of the skin has practically cleared up.

Remarks.—In attempting to determine the quantity of acetanilid which the patient had taken before her admission to the hospital, I found it difficult to reach a reliable conclusion. Her physician wrote that she had first consulted him on account of severe headaches, and that after various attempts at relief had failed, and even morphia hypodermically was unsuccessful, he gave her some three-grain tablets of acetanilid, instructing her to use them with care. As there were two physicians in the same office, she obtained the tablets from one or the other of them, so that neither knew the amount which she was receiving.

"For a period of one year she used these tablets, sometimes as many as six in one day and at times two or three days in succession; then there would be a period during which she would not use them. The taking of this drug in the dose mentioned was so irregular that it is impossible to determine the exact amount. She denied having gotten any at any drug store. During the past eight months, since her return from the hospital, she has had none of the drug nor any coal-tar product. In summing it up I should say that Miss E. took the drug for a period of two years, that she never took more than 20 grains in any one day, and there were whole weeks in which she did not take any of it. I am inclined to think that there were times when she took as high as 20 grains every day for a week."

This letter was written shortly after her second admission to the hospital, when we thought that she must have taken acetanilid in the interval between her previous discharge from the hospital and her re-admission on account of the return of cyanosis. She, however, denied this, and, as the letter indicates, her physician believes she took none. The prompt return of the cyanosis, however, when acetanilid was administered, assured me that our suspicions were correct and that she had in the interval obtained the drug elsewhere than from her physician.

These cases were of special interest from the point of view of diagnosis. The first had been regarded as an obscure vascular disorder, and even after the true cause was suspected offered some difficulties on account of the lack of morphologic changes in the blood. In some experimental work now under way, Dr. C. Y. White has found that morphologic changes are not readily producible. The blood of dogs may be rendered thick and chocolate colored without presenting any evidence of alterations in the character of the red corpuscles.

Another matter of interest in these cases was the denial by the patients of the use of the drug. In this respect they agreed entirely with the case previously under my observation. I felt convinced that the deception by the patient was not merely the result of a fear that we would discontinue the drug, but was somehow the consequence of a moral disturbance. In the first case here reported the patient afterward spoke quite frankly of his use of the drug, though at the time of the active symptoms he could not be induced to confess that he was taking it, even when it was certain that he was doing so.

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[1] Dr. C. A. Fife made the various chemical examinations of the blood and urine.

The polycythemia in the first case was of interest to me and was the occasion of the comment which I made in discussing Osler's paper on "Chronic Polycythemia, with Cyanosis, and Enlargement of the Spleen"; that some of the cases reported as instances of this unusual condition might be cases of acetanilid poisoning. In the case of the patient referred to there was polycythemia and cyanosis but no splenic enlargement. The last, however, is a frequent symptom of chronic acetanilid poisoning, and the whole picture might, therefore, be readily that of chronic polycythemia. It was not supposed by me that all cases of this condition could be so explained, and at the present writing a very pronounced case with 9,000,000 red corpuscles per c.mm., extreme cyanosis, and considerable splenic enlargement is under my care, in whom no suspicion of acetanilid poisoning can be entertained, nor is any other hemolytic agent of external origin operative in this case.

Finally, a point of interest in these cases, as well as in the previous case reported by me, was the readiness with which neuralgic symptoms were controlled after the acetanilid was withdrawn. It would seem that the continued use of the drug so lowers the patient's resistance that instead of having a normal controlling effect on the neuralgic manifestations it acts as a general depressant and that the neuralgic symptoms occur with even more frequency while it is being used than would otherwise be the case. Discontinuance of the drug and the adoption of general tonic treatment soon proved successful in the two cases here recorded.

Clinical Report

A CASE OF POTASSIUM CHLORATE POISONING.

LESTER W. DAY, M.D.

MINNEAPOLIS.

Patient.—Mr. H. W., aged 30, suffering with a slight sore throat, and not wishing to consult a physician, went to a drug store and asked the boy at the soda fountain to prescribe for him. The boy handed him a bottle containing fifty 5 grain tablets of potassium chlorate. The directions printed on the bottle were to dissolve one tablet every hour or so in the mouth until relieved. Between March 19 and April 1, the entire bottle was consumed, the last tablet being taken the afternoon of April 1. During the night of April 2, the patient began to itch and thought that the pet dog had infested him with fleas.

Examination.—I was called the afternoon of April 6, and found the following condition, and in addition a temperature of 101 F.: Over his thighs, legs, ankles, trunk, forearms and wrists there appeared slightly raised reddish macules, also innumerable petechiæ. These rapidly coalesced, the color became more brilliant and it was evident that it was due to hemorrhage. With this there was no nausea, diarrhea or headache.

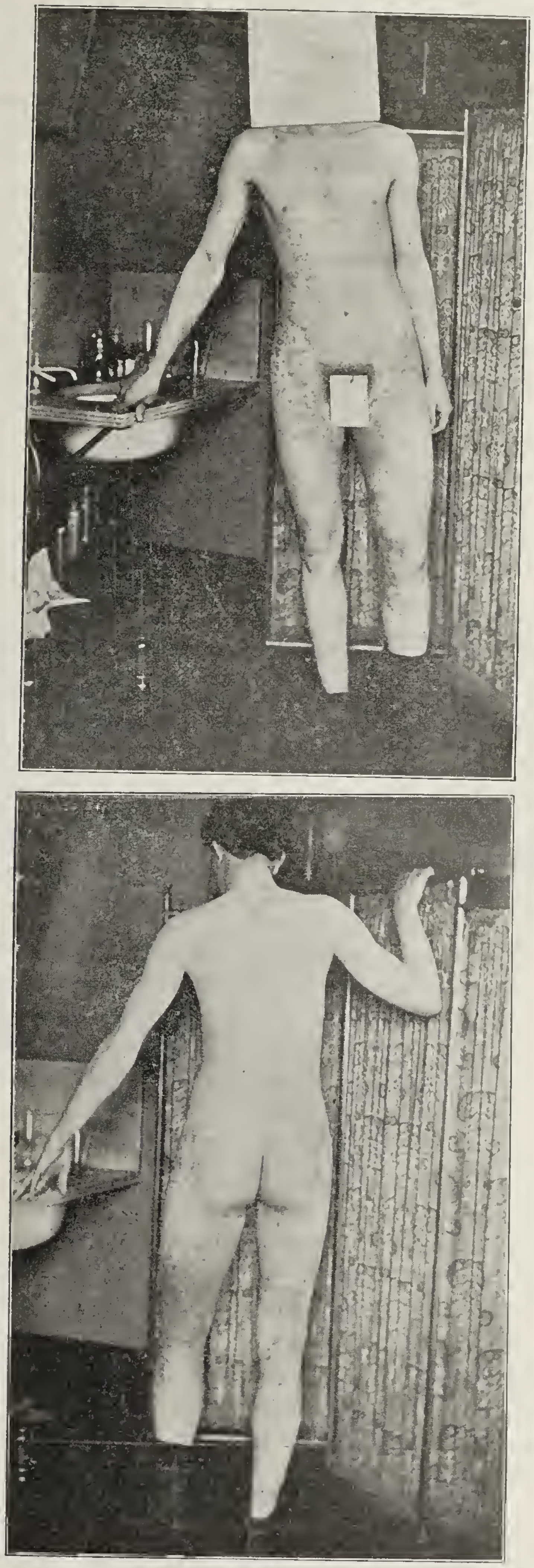
On the following day he was photographed by Dr. A. T. Mann and was seen by a number of the physicians of Minneapolis. Examination of his blood showed red cells 5,016,000. Hemoglobin could not be determined because blood was of a brighter red than any test glass (Reichert).

Urine: The specific gravity was 1,040; the urine was scanty, rather high colored, and showed a bare trace of albumin and a few hyalin and granular casts. No blood cells were found.

The patient made a slow but uneventful recovery.

In an article in Sajous' "Cyclopedia of Practical Medicine,"[1] it is stated: "Death occurs in potassium chlorate poisoning from the depression of the vital powers, due to its destructive action on the blood and the congestive obstruction of the kidneys.

"In addition to the above symptoms, the appearance of small, punctiform, hemorrhagic spots on the legs and extending to the trunk and upper extremities has been observed as late as the sixteenth day."



Distribution of potassium chlorate eruption.

I trust that the report of this case may illustrate forcibly the danger of the use of potassium chlorate.

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[1] Vol. v, page 336.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 22, 1905.

NOTE.—To admit the full proceedings of the House of Delegates, other departments are curtailed or omitted.

THE PORTLAND SESSION.

It was with a good deal of misgiving that many physicians went to Portland to attend the recent session of the American Medical Association. The fact that the meetings were to be held at a point so far from the center of population of the country, the size of the town, and the fact that the Lewis and Clark Exposition was being held, thus overcrowding the city, were sufficient to cause anxiety as to the outcome. The session, however, can be put down as being the most successful, considering all things, ever held by the Association. Seventeen hundred and fourteen registered, a number which has been exceeded only a few times at sessions held near the centers of membership.

The scientific work in nearly all the sections was excellent. It was remarked by many that the fact that fewer papers than usual were read in the larger sections made these meetings more satisfactory, for the reason that there was more time for discussions, and these, too, were of a high character. There were only two drawbacks to making the session satisfactory in every respect, namely, the transportation facilities of the railroads were taxed to their utmost, and the hotel accommodations were not sufficiently ample for such an immense gathering. Even the hotel arrangements, however, were more satisfactory than the majority expected them to be, so that there was little dissatisfaction expressed either as to accommodations or their cost.

The local profession entertained most royally; in fact, the criticism was that the entertainments were too lavish, and consequently must have been a severe tax on the Portland physicians and on those who co-operated with them.

The House of Delegates transacted more important business than has ever been transacted at any previous session of the Association, and the business was despatched much more smoothly and with greater expedition than formerly. As time goes on, a notable improvement in the conduct of business is apparent.

This session will be looked back to as being the starting point of, or at least as emphasizing, three great movements: (1) The authorization of the publication of a medical directory by the profession itself. (2) The emphatic endorsement of a movement inaugurated to suppress the nostrum evil. (3) The completion of the machinery for systematically developing a higher standard of medical education through the appointment of a salaried secretary for the Council on Medical Education, who will devote his time to the work outlined by the council a year ago.

The unanimous selection of Boston as the next place of session means that the Association is to go to the other side of the country, from the newest of the West to the oldest of the East. The last time the Association met in Boston was in 1865, forty years ago. As we believe that the profession of Boston and of Massachusetts will make every effort to have the session in that city a grand success, we may look forward with pleasurable anticipation to its being a notable one.

PRESIDENT ROOSEVELT ON THE REWARDS OF SCHOLARSHIP.

Within the last two weeks President Roosevelt has touched on subjects of direct interest to physicians in two different addresses. In his address to the Long Island physicians he emphasized the difficulties in the way of the construction of the Panama canal and the essential part that preventive medicine must play and is playing in this undertaking. His appreciative remarks of the sanitary work of General (Dr.) Leonard Wood in Cuba and the stress laid on the comparatively speaking inadequate rewards for services of such great benefit to a people make pleasant reading for medical men. President Roosevelt has a firm grasp of the rôle of medicine in the progress of civilization and he clearly recognizes the value of expert knowledge in sanitary work, a point on which many public non-medical officials of great power often appear lamentably weak and unsound.

But it was to the President's address to the alumni of Harvard University on the rewards of scholarship in general in this country that we wished to direct the attention of our readers more particularly. Here he points out with admirable clearness that if the career of the scholar remains an insignificant one in the public mind, then such a career will not be attractive to the most vigorous and gifted of our young men. He shows that there is a lack in this country of opportunities for great scholars to win great prizes such as await preeminent ability in business and in law. This, he says, should not be so, because "the average of all of us is raised by the work of the great masters;" at the same time he qualifies himself by saying that much of the work that is best for the nation as a whole must ever be, relatively, inadequately remunerated, albeit to be able to do such work is in itself the amplest reward. The slight monetary reward, however, for scholarly achievement can not but have a repellent effect on the ambitious youth who is casting about for a career. "The American scientist, the American scholar should have the chance, at least, of winning such prizes as are open to his successful brother in Germany, England or Frence, where the rewards paid for first-class scholarly achievements are as much above those paid in this country as our rewards for first-class achievements in industry and law are above those paid abroad."

Applying the President's remarks to the conditions presented by medicine in this country, we see at once that the awards in store for the teacher and investigator, particularly in the purely scientific branches—anatomy, physiology, pathology, bacteriology, pharmacology—are not such as to appear attractive to the young man of parts. Only few institutions are capable of giving the same salaries to the occupants of positions in these branches that are paid to men of corresponding rank in our first-class universities, and those salaries we know are far from being so large as to be regarded as "prizes." In 90 per cent. of our medical colleges the salaries offered are mere pittances, the equipment, time, and opportunity for good work minimal, and the positions in question are utilized largely as stepping stones to reach clinical chairs which bring more or less return from outside sources. So long as this continues to be the case the teaching and investigation in medicine in this country will suffer great harm. So long as this continues only comparatively few of our well-trained graduates will fit themselves for careers in medical teaching and medical research. Now the responsibility for this depressing state of affairs, to a large extent, rests with the medical profession itself, because it permits the establishment and continuance of so many medical schools that have no other reason for their existence than the purely selfish ambitions of small groups of men. By its neglect to attempt to provide generously for those occupied with the teaching and study of the fundamental branches and with medical work of a public nature, the medical profession in the United States has shown that so far it has not recognized properly the value of scholarship to American medical progress and to its own public standing. The remedy? Make the careers in the fundamental medical branches and in public medical positions attractive to "strong and virile youths"; secure adequate salaries and permanent tenure of office for occupants of municipal and other public positions. In no case, so far as we know, does any permanent so-called first-class position now offer a salary at all commensurate with the presumptive earning capacity of a fitting occupant as a private practitioner. Many medical schools would render the most valuable service of which they are capable by dutifully closing their doors forever. In some cases consolidation might produce institutions of considerable strength. In their relations to medical schools and institutions in general, medical men should take to heart the President's words when he well says: "No first-class science, no first-class literature or art, can ever be built up with second-class men."

THE PRESIDENT-ELECT.

Dr. William J. Mayo, Rochester, Minnesota, whose picture is here presented, was, at the recent Portland session, elected President of the American Medical Association. Dr. Mayo was born in Minnesota in 1861, and received the degrees of A.M. and M.D. from the University of Michigan. Unlike the majority of noted surgeons, whose fame has been achieved in large cities, Dr. Mayo's name is connected with a small city of 8,000 inhabitants, Rochester, Minn. Here he has built up his great reputation, refusing to accept flattering offers in larger cities and from prominent institutions. He is surgeon of the St. Mary's Hospital, which is now a well-known surgical institution, and which was originally built for his father, Dr. W. W. Mayo, by the Franciscan Sisters. As Dr. Mayo's practice grew, he associated other physicians with him to the present number of sixteen, and from time to time additions have been made to the hospital. Built on thorough study, painstaking technic and accurate anatomic knowledge, Dr. Mayo's fame has become international. A hard worker, he has mastered details so as to command the respectful attention of the foremost surgeons here and abroad until he has been recognized as one of America's greatest surgeons. The contributions to medical literature of Dr. William J. Mayo and his brother, Charles H. Mayo, who is closely associated with him, have been frequent and varied. Particular attention has been paid in their writings and public addresses to the surgery of the stomach and to the surgery of the biliary apparatus. As Dr. Rodman said in nominating Dr. Mayo (page 281), this is a deserved tribute to an able, worthy and honorable son of the West.

President-Elect William J. Mayo.

NEW STATE MEDICAL JOURNALS.

The initial issues, in July, of two new state medical journals—the *Ohio State Medical Journal* and the *Texas State Journal of Medicine*—are creditable to the medical profession in their respective states, and tributes to the labors of the publication committees. Dr. Frank Winders, chairman of the publication committee of the Ohio journal, is secretary of the Ohio State Medical Association and has been made managing editor of the Ohio journal. In size this journal is convenient and its makeup is quiet, though attractive. It is a welcome and dignified addition to the ranks of medical journalism. Announcement is made that the Ohio State Association has 3,340 members, and that only ethical advertisements will be received. This first issue presents some excellent editorials, though it is chiefly devoted to the proceedings of the late meeting of the State Association. Dr. Ira Carleton Chase is editor-in-chief of the Texas journal and he has a large and efficient staff of associate editors. The first editorial is an announcement, by the board of trustees, of the aim and scope of the publication. They state among other things that the advertising pages of the journal will be filled with only helpful and ethical advertising and that all remedial agents advertised must conform to the *Principles of Ethics* of the American Medical Association. The reading matter is valuable, well arranged and well printed. These two journals give promise of being valuable additions to medical literature.

IMPRISONMENT AT HARD LABOR AND TYPHOID FEVER.

It is certainly not in accord with the present humane methods which we use toward prisoners to place them in an environment which entails danger of disease. Assuredly, the people of the State of Michigan never intended to impose a sentence of imprisonment at hard labor and typhoid fever, yet this is exactly what was done when prisoners were sent to the penitentiary at Jackson; the insanitary conditions were such as to cause a continuous series of typhoid fever cases among the prisoners. This has now been entirely remedied. With the removal of a faulty sewer and the destruction of an insanitary wing, typhoid fever has been wholly eliminated. There has not been a case for months. The present management is certainly to be congratulated on its work in eliminating from the punishment meted out to prisoners the danger of typhoid fever, which was not imposed by the court.

THE PROFESSION OF GETTING HURT.

Pearson's for July presents the second article by Theodore Waters on "The Profession of Getting Hurt." Chiefly, this paper recounts the famous malingering cases of Jennie Freeman in 1894 and of Inga Hanson in 1904. Both were, in the main, Chicago cases, thus indicating (with the personal damage suits against the city detailed in June) the somewhat "bad eminence" achieved by Chicago in its attraction for the professional malingerers. The cases make interesting and enlightening reading, and it is an excellent thing to have such facts convincingly presented to lay readers. It is an important part of the welcome education of the public in matters medical and semi-medical that is now in progress. One or two points made by Waters are notable. "Paralysis as a fine art" has greatly developed in a decade and "prices have gone up. No self-respecting paralysis operative would now think of asking less than a small fortune for a séance." This species of grafter is costly to the community. Even when damages are not secured the cost of defense is burdensome. In the case of municipalities, taxes are thus kept unnecessarily high or needed public works are injuriously delayed. In the case of railroads and public-service corporations, this grafting contributes directly to keeping up rates and to hindering improvements in public accommodations. Widespread publicity of the methods of the malingerers will do much toward restricting their operations. The help to be given by the medical profession is clear. The renegade physician who aids the malingerer must be so ostracised and disqualified that none will dare share in these crimes. The lawyers' responsibility and task are greater, for all these cases are instigated, promoted, and fostered by "shyster" attorneys. At present the legal profession seems sadly to lack *esprit du corps;* and, so far as observation goes, appears to be doing nothing toward the long-postponed housecleaning. In this connection, *Pearson's* editorially announces that it will continue its series of articles, with the intention of making it unpleasant for "the shyster lawyer who makes his money by creating litigation." The announced program promises some valuable revelations. It is very interesting to learn that already the magazine is receiving anonymous abusive letters, evidently from those who live by blackmail and who fear publicity even as the "burned child dreads fire." May more publications join this promising crusade!

Medical News

ILLINOIS.

Infant Feeding.—The edition of the circular on infant feeding, published by the State Board of Health a month ago, is entirely exhausted. A new edition now in press will be issued about July 25. It was supposed that the first edition would be sufficient for the summer, but the great demand made by the physicians of the state speedily exhausted it. Requests for this circular have been received from every state in the union. The Health Department of Indianapolis has requested the privilege of purchasing several thousand copies for distribution in that city.

Red Cross Society Formed.—An Illinois branch of the American Red Cross Society was organized July 12 with the following officers: President, Governor Deneen; vice-presidents, Archbishop Quigley, Lambert Tree, Rev. F. W. Gunsaulus and Rabbi Hirsch, all of Chicago, J. O. Humphrey, Springfield; President E. J. James of the University of Illinois; treasurer, Orson Smith, Chicago; secretary, Honore Palmer, Chicago; executive committee, Dr. Frank Billings, chairman; Gen. Lloyd Wheaton, U. S. A.; Dr. S. S. McArthur, J. A. Spoor, Frank Hamlin, Gen. Martin B. Hardin, Robert A. Ross, Walter C. Newberry, Mrs. Bryan Lathrop, Mrs. Medill McCormick, Mrs. Henry Davis, Jr., of Springfield.

Chicago.

Personal.—Dr. Arthur R. Reynolds, former commissioner of health of Chicago, has accepted the position of medical director of the French Lick Springs Hotel Company, French Lick Springs, Ind.

Hydrophobia.—A death from hydrophobia is reported to have occurred at the Presbyterian Hospital on July 8. The victim was bitten by a pet dog at his home in Russell, Ky., and did not receive medical attention till too late.

Mortality Statistics of Chicago.—For the week ending July 15 the total number of deaths from all causes was 447; of these 248 were females and 199 males. There were 107 deaths of children under one year. The largest number of deaths from any one cause was 72, from acute intestinal diseases. There were 49 deaths from tuberculosis, 32 from Bright's disease, 10 from apoplexy, 13 from bronchitis, 21 from cancer, 7 from convulsions, 7 from diphtheria, 30 from heart diseases, 8 from measles, 18 from nervous diseases, 26 from pneumonia, 4 from scarlet fever, 6 from typhoid fever, 4 from tetanus, 3 from whooping cough, 11 suicides, 30 from violence, and 96 from various other causes.

INDIANA.

June Morbidity and Mortality.—The monthly bulletin of the State Board of Health says: "There was less sickness than in June last year, but more deaths. The increase in deaths was almost entirely among persons of 65 years and over. Rheumatism was reported as the most prevalent malady and diarrheal diseases the next most prevalent. Pneumonia was much less prevalent than in May and less also than in June, 1904. The cancer patients present a greater mortality than in the same months last year, the figures being 120 deaths in June this year and only 71 last June. The total number of deaths was 2,482, an annual rate of 11.4. In June last year 2,203 deaths; rate 10.1. The city death rate was 13.5, the county 10.1. The city consumption death rate was 172.1 per 100,000, and the county 132.8. The violence deaths numbered 160, and 93 occurred in the country. Smallpox shows a marked increase over June, 1904, as there were 114 cases with 5 deaths, against 75 cases and 2 deaths. The most extensive smallpox epidemics: In Bartholomew County, 12 cases; Brown, 16; Madison, 13; St. Joseph, 21; Vanderburgh, 32. The 5 deaths from smallpox occurred, 1 in Noble County and 4 in South Bend. Consumption caused 354 deaths, 320 being of the pulmonary form. Of these 79 were mothers in the prime age period, 18 to 40, and they left 168 orphans under 12 years of age. Twenty-two were fathers in the same age period, and they left 45 orphans under 12. The disease invaded 251 homes with death. The cost to the state at the accepted legal value of a human life unnecessarily lost, namely, $5,000, was $1,770,000."

KENTUCKY.

Medical Society Elects Officers.—The Owensboro Medical Society met June 2 and elected the following officers for the ensuing year: President, Dr. C. H. Todd (re-elected); vice-president, Dr. E. B. McCormick; secretary, Dr. R. E. Griffin (re-elected).

Medical Colleges.—The thirty-first annual commencement exercises of the Hospital College of Medicine, Louisville, were held July 3. There were ninety-five graduates. The doctorate address was delivered by Dr. T. H. Stucky. D. M. Godby was class valedictorian.——The annual commencement exercises of Kentucky University College of Medicine were held June 30. Fifty-nine graduates received diplomas.

MARYLAND.

Report on Insane Hospital.—A report of the superintendent of Springfield Hospital for the Insane No. 2 shows that there were on June 1, 628 patients in the institution, 374 males and 254 females; on July 1 the number was 640.

Baltimore.

Health of Baltimore.—There were 274 deaths last week, representing a rate per 1,000 for whites of 21.74, for colored of 45.36.

Personal.—Dr. Thomas H. Buckler sailed for Europe July 15. ——Dr. Harry Friedenwald, recently elected president of the American Federation of Zionists, has sailed for Europe to attend as delegate the seventh Zionist congress, which meets in Basle, Switzerland, July 27.——Drs. Thomas R. Brown and Caspar Gilchrist sailed for Europe, July 18 and 22.——Dr. Hubert Richardson has been elected clinical lecturer on neurology and psychiatry, and lecturer on physiologic chemistry at the University of Maryland School of Medicine.

MICHIGAN.

Personal.—Dr. A. P. Ohlmacher, formerly of Ohio, has been appointed director of the biologic laboratories of Frederick Stearns Co., Detroit, and has entered on the active duties of the position.

University Commencement.—At the annual commencement exercises of the University of Michigan the degree of LL.D. was conferred on Theodore A. McGraw, M.D., of Detroit. The graduating class in the department of medicine and surgery numbered sixty-one. The commencement oration was given by President H. I. Pritchett of the Massachusetts Institute of Technology, who also received the degree of LL.D. The other recipients of this degree were Prof. W. W. Campbell of the Lick Observatory and United States Senator Warner of Missouri.

Mortality of Michigan During June, 1905.—The total number of deaths reported in June was 2,394, a decrease of 306 from May. The death rate was 11.4 per 1,000 population, as compared with 12.5 for the preceding month. By ages there were 396 deaths of infants under one year, 121 deaths of children aged 1 to 4 years, and 700 deaths of elderly persons aged 65 years and over. Important causes of death were as follows: Tuberculosis of the lungs, 176; other forms of tuberculosis, 26; typhoid fever, 28; diphtheria and croup, 31; scarlet fever, 10; measles, 11; whooping cough, 7; pneumonia, 98; diarrheal diseases, under 2 years, 72; cancer, 129; accidents and violence, 228, of which number 61 were deaths from drowning. There were 14 deaths from smallpox, 1 in Hill Township, Ogemaw County, and 13 in Grand Rapids. There were 4 deaths reported from tetanus 1 in Hillsdale City, 1 in Milan Township, Monroe County, and 2 in Grand Rapids. The number may be noted for comparison with the number of deaths returned from this cause for the following month as the result of Fourth of July accidents.

NEW JERSEY.

Health of Camden.—According to the monthly report of Dr. J. F. Leavitt to the Board of Health there was one case of typhoid fever reported from June 15 to July 15, or one case in a population of 85,000. This is attributed to the artesian water supply which the city now enjoys. In 1897, when the polluted water of the Delaware River was used, there were 104 cases of typhoid fever. There has been a perceptible falling off in typhoid fever ever since the installation of the artesian system. Other contagious diseases reported during the month were: Scarlet fever, 15; diphtheria, 14; consumption, 2; total, 32.

NEW YORK.

Epidemic in Camp.—An epidemic of a contagious disease, the nature of which the physicians in charge refuse to disclose, has broken out in the Sixth Battery, which is in camp in Endicott, near Binghamton. Twenty-five men are reported as affected by the disease.

Smallpox in Cohoes.—Several cases of smallpox are reported in Cohoes. The first case was discovered early in July. The isolation hospital in the town was burned down two years ago and the authorities are badly handicapped in caring for the smallpox patients at present.

Ontario County Medical Society Election.—At the annual meeting of this society, held July 12, the following officers were elected for the ensuing year: President, Dr. W. Clapper, Victor; vice-president, Dr. A. Eiseline, Shortsville; secretary and treasurer, Dr. M. R. Carson, Canandaigua; censors, Drs. C. P. W. Merritt, Clifton Springs, and G. W. Sargent, Seneca Castle.

President Roosevelt Addresses Physicians.—The Associated Physicians of Long Island, who met at Oyster Bay, July 12, listened to an address by President Roosevelt on the dignity and responsibility of the profession. He paid a special tribute to the work of Gen. Leonard Wood in Cuba. After the President had retired he and General Wood were elected honorary members of the association.

Dr. Pryor's Successor.—Dr. Melvin Page Burnham of New York has been appointed acting superintendent of the New York State Hospital for the Treatment of Incipient Pulmonary Tuberculosis at Ray Brook in place of Dr. John H. Pryor, who has resigned. Dr. Burnham has had a large experience in the sanitarium treatment of tuberculosis, and for the past three years has been the resident physician of Seton Hospital, at Spuyten Duyvil, a tuberculosis sanatorium of 300 beds.

New York City.

New Pavilions for Bellevue.—Bids have been opened for two pavilions of the new Bellevue and the board of estimate has set aside $800,000 for beginning the work.

Personal.—Dr. E. V. Hubbard sailed for Queenstown on the *Majestic* on July 12. Dr. E. Guernsey Rankin sailed for Europe on *La Savoie*, July 12.——Dr. Arthur B. Duel sailed for Queenstown on the *Lucania*, July 15.

For French Hospital.—The annual picnic of the French Benevolent Society was held on July 14. The entire proceeds will be used to defray the expenses of the French Hospital in Thirty-fourth Street, which is in the process of construction.

To Enlarge Roosevelt Hospital.—Plans have been filed with the building department for the enlargement of Roosevelt Hospital by the addition of an annex between the administration building and the private patients' building. The improvement is to cost $15,000.

Heat Fatalities.—The extreme hot weather has been the direct cause of 55 deaths and over 200 prostrations in New York and Brooklyn during the week ending July 15. The floating hospital of St. John's Guild carried 1,024 patients on July 10, and 1,099 on July 11.

Twenty-five Quarantined.—The steamship *Alliance*, arrived from Colon, had on board 25 passengers with high temperatures, who were detained at quarantine to await developments. None has shown any symptoms of yellow fever; in one case the temperature is attributed to malarial fever.

Water Famine Threatened.—There is a serious shortage of water and a threatened famine in several of the towns on Staten Island. The shortage is due to increased consumption of water at South and Midland beaches. Brooklyn is also threatened with a water famine, there being less than two weeks' supply available.

New Hospital—A new emergency hospital, St. Grgeory's, was opened June 30 at 93 Gold Street, Brooklyn. It is designed to relieve the overcrowded condition of the House of Relief in Gold Street. Its staff is made up of Superintendent Flater, Assistant Superintendent Dunca, three ambulance surgeons, two visiting surgeons and four nurses.

New Brooklyn Hospital.—The commissioner of charities has purchased a piece of property in Dumont Street as the site for a hospital which is to take the place of the Bradford Street Hospital. The building will have a frontage of 200 feet and a depth of 280 feet. The small structure at first erected will cost $60,000 and wings will be added to this later.

Frank Canned Goods.—The Bureau of Chemistry of the Department of Agriculture recently condemned a large quantity of canned goods imported by grocers in this city. It was ordered that these goods be either re-exported or destroyed. The importers had the order modified and these goods will be sold provided they are labeled in such a way as to show the defect.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending July 8, 447 cases of measles, with 16 deaths; 395 cases of tuberculosis, with 167 deaths; 261 cases of diphtheria and croup, with 20 deaths; 59 cases of typhoid fever, with 13 deaths; 27 cases of cerebrospinal meningitis, with 29 deaths; 74 cases of scarlet fever, and 24 cases of varicella.

New Superintendent for Bellevue.—The selection of a general medical superintendent of Bellevue and the allied hospitals which has been in question for more than a year, was decided on July 13, when Dr. Samuel T. Armstrong formally accepted the position. Dr. Armstrong was selected because he is considered peculiarly fitted for the duties involved, as he has had a wide experience in the army and navy as well as in the hospitals of this city.

City Consumptive Hospital.—The board of health has received an appropriation of $250,000 for the establishment of a sanitarium at Mount Hope, Orange County. The department has recommended the purchase of 1,200 acres of land. It is the intention of Dr. Darlington to use the buildings already built while awaiting the construction of the hospital. This will allow for the care of 400 consumptives at once. There are in New York City about 25,000 consumptives and the health board will endeavor to inform them of the steps taken for their care.

PENNSYLVANIA.

Personal.—Dr. Frederic Corss and wife of Kingston, Pa., have started on a tour through the Yellowstone National Park and Alaska.——Dr. Edward J. Hadfield of Phoenixville was held by the magistrate's court in $1,000 bail for his appearance in the next term of county court, charged with performing a criminal operation.

"Itinerant" Physicians Arrested.—Dr. W. S. Madden, traveling with the Wittman Medical Company, was arrested by the Medical Association of Monessen, charged with being an itinerant physician without the proper credentials. He was held for trial under the act of 1877 and its supplement of 1897, which require a daily license costing $10 a day. "Doctor" Wittman, who sells medicine and does wonderful cures, was arrested several days later under the act of 1877 and held over for trial; he deposited a certified check for $400. He does not claim to be a physician, but his name appears on the labels of the medicine sold as doctor. Dr. Madden is registered under the act of 1871, but is still liable unless he complies with the act of 1897.

Philadelphia.

June's Vital Statistics.—During the month of June 1,735 deaths were reported and 2,483 births. The births, therefore, exceeded the deaths by 648.

Milk Inspection for June.—The number of inspections made were 6,063, and 141,957 quarts were inspected. Of this number 2,442 quarts were condemned 2,617 chemical examinations were made, and 865 microscopic examinations.

Banquet to Dr. Staller.—Dr. Max Staller was tendered a banquet at Mosebach's, July 7, by his professional friends. Dr. Staller is chief surgeon of Mount Sinai Hospital. About fifty guests attended the banquet. Dr. Staller leaves for Vienna, to be absent for some months, in the near future.

Dr. Patterson Gets Post.—Dr. Ross D. Patterson, assistant in the department of the insane in the Philadelphia Hospital was appointed assistant chief resident physician in the Philadelphia General Hospital, July 11. He succeeds Dr. Frederick G. Johnson. Dr. Patterson graduated from the Jefferson Medical College in 1904.

Physician Against Druggist.—Dr. Harry L. Sickel obtained a capias for the arrest of J. R. Tilton, a druggist, in a suit for $10,000 damages for alleged slander. Judge von Moschzisker fixed the defendant's bail at $1,500. The complainant declares that Tilton attacked his ability as a physician to patients who visited the druggist's store.

Bacteriologic Laboratory Report.—The report of the bacteriologic laboratory for the month of June shows that 2,139 specimens were examined for diphtheria bacilli; 473 examinations were made of typhoid fever blood; 928 examinations were made of milk, and 134 of sputum. The laboratory supplied 960 bottles of antitoxin, and 128 chemical analyses were made.

Medical Inspection for June.—The number of inspections made by the medical inspectors, excluding schools, during the month of June aggregated 2,749. They ordered 498 fumigations and examined 46 patients for special diagnosis. In the different schools throughout the city 6,363 inspections were made, and out of this number 384 children were excluded from school. They took 192 cultures, made 32 injections of antitoxin and performed 343 vaccinations.

Personal.—Dr. Alfred Heineberg was appointed assistant professor of materia medica in the Philadelphia College of Pharmacy, July 1.——Dr. Duffield Robinson and wife sailed for Europe, July 12. They will be absent until the middle of September.——Dr. Joseph H. Lopez was elected medical director of the Charity Hospital.——The following physicians sailed for Europe on the steamship *Merion*, July 8: Drs. Ella B. Everitt, A. A. Stevenson, W. M. Ziegler and W. C. Stillwell.

Sanitarium Must Move.—In an opinion file in common pleas court July 11 Judge Beitler decided that the restriction in conveyances of the ground prohibits the maintenance of the open-air tuberculosis sanitarium at Mount Airy. Neighbors object to the hospital, which consists of several tents. They complained that they were annoyed by the coughing of the patients and that the establishment was a menace to the health of the community. The judge visited the sanitarium and was convinced that the superintendent was doing everything to make the sanitarium as little annoyance as possible, but he said that he found the institution did affect the comfort of the neighborhood. In reaching his conclusion he took into consideration the fact that there is at least a doubt whether the place is likely to injuriously affect those residing near by.

Coroner Condemns Headache Powders.—The indiscriminate and excessive use of orangeine and similar headache powders, containing acetanilid and kindred drugs, was condemned by Coroner Dugan in a lengthy statement before the court at an inquest held in the case of the death of a young married woman. The autopsy, by Dr. T. J. Morton, coroner's physician, indicated that death was due to the use of the headache powders. Chemical analysis of orangeine powders showed that the principal ingredient contained was acetanilid. The coroner said: "One of the chief dangers is that these powders are advertised as being harmless, thereby leading persons afflicted to take them freely." He further said that the same remedy prescribed by a physician would be taken only at regular intervals, thus removing one of the very objectionable features of this class of drugs.

House-to-House Inspection.—Dr. Edward Martin, director of the Department of Health, has issued orders for a house-to-house inspection of the city. This inspection is made principally to give succor to the infants, and to give advice regarding treatment of the little ones during the heated term. A full record of the vaccination of all persons in each district is to be made. The inspectors have been instructed in case of finding any infant requiring medical attention, to advise the family to call their regular physician. In case the family is too poor to secure the services of a physician, the ward physician will be directed to attend and he will prescribe and authorize free medicine. The inspectors were further instructed to examine the arms of all who have not undergone vaccination for five years, and to urge on them the necessity of having it again performed.

Health Report.—The deaths from all causes during the week aggregated 548, as compared with 483 last week, and 466 in the corresponding week of last year. The total number of deaths of infants under 2 years during the week reached 120, as compared with 94 last week, and 58 the preceding week. The specific ailment was enteritis. In addition there were 14 deaths due to this disease among children over 2 years of age. In all there were 169 deaths of infancy. This high mortality among infants is attributed to the extremely hot weather. The principal causes of death were: Typhoid fever, 6; erysipelas, 4; pulmonary tuberculosis, 52; cancer, 26; apoplexy, 28; heart disease, 33; acute respiratory disease, 23; enteritis (under 2 years), 120; enteritis (over 2 years), 14; Bright's disease, 36. There were 169 cases of contagious disease reported with 14 deaths, as compared with 157 cases and 15 deaths reported during the previous week.

TENNESSEE.

University of Nashville Commencement Exercises.—The annual commencement exercises of the spring class of the University of Nashville were held June 30. Nineteen graduates received diplomas.

GENERAL.

Queen's Hospital, Honolulu.—The Pauahi wing in Queen's Hospital was formally opened June 23.

Ecuador Bars Vessels from Panama.—According to a recent cable report, the health authorities of Ecuador have declared Panama to be infected with bubonic plague and have declared a quarantine against vessels from Panama ports.

Baltimore & Ohio Association of Railway Surgeons.—The annual meeting of this association was held at Pittsburg, Pa., June 28-30. The following officers were elected for the ensuing year: President, Dr. J. F. Thompson, Garrett, Ind.; vice-presidents, Drs. E. S. Montgomery, Pittsburg, Pa., and John E. Russell, Mount Vernon, Ohio; secretary and treasurer, Dr. J. H. Kennedy, Aberdeen, Md.; assistant secretary and treasurer, Dr. S. A. Richardson, Philadelphia. The next annual meeting will be held in Philadelphia.

Health Report of the Philippines for March.—The report of the Board of Health for the Philippine Islands and the city of Manila shows that during March 583 births were registered, of which 304 were males and 279 females; 510 were legitimate and 73 illegitimate. The birth rate per 1,000 is 31.23. During the month 617 deaths were reported, of which 54 were transients and 563 residents; 175 less than in March, 1904. Ten cases of plague were reported, with 9 deaths. There were 4 cases of smallpox, with no deaths.

FOREIGN.

The Floating Sanatorium.—The "sanatorium trip" planned for the *Fürst Bismarck*, one of the vessels of the Hamburg-American line, has been abandoned for lack of patronage.

Plague in India.—According to the *Lancet*, the mortality from plague continues to decrease. A month ago the deaths from this cause were over 50,000 a week; now they are only about 15,000.

Smallpox in Chili.—According to a cable report, the smallpox epidemic in Valparaiso is growing daily. Deaths some times exceed 50 a day. It is reported that there are at least 1,200 smallpox patients in the city.

American Hospital in Turkey.—An American hospital and training school for nurses is to be established in Constantinople. Dr. Thomas S. Carrington is to have charge of the hospital. He will take with him to Turkey several American trained nurses.

International Congress of Hydrology and Physicotherapy.—The seventh International Congress for Hydrology, Climatology, Geology and Physicotherapy is announced to open at Venice, October 10. The secretary is Dr. F. Oreffice, S. Stefano 2803, Venice, Italy.

Physicians' House.—The local medical society of Brussels, Belgium, has rented a building to be known as the "Physicians' House"—*maison des médecins*—for a general club house and gathering place for physicians, with headquarters for the local and district medical societies, hall for lectures, rooms for libraries and archives, etc.

Seventieth Birthday of Professor Olshausen.—Our Berlin exchanges pay homage this week to the Berlin gynecologist and obstetrician, R. Olshausen, chief of the Berlin University Gynecologic Clinic, editor of the *Zeitft. f. Geb. und Gynäkologie* since 1887, and author of numerous works on his specialty. His seventieth birthday arrived July 3, but he declined the ovation his friends had planned in his honor.

Second National Congress of Russian Psychiatrists.—Russia held a national congress for psychiatry about the same year as the first ones were held in other countries. Eighteen years have passed and Sikorski is now organizing the second congress, Kiev, September 4, the place and date of meeting. Besides psychiatrists and neurologists, jurists, teachers, architects and scientists generally are invited to take part in the congress as members of consulting boards.

Eleventh German Congress of Gynecology.—This congress met at Kiel June 14 to 17, with Werth in the chair. His address was on the literary overproduction in gynecology, as well as in other branches of medicine, and on means to combat effectually this excessive literary output. It has grown to its present proportions, he remarked, by the way in which scientific work has been facilitated by modern technical devices, and by the unprecedented development of the medical press and the exaggerated importance attributed to literary productions by physicians themselves and by the public. It is actually impossible to-day to keep an oversight over the entire field of current literature, notwithstanding the well-organized abstract departments of the better journals and of the Centralblatts. He proposes to reform by restricting communications to what is actually new, by condensing and using a terse, clean-cut style. "Instrumental Dilatation of the Uterus" was the first subject discussed, and both Leopold and Bumm, who delivered the addresses, spoke in favor of mechanical dilatation for certain strictly indicated cases. The latter thinks that neither the Bossi instrument nor vaginal hysterotomy can be recommended to the general practitioner. Eclampsia and placenta prævia he accepts as indications for vaginal hysterotomy. Liepmann confirmed his previous assertions in regard to the special toxicity of the eclampsia placenta, as mentioned in these columns recently, page 1888 of the last volume. Schatz stated that in animals the father determines the duration of gestation when breeds are crossed. He remarked that husband and wife grow to look more and more alike with time, the father perhaps influencing the maternal organism through the fetal in the course of various pregnancies. Pfannenstiel and Hofmeier presented the second theme: "The Remote Results of Ovariotomy." The disturbances of the premature menopause after bilateral ovariotomy they do not regard as important except in women previously inclined to be nervous. The remote results of ovariotomy depend on the nature of the tumor. "Retention tumors," a dermoid cyst, fibroma and pseudo-mucinous cystadenoma are not malignant, and the removal of the infected ovary proves sufficient for a permanent cure. In case of carcinoma, it is still an open question whether it is necessary to remove the apparently sound mate in case of cancerous degeneration of an ovarian tumor. They include carcinoma with the above four classes in the group of "non-dubious tumors," classing as "anatomically dubious" the papillary serous cystadenoma, pseudo-myxoma, sarcoma, endothelioma, perithelioma, myxoma and teratoma. If both ovaries are affected, the uterus and broad ligaments had better be removed with them. The best results are obtained in the first two kinds, even when bilateral, but permanent cures have been realized also with unilateral sarcoma and teratoma, leaving the apparently sound ovary. Queissner recommends treating the apparently sound mate, when it is to be left, by decapsulation, similar to Edebohls' operation on the kidney. His experience with it in three cases has been very promising. Frankenstein of Kiel stated that ischuria was observed in only 9.7 per cent. of 875 gynecologic cases in which the bladder had been filled with 9 per cent. saline solution after the operation, under visual control through the abdomen. Ischuria developed in 55 per cent. of 91 cases in which this precaution was not taken. By this distension of the bladder, the pelvic viscera are pushed more into their normal positions. Hoehne of Kiel reported that in 236 cases of pseudo-mucinous cystoma, 9 of the patients succumbed later to carcinoma in the small pelvis or elsewhere. They were under observation for from two to twenty-eight years. The next congress will be held at Dresden in 1907, with Leopold as president. "Operations That Enlarge the Pelvis" will be the first subject to be discussed, followed by "Asepsis in Gynecologic Operations." The *Centralblatt f. Gynäkologie* has the detailed report of the congress in Nos. 26 and 27, but the last *Deutsche med. Wochft.* and the *Münchener med. Wochft.* have each a summary of the transactions.

Correspondence

The Dangers of Acetanilid.

Dodge City, Kan., July 14, 1905.

To the Editor:—I was walking along the street some months ago and overtook my venerable friend, the Methodist minister, who said "Doctor, I'm glad to see you. What is antikamnia?" I told him that it is a mixture of uncertain composition, used with greater or less success for the relief of pain; that its principal constituent is acetanilid, a valuable remedy under certain conditions, but dangerous when used by the laity.

The old gentleman took from his vest pocket a little square box containing twenty-five tablets of about five grains each. The box was labeled "antikamnia," and the legend declared that the remedy would cure a number of unpleasant and more or less dangerous conditions to which humanity is subject, but there was not a word to indicate the size of the dose or the frequency with which it might be repeated. The minister told me he had received it through the mails with the compliments of the Antikamnia Company, and without other instructions or information than was printed on the box.

My friend resented the "compliments" of the Antikamnia Company, presented in this manner, and my heart warmed to him; for are there not many of his kind who, not content with prescribing biblical relief for moral sickness, undertake to extend their practice so far at least as to prescribe for physical ailments some of the quack remedies advertised in church papers? Therefore, when my friend made it plain that he was insulted by the "compliments" aforesaid, my heart warmed to him.

I told him that in every state there is a law restricting the practice of medicine to those who have made long and careful preparation for discharging the heavy responsibilities involved in such practice; and that there is a like law governing the compounding of prescriptions and the dispensing of drugs; but that any one is permitted to send anywhere in the United States dangerous drugs, by simply paying the postage, an example of which privilege was before us.

"Doctor," said my friend, "this is simply infamous. I wonder why the postal authorities permit it."

And I wondered, and am wondering yet.

W. H. Graves.

Chronic Purpura Hemorrhagica.

Chicago, July 14, 1905.

To the Editor:—As a sequel to The Journal's editorial, June 10, on "Chronic Purpura Hemorrhagica," a case purporting to be one of that disease was reported in The Journal, July 8, by Dr. H. H. Loveland. Considerable confusion naturally exists in the classification of a group of diseases about which we know so little as those of the hemorrhagic group. Still we are justified in differentiating sharply between scurvy and hemophilia, and between a typical hemophilia and any of the members of the purpura hemorrhagica group. It would seem to me ill-advised to classify the above mentioned case as one of an extremely rare and, to say the least, imperfectly established disease, when it presents no features incompatible with, and many speaking quite directly in favor of, a diagnosis of typical hemophilia. Perhaps too little attention is paid to the fact clearly pointed out by Litten that such symptoms as petechiæ, ecchymoses, pains in the joints and even arthritises are met with in all diseases of the hemorrhagic group, and can have no real value in differentiating one from another. So far then as the symptoms themselves go, Loveland's case might be either hemophilia or purpura hemorrhagica The fact that the patient's father and mother were healthy has no significance, since hemophilia is generally transmitted through the mother who personally shows no symptoms. It would be of more interest to know whether any of her brothers or mother's brothers had bleeding tendencies. On the other hand, the statement that out of twelve children of the patient's family five died in infancy, is highly suggestive, as such occurrences often have been recorded in bleeder families. Further, the author states: "I do not know when the purpura began, but it must have been in the very early months," suggesting that it may have been congenital; and again, that he never, in a period of about eight years, saw the patient free from signs of the bleeding tendency, indicating a remarkably persistent, uniform course. Both of these observations tend to confirm the hemophilia idea, and to discredit the other, since most of the purpuras attacking young infants result fatally, and granting the possible establishment of the disease after birth, it would be, to say the least, extremely rare for it to run such a uniform chronic course. It is of some interest to know also that the patient was a boy. With regard to the question of scurvy, that disease can be eliminated from the discussion on the history of the diet alone, if for no other resaon.

R. T. Woodyat.

Deaths

Augustus Palmer Dudley, M.D. Dartmouth Medical College, 1878, of New York City, member of the American Medical Association, International Gynecological Society, American Gynecological Society, New York Obstetrical Society, New York Academy of Medicine, professor of gynecology in the Postgraduate Medical School and Hospital, surgeon Harlem Hospital, professor of gynecology Medical School of University of Vermont, died of pulmonary tuberculosis in Liverpool, Eng., July 15, while on his way to attend the International Congress of Gynecology at St. Petersburg, aged 52. Dr. Dudley was chairman of the Section on Obstetrics and Diseases of Women in 1893, and was a regular attendant on and participant in the work of that Section and of the Association. He was a frequent contributor to medical journals and was recognized as a high authority on gynecologic subjects and as a surgeon of marked ability.

William C. Jacobs, M.D. Medical College of Ohio, 1862, member of the American Medical Association, Mississippi Valley Medical Association, Summit County and Ohio medical societies, Union Medical Association of Northeast Ohio, Cleveland Medical Society, died at his home, Akron, Ohio, after a short illness, of septicemia following a pin prick sustained while treating a patient, aged 65.

Edward S. Wood, M.D. Harvard, 1871, professor of chemistry Harvard, member American Public Health Association, American Pharmaceutical Association, Boston Society for Medical Improvement, Massachusetts Medical Society, died at his summer home in Pocasset, Mass., of cancer of the intestines.

William A. Moal, M.D. University of Maryland, 1879, of Baltimore, died at the Johns Hopkins Hospital, July 12, after an operation for appendicitis, aged 56. He was joint author with the late H. Newell Martin of a work on dissection. He had not practiced for a number of years.

Walter McCandless, M.D. University and Bellevue Hospital Medical College, New York, 1899, died in Pittsburg, suddenly, while having teeth extracted, July 10. Death occurred during early administration of an anesthetic.

Edwin Stanton Fowler, M.D. University of the City of New York, formerly of Springfield, Ill., died at the North Shore Health Resort, Winnetka, Ill., July 11, aged 77.

Clarence G. Kiefer, M.D. Baltimore University School of Medicine, 1892, of Baltimore, died at the City Hospital, Baltimore, July 11, after a long illness, aged 37.

George H. Moran, M.D. University of Maryland, 1865, of Morgantown, N. C., died at the Whitehead Hospital, Salisbury, N. C., June 23, after an operation, aged 65.

Herman A. Newbold, M.D. Hahnemann Medical College. Philadelphia, 1895, died at his home in Morristown, N. J., July 10, aged 30.

Howard Ogle, M.D. Jefferson Medical College, Philadelphia, 1869, died at his home in Wilmington, Del., July 12.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

REPRESENTATIVE GERMAN MEDICAL JOURNALS AND DICTIONARIES.

Iowa Falls, Iowa, July 12, 1905.

To the Editor:—Sometime since I saw recommended a book for practitioners to aid them in securing a working knowledge of the German language. If you know of such a publication please give me the name of publishers, price, etc. J. L. Chassell, M.D.

Answer.—The only book concerning which we can find that The Journal has said anything approaching the above quotation is the dictionary of Lang & Abrahams, which was referred to May 6, 1905. On this subject see our answer to Dr. Bush below.

Charleston, Ill., July 10, 1905.

To the Editor:—Will you mention in The Journal three or four medical publications in the German language (and give subscription prices) that would be best for one wishing to take up the study of medical German—one who has only a limited knowledge of that language, and also a dictionary giving the German words, with definitions in English. J. H. Bush, M.D.

Answer.—As you will see by consulting the Foreign Current Medical Literature department in The Journal the weeklies contain the cream of the general scientific communications as a rule. Even when articles are published in detail elsewhere, the preliminary report usually appears in one of the great weeklies. The *Münchener med. Wochenschrift* is the oldest German weekly, being now in its fifty-second volume, the *Deutsche med. Wochenschrift* is in its thirty-first. The subscription price is the same for each, 32 marks, or a little less than $8, including postage. Each number has from thirty to fifty or sixty pages. The Vienna weeklies are much smaller, the *Wiener klin. Rundschau* and the *Wiener klin. Wochenschrift* averaging from ten to twenty pages. They cost respectively $6 and $5 a year. Lang & Abrahams' new German-English medical dictionary, published by P. Blakiston's Son & Co., 112 Walnut Street, Philadelphia, 1905, for $4, is proving satisfactory, but in purchasing a medical dictionary for foreign terms John S. Billing's fine dictionary, which contains the medical terms in five languages in a single alphabetical sequence, will be found invaluable. Current medical literature contains so many French and Italian, as well as English, German and Latin terms, that a dictionary with these five languages is none too compendious, and a reading knowledge of French is readily acquired. Billings' dictionary, the "National," is published by Lea Bros. & Co., 706 Sansom Street, Philadelphia, for $12. A "bargain" copy was advertised for $5 in a recent issue of The Journal. The *Münchener med. Wochft.*, mentioned above is published by J. F. Lehman, Heustrasse 20, Munich, Germany (specimen numbers sent free on application); the *Deutsche med. Wochft.*, by G. Thieme, Rabensteinplatz, 2, Leipsic, Germany, although edited at Berlin. The address of the *Wiener klin. Wochft.* is W. Braumüller, Wickenburggasse 13, Vienna, Austria, and of the *Wiener klin. Rundschau*, is Mariahilferstrasse 62, Vienna, Austria. Among the numerous other excellent journals are the monthly *Therapie der Gegenwart*, published at Berlin, N. Friedrichstrasse 105, for $3, and the weekly *Centralblatts*, published at Leipsic, Nürnbergerstrasse 36-38, for $5 a year, or the three combined—surgery, gynecology and internal medicine—at reduced rates. They are principally devoted to abstracts. One of the best means to aid in obtaining proficiency in reading a foreign language is to go over a foreign article, sentence by sentence, comparing it with a literal translation of the same. Opportunity for this is afforded when a medical writer publishes a communication simultaneously in this country or England and in Germany or France. Such opportunities can frequently be found by watching the index in the Current Literature department, as, for example, an article on Weil's disease, by Max Einhorn, published in English in the *American Journal of Medical Sciences*, Philadelphia, November, 1904, and in German in the *Archiv f. Verdauungskrankheiten*, vol. x, No. 5, published by S. Karger, Kalstrasse 15, Berlin, Germany.

WOODBRIDGE TREATMENT OF TYPHOID FEVER.

Bessemer, Ala., July 8, 1905.

To the Editor:—What is the Woodbridge treatment of typhoid fever? What does the medical profession think of it? If you had a patient who insisted on your using the Woodbridge treatment, would you use it or retire? Geo. A. Hogan.

Answer.—The Woodbridge treatment advocates the use of purgatives and antiseptics, as follows: On the appearance of the earliest symptoms of fever and even previous to a diagnosis the following tablet is given:

℞.	Res. podophyllin	gr. 1/960	000067
	Hydrarg. chloridi mitis	gr. 1/16	004
	Guaiacol carb.	gr. 1/16	004
	Menthol	gr. 1/16	004
	Eucalyptol q. s.		

M. Sig.: One such tablet given every fifteen minutes for twenty-four hours, and larger doses if necessary during the second twenty-four hours, until five or six free evacuations are obtained.

On the third or fourth day of the treatment, the following:

℞.	Res. podophyllin	gr. 1/960	000067
	Hydrarg chlor. mitis	gr. 1/16	004
	Guaiacol carb.	gr. 1/4	016
	Menthol	gr. 1/16	004
	Thymol.	gr. 1/16	004
	Eucalyyptol q. s.		

M. Sig.: One such tablet every one or two hours.

About the fourth or fifth day the following capsule is given:

℞.	Guaiacol carb.	gr. iil	18
	Thymol	gr. i	06
	Menthol	gr. ss	03
	Eucalyptol	m. v	30

M. Sig.: One such capsule every three or four hours, alternating with the tablets.

Large draughts of sterilized water are ordered with each dose of medicine, and if indicated some laxative mineral water.

The patient should be treated and not the disease alone. Consequently the Woodbridge treatment is faulty in that respect, and is not employed very extensively in the treatment of typhoid fever. The judgment of the physician and not that of the patient should be consulted in outlining the treatment in a case of typhoid fever. If the physician thinks the Woodbridge treatment indicated, he can humor the patient by using it: if he thinks it contraindicated, however, he would better retire from the case rather than allow the patient to dictate to him.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 15, 1905:

Wakeman, Wm. J., surgeon, left Fort Thomas, Ky., on thirty days' leave of absence.

Gandy, Charles M., surgeon, granted twenty days' leave of absence.

Hallock, H. M., asst.-surgeon, ordered to report without delay to Major Wm. H. Arthur, surgeon, president examining board, Washington, D. C., for physical examination to determine his fitness for promotion.

Stiles, Henry R., asst.-surgeon, retired from active service on account of disability, with rank of major, to date from July 1, 1905.

Carter, Edward C., surgeon, assigned to duty at Fort Leavenworth, Kans.

Schreiner, E. R., asst.-surgeon, relieved from duty at Fort McHenry, Maryland, and ordered to Washington Barracks, D. C., for duty.

Bourke, James, asst.-surgeon, ordered to proceed from New York City to Fort McHenry, Md., for temporary duty.

Halloran, Paul S., asst.-surgeon, granted leave of absence for one month, with permission to apply for two months' extension.

Jean, Geo. W., asst.-surgeon, ordered to proceed from Fort Adams, R. I., to Fort Porter, N. Y., for temporary duty.

Hallock, H. M., asst.-surgeon, granted fourteen days' leave of absence.

Koerper, C. E., asst.-surgeon, will in addition to present duties at Army General Hospital, Washington Barracks, D. C., report in person to commanding officer, Washington Barracks, D. C., for temporary duty.

Perley, Harry O., deputy surgeon general, left West Point, N. Y., on twenty-one days' leave of absence.

Jones, Percy L., asst.-surgeon, leave of absence extended ten days.

Howard, D. C., asst.-surgeon; so much as remains of the ordinary leave of absence is changed to sick leave of absence and extended one month and fifteen days.

Hall, James F., asst.-surgeon, recently arrived at San Francisco, Cal., is assigned to duty at the U. S. Army General Hospital, Presidio of San Francisco, Cal.

Keller, Wm. L., asst.-surgeon, relieved from duty at Army General Hospital, Presidio of San Francisco, Cal., and ordered to Fort Douglas, Utah, for duty.

Carter, E. C., asst.-surgeon, granted two months' leave of absence.

White, J., Samuel, contract surgeon, ordered from Fort Snelling, Minn., to Fort Harrison, Mont., for temporary duty.

Holmes, Thomas G., contract surgeon, returned to Fort Wayne, Mich., from duty with troops en route from Fort Sheridan, Ill., to Fort Sill, Okla.

Kelly, John P., contract surgeon, left Fort Riley, Kans., on four months' leave of absence.

Sievers, Robert E., contract surgeon, left Fort Harrison, Mont., and arrived at Fort Yellowstone, Wyo., for temporary duty.

Wall, Francis M., contract surgeon, ordered from Fort Oglethorpe, Ga., to Fort Tremont, S. C., for temporary duty.

Marshall, John S., examining and supervising dental surgeon, left San Francisco, Cal., July 9, to represent the Dental Corps of the Army at the Lewis and Clark Dental Congress, Portland, Ore., July 17 to 20.

Probert, Merton A., contract surgeon, relieved from duty at Fort Crook, Nebr., and ordered to his home for annulment of contract.

Scott, Sidney L., contract surgeon, relieved from duty at Washington Barracks, D. C., and ordered to duty at the Army General Hospital, Washington, D. C.

Vaughan, Milton, contract surgeon, relieved from duty at Fort Douglas, Utah, and ordered to duty at Fort Crook, Neb.

Suggs, Frank, contract surgeon, granted sick leave of absence for two months, to take effect when discharged from the Army General Hospital, Presidio of San Francisco, Cal.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending July 15, 1905:

Richardson, R. R., P. A. surgeon, commissioned P. A. surgeon, with rank of lieutenant, from May 16, 1904.

Fauntleroy, A. M., P. A. surgeon, commissioned P. A. surgeon, with rank of Lieutenant, from Sept. 29, 1904.

Sutton, R. L., asst.-surgeon, having been examined by a retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service, June 30, 1905, in accordance with the provisions of Section 1453, Revised Statutes.

Payne, J. H., P. A. surgeon, detached from the *Pennsylvania* and ordered to the *Nashville*.

Mayers, G. M., asst.-surgeon, ordered to the Naval Training Station, Newport, R. I., with additional duty on the *Constellation*.

Cather, D. C., asst.-surgeon, detached from the Naval Training Station, Newport, R. I., and ordered to the *Pennsylvania*.

Mears, J. B., acting asst.-surgeon, ordered to duty with the Torpedo Flotilla of the Coast Squadron.

Ohnesorg, K., P. A. surgeon, ordered to the *Mayflower*.

Thompson, E., surgeon, detached from the *Des Moines* and ordered home to wait orders.

Hoyt, R. E., asst.-surgeon, ordered to the Naval Academy.

Gordon, F. T., detached from the Naval Dispensary, Washington, D. C., and ordered home to wait orders, after discharging from treatment at the Naval Hospital.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine Hospital service for the seven days ending July 12, 1905.

Irwin, Fairfax, surgeon, granted leave of absence for one month, from August 8.

Sprague, E. K., P. A. surgeon, leave of absence for one month, from June 27, 1905, granted by bureau letter June 10, amended so that said leave shall be effective from July 5.

Parker, H. B., P. A. surgeon, granted leave of absence for ten days from June 16, on account of sickness.

Amesse, J. W., P. A. surgeon, granted leave of absence for three days, from July 11.

Earle, B. H., asst.-surgeon, bureau telegram granting leave of absence for seven days from June 25, amended so that said leave shall be from June 27.

Stimson, A. M., asst.-surgeon, granted leave of absence for one month and fourteen days, from July 21.

Rucker, W. C., assistant surgeon, granted leave of absence for seven days, from July 6, 1905, under paragraph 191 of the regulations.

Collins, G. L., asst.-surgeon, granted leave of absence for four days, from July 5, 1905, under paragraph 191 of the regulations.

Frost, W. H., asst.-surgeon, granted leave of absence for two days, from June 24, under paragraph 191 of the regulations.

Bailey, C. W., acting asst.-surgeon, granted leave of absence for seven days, from July 12.

Richardson, N. D., acting asst.-surgeon, granted leave of absence for five days under paragraph 210 of the regulations.

Sinclair, A. N., acting asst.-surgeon, granted leave of absence for thirty days, from July 8.

Achenbach, J., pharmacist, relieved from duty at the Marine-Hospital, Port Townsend, Wash., and directed to report to the medical officer in command of the Port Townsend quarantine station for duty.

Gibson, F. L., pharmacist, to proceed to Portland, Ore., for duty in connection with the service exhibit at the Lewis and Clark Exposition.

Troxler, R. F., pharmacist, relieved from duty at the Port Townsend quarantine station, and assigned to duty at the Marine Hospital, Port Townsend, Wash., effective May 10.

BOARDS CONVENED.

Board to meet at Key West, Fla., July 7, 1905, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon C. E. Banks, chairman; Acting Asst.-Surgeon S. D. W. Light, Recorder.

Board to meet in Washington, D. C., July 12, 1905, for the consideration of examination papers of Assistant Surgeons B. H. Earle, M. W. Glover and C. C. Pierce, to determine their fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Assistant Surgeon-General J. M. Eager, chairman; P. A. Surgeon Jos. Goldberger; Assistant Surgeon J. W. Trask, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the period from June 30 to July 7, 1905:

SMALLPOX—UNITED STATES.

Illinois: Chicago, June 17-July 1, 37 cases, 4 deaths.
Massachusetts: Lowell, June 17-July 1, 5 cases.
Montana: Butte, June 18-25, 1 case.
Ohio: Toledo, June 17-24, 1 case.
Pennsylvania: York, June 24-July 1, 2 cases.
South Carolina: Greenville, June 17-24, 2 cases.
Wisconsin: Milwaukee, June 17-24, 6.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, March 1-31, 54 deaths.
China: Shanghai, May 24, present.
France: Lyon, May 27-June 3, 1 case.
Great Britain: Birmingham, June 3-17, 10 cases. Cardiff, 2 cases.
India: Bombay, May 23-June 6, 43 deaths; Karachi, May 21-June 6, 9 cases, 2 deaths; Madras, May 20-26, 5 deaths.
Italy: Catania Province, June 8-15, 17 cases; Cosenza Province, 5 cases; Lecce Province, 6 cases; Messina, June 3-10, 3 cases; Palermo, 4 cases.
Mexico: Mexico City, June 3-10, 4 cases, 4 deaths.
Russia: Moscow, May 27-June 3, 28 cases, 10 deaths; Odessa, May 27-June 3, 9 cases 3 deaths.

YELLOW FEVER—FOREIGN.

British Honduras: Belize, June 15-22, 1 death.
Guatemala: Livingston, June 10-22, 5 cases, 4 deaths.
Panama: Colon, June 16-21, 6 cases, 2 deaths; Corozal, 2 cases; Empire, 1 case; La Boca, 2 cases; Panama, 10 cases, 1 death.
Venezuela: Maracaibo, June 16, present.

CHOLERA—FOREIGN.

India: Bombay, May 23-30, 1 death.

PLAGUE—INSULAR.

Hawaii: Honolulu, July 5, 1 death: Olaa, June 30, 1 death.

PLAGUE—FOREIGN.

Egypt: General, May 20-June 3, 17 cases; 12 deaths.
India: General, May 13-20, 41,213 cases, 35,492 deaths; Bombay, May 23-June 6, 708 deaths; Karachi, May 21-June 6, 183 cases, 166 deaths; Madras, May 20-26, 3 deaths.
Japan: Chiba, Ken., May 29, 1 death: Tokyo, April 18-May 30, 8 cases, 6 deaths.
Peru: Callao, June 11, 1 case: Payta, June 12, present.

Society Proceedings

AMERICAN SURGICAL ASSOCIATON.

Twenty-sixth Annual Meeting, held at San Francisco, July 5-7, 1905.

The President, Dr. George Ben Johnston, in the Chair.

Election of Officers.

The following officers were elected for the ensuing year: President, Dr. Albert Vander Veer, Albany, N. Y.; vice-presidents, Drs. James E. Moore, Minneapolis, and John C. Munro, Boston; secretary, Dr. Dudley P. Allen, Cleveland, Ohio, re-elected; treasurer, Dr. George R. Fowler, Brooklyn, re-elected; recorder, Dr. Richard H. Harte, Philadelphia.

Cleveland, Ohio, was selected as the place for holding the next annual meeting, the time to be fixed by the committee on annual meeting.

President's Address on John Peter Mettauer.

After a brief executive session, Dr. Emmet Rixford, San Francisco, the first vice-president, took the chair and Dr. Johnston delivered his address on Dr. John Peter Mettauer, who was born in 1787. His medical education was carried on under the most favorable conditions obtainable in America at that time. For a period of about forty years the number of surgical patients who gathered to him for treatment was such that he had constantly from forty to sixty patients under his care. Dr. Johnston said that Dudley's great record in cutting for stone 225 times in a practice of forty years must yield to Mettauer's total of 400 operations, and that the number of strictures relieved by him was something over 200. Johnston mentioned three operations performed by Mettauer in the last week of his life, when at the age of 88 his eyes were yet keen enough and his hands steady enough for him to perform a successful operation for cataract, for stone, and for amputation of the breast. Mettauer's most brilliant work was his method of operating for vesicovaginal fistula, and his successful employment of wire sutures made of lead, in which he antedated by a good many years even Sims, whose name is generally associated with this operation. So successful was Mettauer that he declared his belief that every case of this sort is curable by his method, and so far as his efforts are reported, Dr. Johnston is not aware that he ever failed in one. Mettauer's first reference to the operation of vesicovaginal fistula appeared in the *Boston Medical and Surgical Journal*, vol. XXII, page 154, twelve years before Sims' communication, and it clearly outlines the operation which ought always to be associated with his name. Mettauer was decidedly of the opinion that every case of vesicovaginal fistula could be cured, and his success justified the statement.

(*To be continued.*)

AMERICAN MEDICAL ASSOCIATION

PROCEEDINGS OF THE FIFTY-SIXTH ANNUAL SESSION HELD AT PORTLAND, OREGON, JULY 10-14, 1905.

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OFFICIAL MINUTES—HOUSE OF DELEGATES

First Meeting—Monday, July 10.

The House of Delegates convened in the Chamber of Commerce Building, Portland, Ore., and was called to order by the President, Dr. John H. Musser, of Philadelphia, at 11:10 a. m.

Dr. Cyrus L. Stevens, of Pennsylvania, presented the report of the Committee on Credentials, after which the President delivered the following address (see page 276).

Address of the President to the House of Delegates.

Gentlemen:—It gives me pleasure to welcome you in assemblage this day to assume the duties imposed on you by your fellow-members of the constituent bodies of this great organization. The demands on your time and patience you may find somewhat onerous. The sense of responsibility that attends and the satisfaction of fulfilling an imposed trust will sweeten your labors and allay your discomforts. The sincere sympathy and generous charity accorded me while conducting your deliberations last year will, I am sure, be mine this, and my extreme regret is that, in the absence of parliamentary skill, I can not show the master hand worthy of the occasion. We have, however, a common object, the welfare of the Association and, through it, our beloved profession, before which our mutual shortcomings pale.

During the year I have had the opportunity of contact with the various officials of the American Medical Association, whose tenure of office is more or less permanent, and who are, in a sense, the organization. Your President, in a measure, stands aloof from them in action and is more a representative of the profession than of the organization, if such distinction may be made. It is my duty, as well as my pleasure, to report to you, gentlemen of the House of Delegates, my impression of the work, which is to the effect that I care not where you seek or whither you turn no more high-toned, honorable men, with higher altruistic motives, exist than those who, while we go on our way, are laboring for the good of the organization they represent.

I would not, if I could, make any invidious distinction, but when I say our efficient Secretary-Editor almost sinks life itself and effaces all personality in the conduct of his onerous duties, I am only echoing what every organization secretary in allied bodies knows and every editor of allied journals keenly feels—a tribute to his sincerity and power. Likewise I might speak of your Board of Trustees, whose deliberations mean so much for us. Their responsibilities, increasing each year, are met by them with a courage and fidelity that brooks no idle thoughts. We are what we are because of their faithfulness to the trust imposed in them. We must have large cause to question the results of their deliberation and must weigh very carefully their recommendations before tossing them lightly on the fickle waves of an assembled body. So, too, may I speak of our "Organizer," who has gone among us and labored with us to the end only that we may, in whole or in part, become the exemplar of the beloved physician of old—the Luke of sacred story. Your permanent and, therefore, organic committees bring to us reports only as the result of mature deliberation. The emotional impulse—that influence which ofttimes tricks assemblies of men—should not carry us counter to their suggestions without calm deliberation. I am not doing violence to my appreciation of the efforts of the local committee, and I remind you that our present assemblage is counter to the advice of the committee on meeting place and transportation, which had reported otherwise after mature deliberation and in full recognition of our society's need. A corollary to this is, accept within your rights the reports of your committees and then hold them responsible if a wrong is done or a project fails.

Of the business of the year I have nothing to report. The Secretary, the Treasurer, and the Board of Trustees will lay before you the facts that you should know. From them you can infer the growth of the organization, the success of its endeavors, its benefits to the profession. You will realize at once the ability of the organization to take care of itself and to foster the best interests of the profession without the help of outside influences. You will not, after hearing these reports, be surprised to know that the power of the organization is complimented by others than those who are its well-wishers. The attempt of influences to turn our advantages to its own base uses will not surprise, but will truly grieve our fraternal spirit. If in thoughtless moments you may forget we are representing a profession, not a faction, or a motive ulterior to our cause, let us admonish one another in such spirit as to attain nobler ends.

We labor as an association under the organization of recent adoption. The results justify the trials and tribulations that attended this change. No mobile organization, growing to giant strength as the night passes, can be fitted to fixed rules of convention at once. There naturally must be misfits and friction. We must realize this and be patient while the mellowing influence of action and experience rubs down the inequalities. To us all comes a sense of unpreparedness to meet our great responsibilities, which behooves us to smother carping criticism and to bend sympathetic effort to altruistic ends.

The conduct of our deliberations is based on lines, now organic law, laid down by that master of organization, my predecessor in this chair, Dr. Frank Billings. The Association can not be too grateful for the unselfish manner in which he has dedicated his majestic powers to its cause. I have no further suggestions to make as to our procedure. At the proper time I shall name the various committees and ask of them prompt but mature deliberation of the problems referred to them, to the end that the House of Delegates may conduct its proceedings with such dispatch that its members may attend the section work of the Association.

The official relation of President and President-elect, a new experience for the Association, has been continued as in the previous year, with advantage, we believe, to the Association. President-elect McMurtry has taken charge of the session of this year, the program of which portends its scientific success.

I must recall to you and indorse the recommendation of ex-President Wyeth that the selection of the session place and the duties of arrangement for the session becomes a fixed part of our organization under the direct control of the House of Delegates and its representatives. The details of such arrangement I leave to you. I should like, too, to ask your specific attention, now that organization is growing to perfection, to further promotion of our scientific work. The Committee on Section Work might be instructed to look into the conduct of the section, note shortcomings and successes, so that we could bring to the highest level the weaker of our scientific units. I would ask, too, that you lend your counsel and support to your utmost to the cause of medical education, to the questions of reciprocity and allied measures that are the woof and warp of our whole existence. Let us not forget that we owe a duty to our nation, and that due support should be given its officials whose duties are cognate with us, the medical departments of the Army and of the Navy, and the Department of Public Health and Hygiene.

With these few remarks, permit me to join with you in felicitation over the elements that augur success in your deliberations and to wish for our Association a long career of activity and usefulness.

Committees.

The President then announced the following committees:

COMMITTEE ON CREDENTIALS.

Cyrus L. Stevens, Pennsylvania, Chairman.
R. C. Moore, Nebraska.
H. W. Dewey, Washington.
J. N. McCormack, Kentucky.
C. S. Sheldon, Wisconsin.

COMMITTEE ON REPORTS OF OFFICERS.

Frank Billings, Illinois, Chairman.
G. W. Guthrie, Pennsylvania.
C. D. Coleman, Georgia.
J. D. Bryant, New York.
C. J. Smith, Oregon.

COMMITTEE ON MEDICAL LEGISLATION AND POLITICAL ACTION.
(The Standing Committee, members *ex-officio.*)

W. B. Dorsett, Missouri, Chairman.
Walter L. Bierring, Iowa.
Geo. L. Richards, Mass.
L. C. Morris, Alabama.
W. J. Miller, Tenn.

REFERENCE COMMITTEE ON MEDICAL EDUCATION.
(*Ex-officio,* Members of Council.)

Geo. M. Kober, District of Columbia, Chairman.
J. N. McCormack, Kentucky.
Charles E. Woodruff, U. S. A.
W. A. Jayne, Colorado.
John C. Munro, Massachusetts.

REFERENCE COMMITTEE ON SECTIONS AND SECTION WORK.

Joseph McFarland, Pennsylvania, Chairman.
Edward F. Wells, Illinois.
J. D. Griffith, Missouri.
D. I. Wolfstein, Ohio.
John W. Foss, Arizona.

REFERENCE COMMITTEE ON RULES AND ORDER.

George Ben Johnston, Virginia, Chairman.
F. E. Daniel, Texas.
E. J. Smith, Oregon.
G. B. Black, New Mexico.
Melville Black, Colorado.

COMMITTEE ON HYGIENE AND PUBLIC HEALTH.

W. H. Sanders, Alabama, Chairman.
William S. Foster, Pennsylvania.
H. S. Cumming, California.
H. M. Workman, Minnesota.
Alexander Marcy, New Jersey.

REFERENCE COMMITTEE ON AMENDMENTS TO CONSTITUTION AND BY-LAWS.

A. R. Craig, Pennsylvania, Chairman.
W. N. Wishard, Indiana.
Frank Paschall, Texas.
William M. Harsha, Illinois.
J. Garland Sherrill, Kentucky.

REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS.

E. Eliot Harris, New York, Chairman.
C. S. Bacon, Illinois.
Phillip Mills Jones, California.
Edward E. Maxey, Idaho.
E. J. Williams, Mississippi.

Report of the Secretary.

REFERRED TO COMMITTEE. (See page 276.)

The next order was the report of the Secretary, copies of which were distributed, and, as there was no objection raised, the report was not read. It was referred to the Committee on Reports of Officers, and was as follows:

To the Members of the House of Delegates of the American Medical Association:

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

The membership on the date of my last report, June, 1904, was 15,334. During the year there have been added 4,889, and 938 have been dropped: 162 on account of death, 176 not eligible, 36 for non-payment of dues, 535 resigned, and 29 were not found, leaving a net gain of 3,951. This makes the total membership on June 1, 1905, 19,285. (It is estimated that there are about 17,000 subscribers not members.) Of the 4,889 names added to our membership list, 2,380 were new members, and 2,509 were subscribers to The Journal, and finally were transferred to the membership list.

CONSOLIDATION OF THE OKLAHOMA STATE MEDICAL ASSOCIATION AND THE INDIAN TERRITORY MEDICAL ASSOCIATION.

A letter has been received from the president of the Oklahoma State Medical Association, in which he states that a committee has been appointed by the Indian Territory Medical Association looking to the union of the Indian Territory Medical Association with the Oklahoma State Medical Association should the two territories be admitted as one state. He also states that he has been asked to appoint a similar committee, and asks for the proper mode of procedure. In reply I have stated that the matter rests entirely with the territorial associations, and that if the two decided to unite, a report of such action should be presented to the House of Delegates of the American Medical Association, with a request for the recognition of the new organization.

PORTO RICO ASSOCIATION.

During the past year, correspondence has been carried on with a number of physicians practicing in Porto Rico regarding membership in the American Medical Association and looking toward the establishment of a constituent association on that island. It is probable that the next year will see the organization of such an association in Porto Rico, asking for recognition.

SECTION ON ELECTRO-THERAPEUTICS.

Under date of Oct. 6, 1904, a letter was received from the Secretary of the American Electro-Therapeutic Association, stating that "at the fourteenth annual convention of the American Electro-Therapeutic Association, held at St. Louis, Mo., Sept. 13 to 16, 1904, it was voted that the secretary be instructed to communicate to the officers of the American Medical Association a request that the said American Medical Association establish before the next convention a section on Electro-therapeutics."

SYSTEM OF REPORTING.

The year has been marked with a growth and development in organization machinery that is highly gratifying. Under an ideal system of organization, the county secretary should report promptly to the state secretary the names of newly-elected members, as well as the names of members who have died, removed or resigned, or who have been suspended or dropped. The state secretary, after duly entering it on his own records, should forward this data to the general secretary's office, which should be the center of information in regard to the profession and its members. There are two essentials for such a system, (1) a method of transmitting such data from county secretaries to state secretaries and from state secretaries to the general secretary. Such a system should be simple and accurate and should be capable of transmitting a maximum amount of information with a minimum amount of labor. The majority of the county and state secretaries do their work practically without compensation, in the leisure moments of active professional life, and their work must be systematized so as to reduce it to the smallest necessary amount. Such a system of reporting members and collecting data is gradually being developed. (2) The second essential is that information regarding members must be preserved in the most available and most easily corrected form. The constant changes going on in the profession make any printed lists inadvisable, as they soon become incorrect. A card index is the only elastic, easily corrected system. For some time we have been engaged in constructing such an index of members of constituent state associations. We now have indexed the membership of over one-half of the constituent state associations, and this will be completed as rapidly as possible.

COUNCILOR'S BULLETIN.

The councilors of the constituent associations are the mainspring of organization in each state. Each councilor should have all the assistance that can be given him in his work of organizing his district and of stimulating local societies. Feeling that the councilors have heretofore been given too little attention and aid by the general organization and that each councilor was left to work out his own problems without knowing anything of the successes or failures of his fellow workers in other states, it was proposed, as a remedy for these conditions, that there shall be established a councilors' bulletin, for the discussion of organization conditions, methods, and results, such a bulletin to circulate among the councilors, state secretaries, and, perhaps, county secretaries. A circular letter, outlining such a plan and asking for an expression of opinion as to its advisability, was sent out in May to all state councilors, numbering about 288. One hundred and eighteen answers were received. Of these, none was opposed to the plan, three were in doubt, and the rest heartily favored it. Many valuable suggestions were made. It seems advisable that such an organization bulletin should be issued, perhaps quarterly, for circulation among those specially interested in the work of organization, and in making county societies of more value to their members.

CARD INDEX.

It has long been recognized that a permanent biographical card index of American physicians, giving data in regard to preliminary education, medical education, previous locations, etc., would be of great value to the association and to the profession. Such an index will be of value in tracing a physician through various locations, making up matter for directories, etc., and in compiling statistics regarding the profession. This work has been begun and is now being carried on along two different lines, viz.: (1) The accumulation and indexing of biographical data in regard to members of the profession now engaged in active practice. (2) The accumulation of similar data in regard to graduates of the current year and of recent licentiates of state boards of health. This has been carried on through the assistance and with the co-operation of medical colleges and secretaries of state licensing boards. The amount of information on hand is considerable and is steadily increasing. Respectfully submitted,

George H. Simmons, *General Secretary.*

Final Report of the Committee on Rush Monument.

ACCEPTED AND COMMITTEE DISCHARGED.

The President called for the report of the Committee on Rush Monument Fund, Dr. James C. Wilson, Chairman. In the absence of the chairman, copies of the printed report were distributed.

On motion of Dr. A. R. Craig, the report was accepted, the committee discharged and thanked for their efficient work. The report was as follows:

To the House of Delegates, American Medical Association:

Gentlemen:—In 1900 the surviving members of your committee on the Rush Monument consisted of two: Dr. Henry D. Holton and the chairman. At their request the President of the Association, at the 1900 Atlantic City session, added to the committee Dr. Frank Billings, Chicago; Dr. L. Duncan Bulkley, New York, and Dr. Wm. L. Rodman, Philadelphia.

This enlarged committee considered with great care various methods of increasing the fund, which then, with interest, amounted to about $15,000. Among these methods three seemed worthy of special attention: First, an appeal to the Trustees of the Association for a sufficient additional sum to meet the cost of an appropriate monument. An informal discussion of this method with a number of members of the Board of Trustees satisfied the committee that formal action of this kind was not advisable. Second, a general appeal to the members of the Association. This plan likewise, after very careful consideration, was abandoned. Repeated appeals had been made from time to time with the evidences of a diminishing disposition on the part of the profession to contribute further to the fund. Third, an attempt to obtain additional funds in the form of an appropriation by congress for the purpose was also seriously considered. The last scheme was, however, abandoned, since it was the opinion of the members of the committee that the monument to Benjamin Rush was of the nature of a gift of the profession to the nation, and that to ask the national representatives in congress to appropriate money for the purpose would be contrary to the original intention. All three of these plans, together with others less practical that had been from time to time suggested, were in turn given up.

Finally, at the suggestion of Dr. Holton, the senior member of the committee, it was determined to erect such a monument as could be obtained with the funds already on hand.

After careful investigation the contract for the monument was given to the Henry-Bonnard Bronze Co. of New York, at whose recommendation the commission for the statue was awarded to Mr. R. Hinton Perry, a young sculptor of prominence, and that for the pedestal to Mr. Louis R. Metcalfe, an architect of distinction. The thanks of the committee are due to these gentlemen for the efficient and satisfactory manner in which they discharged the work allotted to them, and to Mr. Eugene F. Aucaigne, the manager of the Henry-Bonnard Bronze Co., for practical suggestions and advice.

Early in the history of the committee, through the efforts of the late Dr. Albert H. Gihon, the then secretary of the navy had designated a site for the statue on the grounds of the Naval Museum of Hygiene and Medical School, at 23d and E streets, N. W., Washington, D. C. The exact location within the enclosure was fixed early in 1904 by a special commission, consisting of Surgeon-General P. M. Rixey, U. S. N., Dr. J. C. Wilson, Mr. Louis R. Metcalfe, Mr. Frederick B. McGuire, appointed by W. H. Moody, Secretary of the Navy. There the monument now stands in a conspicuous position on a beautiful lawn in front of the Naval Museum, and at a considerable elevation above the level of the public highway.

The bronze statue is a little more than life size, and has been favorably spoken of by many who are capable of judging it, as a work of art. The pedestal, which stands on an octagonal base of granite rising from the level of the ground by three steps, is of beautiful design, and bears on its four panels respectively the following legends: In front, "Benjamin Rush, Physician and Philanthropist, 1745, 1813." On the left, "Signer of the Declaration of Independence." On the right, "Studium sine calamo somnium," and on the rear, "The first American Alienist." These legends are in raised bronze letters, dowelled into the stone. The total height of the monument is about seventeen feet. On the base in front, cut into the stone, are the words "Erected by the American Medical Association, 1904."

The unveiling and dedication of the monument took place on Saturday, June 11, 1904, at 5 o'clock. Dr. J. H. Musser, the President of the American Medical Association, made a brief address; Dr. J. C. Wilson, the chairman of the Committee on Rush Monument, delivered a eulogy on Rush, and the President of the United States accepted the monument as a gift from the medical profession to the nation in a graceful and interesting address. Seats were arranged to accommodate about 500 people. These were all occupied, and many other guests of the Association were grouped on the lawn. There was music by the Marine Band.

The beauty of the weather and the presence of many ladies, together with numbers of medical officers of the Army and Navy in uniform, served to make the occasion a notable one. Invitations were extended to the members of the American Medical Association at Atlantic City and to the presidents of all the state medical societies, and special invitations were sent to the governing bodies of the following organizations, in the early history of which the name of Benjamin Rush is prominent, namely, Princeton University, the University of Pennsylvania, the American Philosophical Society, the College of Physicians of Philadelphia and the Pennsylvania Hospital. Your chairman of the Committee on Rush Monument recently examined the monument and found it well cared for and surrounded by beds of recently planted flowers.

The committee can not conclude this report without an expression of the sentiments of gratitude which they entertain toward the late Dr. Albert H. Gihon, by whose initiative and untiring energy the erection of this monument to the most distinguished American physician of his time was rendered possible. The thanks of the committee are due and are hereby tendered to the President of the United States, whose presence and address at the unveiling of the monument served to make it a memorable occasion; to General Rixey for many acts of courtesy; to the officers of the Naval Museum for valuable assistance on that occasion, and to the government for the services of the Marine Band. The chairman, in concluding this report, desires to express his warm thanks to his associates on the committee, and in particular his thanks to Dr. Henry D. Holton, who willingly undertook the greater part of the arduous detail of the work. Finally, the Committee on Rush Monument of the American Medical Association hereby respectfully asks to be discharged.

J. C. Wilson,
Chairman.

Philadelphia, May 31, 1905.

Report of Committee on Walter Reed Monument.

The report of the Committee on Walter Reed Monument, Dr. W. W. Keen, Chairman, was called for. In the absence of Dr. Keen, copies of the report were distributed, and, on motion of Dr. Billings, the report was accepted and the committee was continued. The report was as follows:

Philadelphia, June 17, 1905.

To the House of Delegates, American Medical Association:

Gentlemen:—The Committee on the Walter Reed Memorial Fund begs leave to make the following report:

The sum total in the hands of Mr. C. J.. Bell of the American Security and Trust Co., Washington, D. C., on June 14, 1905, was $16,194.75. The total amount of subscriptions at that date were $18,065.75, leaving the sum of $1,871 still unpaid. Nearly the entire balance unpaid ($1,871) will be due July 1, 1905, on pledges given at the last session of the Association. There is little doubt that practically all of these pledges will be paid.

As nearly as can be made out by the treasurer, Mr. Bell, the members of the American Medical Association have contributed almost $10,000 of the $18,000 subscribed. This is most creditable to the public spirit of the members of the Association. The committee would beg leave, therefore, to report progress as indicated and ask to be continued for at least another year.

The chairman cheerfully acknowledges the admirable work done by the members of the committee. W. W. Keen.

Council on Medical Education. Report Called for and Deferred.—The report of the Committee on Medical Education, Dr. Arthur D. Bevan, Chairman, was called for and deferred until a subsequent session (pages 269, 278).

Committee on Senn Medal. Report Called for and Deferred.—The report of the Committee on Senn Medal was called for, Dr. James E. Moore, Chairman. Dr. McRae, of Georgia, a member of this committee, asked for further time, which was granted (pages 269, 278).

Amendments to By-Laws.

REFERRED TO REFERENCE COMMITTEE. (See pages 278, 283.)

[Note.—New Amendments were introduced, later, to lie over a year. See below, this page, and also pages 274, 275, 280.]

The following amendments to the by-laws were referred to the Reference Committee on Amendments to the Constitution and By-laws:

Chapter 7, Section 1 (page 7 as revised): Nominations for office, except that of the Treasurer, shall be made orally, but no nominating speech shall exceed two minutes in length. Any nominee receiving a majority of the votes cast shall be declared elected. The Treasurer shall be nominated by the Board of Trustees.

Sestion 1, Chapter 4: Striking out Section 1 and inserting in lieu thereof the following: "*Time of Election.*—The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the last day of the session."

Section 3, Chapter 4: Striking out said Section and inserting in lieu thereof the following: "Nominations for President shall be by ballot. All other officers shall be nominated by a committee of seven, representing the various geographical divisions of the country as nearly as may be."

Chapter 8, Section 1: That the name of the Section on Pharmacology be changed to the Section on Pharmacology and Therapeutics.

Report of Committee on National Incorporation.

READ IN PART AND DEFERRED. (See pages 269, 270, 277.)

The President called for the report of the Committee on National Incorporation, and in the absence of Dr. Joseph D. Bryant, Chairman, and on motion of Dr. Harris, New York, the Secretary read the salient points of the report.

On motion of Dr. Foster, Pennsylvania, further consideration of the report was postponed until the time indicated in the official program, so as to give the chairman of the committee an opportunity to be present and to take part in the consideration of the report.

New Amendments to By-Laws.

Under the head of "New Business," Dr. Edward F. Wells, Illinois, offered the following amendments to the by-laws:

[Note: In accordance with the By-laws, these proposed amendments will lie over till a subsequent session. For action on amendments previously proposed, see above and below, pp. 278, 283, 285.]

Book IV.—Chapter II.—Section 8.—Striking out said section and inserting in lieu thereof the following: "*Sec. 8. Section Lectureships.*—Each section may, at the discretion of its officers, establish an annual lectureship, as follows: The lecture shall be on some subject connected with that of the section before which it is given, shall embrace the results of historical research, original observation and experimental investigation, and shall not occupy more than thirty minutes in its delivery. The lecturer shall be appointed by the section officers, the selection to be made either by competition, aspirants to submit abstracts which show clearly the facts and conclusions to be presented in the lecture, or by invitation, extended to some person who has risen to pre-eminence in the profession of medicine, who, if a foreigner, may be nominated to honorary membership in the American Medical Association."

Book IV.—Chapter II.—Section 2.—Striking out the last (third) sentence of said section and inserting in lieu thereof the following: "Each section shall also elect biennially one representative, and one alternate, to the House of Delegates of the American Medical Association to serve two years.' [Referred to the Reference Committee on Amendments to the Constitution and By-Laws. See page 279.]

Dr. Billings, Illinois, moved that the Chairman of the Committee of Arrangements be requested to secure a better room in which to hold the meetings of the House of Delegates. Seconded and carried.

On motion of Dr. Baldwin, Illinois, the House of Delegates then adjourned until 3 p. m.

Second Meeting—Monday, July 10.

The House of Delegates reassembled at 3 p. m. and was called to order by the President.

The Secretary read the minutes of the previous meeting, and they were approved.

Dr. Mackenzie, Chairman of the Committee of Arrangements, stated that provision had been made for holding future meetings of the House of Delegates in the Atkinson School Building, and, on motion of Dr. Baldwin, Illinois, the change was accepted.

Committee on Medical Legislation.

REFERRED TO COMMITTEE. (See pages 259, 277.)

The President called for the report of the Committee on Medical Legislation.

The Secretary stated that he had received a letter from Dr. Reed, Chairman of the Committee, stating that he could not be present, and, on motion, the report was referred to the Reference Committee on Medical Legislation and Political Action.

Council on Medical Education Report Postponed.—The report of the Council on Medical Education was called for, and, in the absence of the chairman of that committee, the report was passed. (See pages 267, 278.)

Report of Committee on Scientific Research.

The President called for the report of the Committee on Scientific Research, Dr. Alfred Stengel, Chairman. Dr. Stengel stated that the committee had recommended to the Board of Trustees the giving of grants for scientific research to those who have undertaken to prepare scientific papers on subjects requiring considerable investigation, and that such papers have been presented to the Section on Pathology and Physiology—Drs. Leo Loeb, Philadelphia; R. M. Pearce, Albany, and Gustav Ruediger, Chicago. The committee had not yet received a definite acceptance of its suggestion from the Board of Trustees. The committee expressed the hope that the grants will receive the approbation of the Board of Trustees. The committee reported that, in its opinion, it is desirable that the giving of these small grants, which amount to but one hundred dollars per person, should be continued, for the reason that it gives the committee encouragement in carrying on scientific work of a high order.

Dr. Billings, Illinois, moved that the report of the committee be adopted, and that the House of Delegates recommend that the Board of Trustees follow out the suggestion made by the committee. Seconded and carried.

Incorporation Committee Report Postponed.—The report of the Committee on National Incorporation was called for and passed temporarily, in the absence of the chairman. (See pages 258, 269, 270, 277.)

Committee on Reciprocity Report Postponed.—The President asked whether the report of the Committee on Reciprocity was ready.

Dr. Rodman, Chairman, stated that his committee would have a meeting this evening and expressed the hope that the committee would be able to report to-morrow. Further time was granted. (See page 274.)

Report of Committee on Medical Legislation.

ACCEPTED AND REFERRED TO BOARD OF TRUSTEES. (Page 277.)

Dr. Billings, Illinois, asked whether it was not possible to have the report of the Committee on Medical Legislation read at this time, as a member of that committee, Dr. Rodman, was present.

The President said he saw no reason why the report should not be read now.

On motion by Dr. Wells, Illinois, the report was read by the Secretary as follows:

To the House of Delegates:

In accordance with the Constitution and By-laws, your Committee on Legislation has the honor to submit its report covering the interval since the session of the Association in June, 1904.

GENERAL WORK OF THE COMMITTEE.

The report of this committee last year set forth the extent of the auxiliary organization that it had effected for the purpose of making more effective such agitation as might be necessary either for or against pending legislation touching questions of interest to the medical profession. This organization, theoretically, embraces the establishment of an official correspondent in each county in the United States, the object being to have every such correspondent in touch with the local medical organization wherever such an organization exists, or with the profession wherever it is yet unorganized. The profession has been very responsive to this movement and as a result the office of your committee is now in possession of a directory embracing about 2,800 local correspondents, who comprise the National Auxiliary Legislative Committee. This extensive organization has been most effective in bringing the influence of the medical profession and, through the medical profession, the influence of the respective communities to bear on such questions as legitimately concern not only the medical profession, but the public in general. This is accomplished by appealing to this large committee by formal referendum. During the past year it has been necessary to issue only two general referenda. It has, however, been found expedient to issue a number of special referenda calculated to reach members of committees in both the House and the Senate. The committee is in possession of abundant evidence that the influence thus exerted commands the respectful consideration of the members of Congress in both houses.

A POLITICAL DIRECTORY.

A number of members of the National Auxiliary Legislative Committee have suggested to the central committee that it would be a good idea in special cases for the central committee to be in direct communication with the dominant local political influences in the different localities.

Acting on this suggestion, your committee undertook to secure and it is very glad to be able to report that it has secured a list of the local political leaders of every organized and recognized political party in the United States. The list already embraces the names of several political managers in each of about 900 counties, the entire list aggregating in excess of 11,000 names. Through this list the central committee is in position to bring questions of pending legislation to the serious and thoughtful consideration of the men who, in their respective localities, exercise a preponderating influence in determining political action. The few instances in which it has been necessary to have recourse to this list has shown that it is remarkably effective. It should be made clear, however, that in carrying out such a plan of action, care is taken never to ignore but rather to strengthen the local representatives of our strictly professional organization. Thus, in addressing the local political leaders in a particular county, it is the habit of your committee to lay the pending question frankly before them and request that they consult the member of the National Auxiliary Committee residing in their county. A letter of advice is likewise sent to such local auxiliary committeeman requesting him, in turn, to consult with the local political factors. The political list is, furthermore, so arranged that the dominant polities of each county and of each congressional district is indicated, as well as the political affiliations of each member whose name appears on the list. It thus happens that we are able to move with a certain degree of accuracy in invoking political influence in behalf of such measures as are taken up by your committee. This list will be kept alive by asking for revisions from time to time, especially after each general election, and will, we are sure, prove to be an effective medium of action in the agitations which are pending in the immediate future.

THE NATIONAL LEGISLATIVE COUNCIL.

The National Legislative Council is to be recognized as one of the most important elements in the mechanism for national agitation. It is before this body that all questions of proposed or pending national legislation touching questions of interest to the medical profession are submitted for careful consideration, and it is only after affirmative action by this representative body, consisting of one member from each state and territorial medical association, that your committee assumes to foster any given measure. It is thus that the championship of a measure by your committee is accepted by the Congress as the championship by the American Medical Association, which, being the representative organization of the medical profession of the United States, makes its voice, in effect, the voice of the entire profession. The National Legislative Council was not, however, called in session during the last year. The reason of this omission was found in the fact that there were no questions of a medical character pending before the Congress which had not already been acted on by the National Legislative Council. Your committee went to the extent of inquiring whether or not there were any questions to be presented from the different states; but, as none were offering, it was not thought worth while to subject the different state associations to the expense of a meeting. With the matters, however, which will shortly be crystalized, representing, as they do, questions of very great concern to the profession and to the public, it will be necessary for the National Legislative Council to meet in December of the present year, or as soon thereafter as these various propositions can be formulated for submission to its consideration.

MEASURES BEFORE THE LAST SESSION OF THE CONGRESS.

The last session of the Fifty-eighth Congress began early in December, 1904, and terminated March 3, 1905. It was, therefore, a short session, the chief business of which was to provide for the necessary expenses of the government. As these questions are of a broad, comprehensive and intricate character and as their consideration is of primary importance, they practically monopolize the time of all short sessions. The last session was no exception to the rule. It was, therefore, an inauspicious time for the presentation or consideration of any measures not vital to the operation of the government. In spite of this fact, however, three measures of importance to the medical profession—measures which had received the indorsement of the National Legislative Council, the passage of which was advocated through personal and formal written representations by your committee, were taken under consideration.

One of these, namely, that for the establishment of an Army Medical Hospital in Washington, was passed; the second measure, namely, the Pure Food and Drug Bill, passed both houses of the Congress, but failed in conference. The third measure, namely, that of the Army Medical Reorganization Bill, passed the Senate, was reported favorably after protracted hearings attended by your committee, by the House Committee on Military Affairs, and would doubtless have passed the House without discussion if it had not been arbitrarily excluded from the calendar by Speaker Cannon. In view of the history of legislation—particularly legislation touching medical and public health interests by the Congress—your committee feels that the progress realized during the last year, and especially during the last short session of the Congress, is distinctly encouraging.

THE STATUS OF THE MEDICAL PROFESSION IN THE PUBLIC SERVICES.

The trend of all activities by the legislative machinery of the American Medical Association is in the direction of the betterment of the status of the medical profession as represented in the various branches of the public services. This status is determined either directly by laws enacted by the Congress or by regulations adopted by the executive in pursuance of such laws. It is, therefore, with the law-making body with which the medical profession has to deal in correcting whatever may be unjust or what, from its viewpoint, it may consider against public policy. This is a broad principle, touching not only the medical, but other professions. In the instance of the medical profession it is exemplified at present particularly in the Army, the Navy, the Public Health and Marine-Hospital services and in the Isthmian Sanitary Service. In each of these services the status and duties of the medical officers are prescribed by regulation. These regulations once enacted and service under them having been accepted, all further change of status must come either from the initiative of a superior executive or through the intervention of the law-making branch of the government. That the medical profession in general may understand more explicitly than it now comprehends the exact meaning of the foregoing statement, attention is called to the following executive order:

EXECUTIVE ORDER.

> All officers and employes of the United States of every description serving in or under any of the Executive Departments and whether so serving in or out of Washington, are hereby forbidden, either directly or indirectly, individually or through associations, to solicit an increase of pay or to influence or attempt to influence in their own interest any other legislation whatever, either before Congress or its committees, or in any way save through the heads of departments in or under which they serve, on penalty of dismissal from the government service.
>
> White House, Jan. 31, 1902. THEODORE ROOSEVELT.

DUTIES OF THE PROFESSION IN PRIVATE LIFE TO THEIR PUBLIC CONFRÈRES.

While the position thus assumed is unquestionably justifiable from a governmental or disciplinary standpoint, there remains, however, another and very serious side to the question. It must be remembered that the professions in the public services are, primarily and essentially, the representatives of the corresponding professions in private life; that the status of the professions in the public services, relative to other professions, persons and classes, will and must be recognized as a criterion of the relative status of the corresponding professions in private life; and that, consequently, the professions in private life, jealous alike of their positions and their prerogatives, must see to it that neither are compromised through precedents established either for or by their public representatives. Recognizing, as has been shown, that the hands of their public confrères are tied by executive restriction, it becomes the duty of the respective professions, in their organized capacity, to take the initiative in correcting any influences which, in a reflex way, may act detrimentally on their own welfare, whether in public or private capacity. When such action can be coupled with unquestionable considerations for the public good, the obligation becomes doubly imperative. But, aside from the altruistic motive, and as a complete justification for intervention, it is to be remembered that this is an age characterized by the rapid evolution of social groups and classes; that these groups and classes are already jostling each other for place; and that, consequently, that group or class, or, more specifically, that profession, must be vigilant and courageous that would guard its prerogatives and conserve its status in a democracy presumably founded on the principle of equality.

Such intervention ought to be undertaken only after careful consideration of all the interests involved. Care should be taken to avoid the tendency to consider the viewpoint of a given profession as the only viewpoint in the case. Representations should be made, whether to the legislative or the executive departments, always with profound respect for the intention of those in authority to conserve all the interests placed in their hands, but with the feeling, the assurance, that the viewpoint of the legislator or of the executive may not be the only viewpoint in the case. Thus, to illustrate, it would seem that a given profession would be justified in making respectful representations to the heads of executive departments when its representatives in the service are placed in positions of responsibility, without authority to control or determine results; or, when final judgment is passed on the technical knowledge it represents by those who are ignorant of the subject; or when it is ignored in the composition of commissions of mixed membership, dealing in a large way with the practical application of the art and sciences for which it stands; or when it is excluded from consultative bodies on which its skill and position would naturally entitle it to representation; or when its technical qualifications are permitted to act as a bar sinister to its preferment in any capacity to which its general attainments entitle it to consideration.

THE STATUS OF THE SANITARY DEPARTMENT IN THE ISTHMIAN CANAL ZONE.

It was in pursuance of the foregoing principle that your committee, acting under general instructions, made earnest representations to the President of the United States to appoint a medical representative on the Isthmian Canal Commission when that body was first organized. The circumstances attending this application and its result were laid before you in our last annual report. Since that time, namely, in the month of February, 1905, a convenient opportunity occurred for your chairman, while visiting the Isthmus of Panama on other business, to observe the results of the organization that had been effected. These observations were embodied in a paper, prepared by your chairman in his official capacity for submission through the official JOURNAL of the Association for the information of the general membership of that body. A copy of this information in the form of a special report was submitted by request and as a matter of courtesy to the Secretary of War. The fact that such information existed, the fact that the government was in the possession of information of such special importance to the medical profession, and the fact that that information had been gathered and communicated to the government as the official act of an officer of this Association, responsible to this Association and not to the government, were deemed by your chairman to be facts to a knowledge of which the Association was entitled. He accordingly, as the only means of disseminating such knowledge, at once and without hesitation, submitted a copy of the report for publication in the official JOURNAL of the Association. The commission replied by a general denial, and the President publicly criticised your chairman for an alleged breach of propriety in publishing the report. Your chairman, while not yielding his right to control in the interest of this Association information that, in the first instance, was exclusively the property of the Association, but recognizing that such right might better be waived out of consideration for the large interest represented by conformity to the customs and usages of the government, promptly apologized for the publication. It is gratifying to record that the incident thus amicably closed was shortly followed by the forced resignation of the commission, as urged in the report, and that other conditions complained of in the report have likewise been remedied as rapidly as time and circumstances have permitted.

That the resulting status of the Sanitary Department under the commission as reorganized is not, however, autonomous is indicated by the fact that one member of the Executive Committee is designated as "Commissioner in Charge of Government and Sanitation." This arrangement seems to be essential in view of the very wise and business-like plan of the President and of the Secretary of War to concentrate the management of the entire Isthmian enterprise to the hands of three distinctly administrative officers, namely, one to attend to business in the United States, one to govern the zone, and the third to dig the canal. It is to be accepted, however, as a subject for congratulation that the sanitary department, although still technically subordinate, in reality and in contrast with the order of things under the old commission, enjoys practically absolute freedom of action. This is indicated not only by the letter of Mr. Taft, Secretary of War, to Col. Gorgas, Chief of the Sanitary Department, published in a recent issue of The Journal, but by an official dispatch of Gov. Magoon, "Commissioner in Charge of Government and Sanitation," to Col. Gorgas, as follows:

> I know I voice the earnest conviction of the President and the Secretary of War in stating that yellow fever must be eradicated and proper sanitation accomplished, if it is within the power of human endeavor. Money, means and men, to the extent of the commission's ability to supply them, are at your disposal. We rely on you to ascertain and determine what is required. By "We" I mean the President, the Secretary of War, the Commission and the people of the United States.

It would thus seem that, through the wise initiative of the President and of the Secretary of War, carried into effect by Governor Magoon, the Sanitary Department on the Isthmus is to be given an opportunity to demonstrate its usefulness, is to be given credit for its achievements; from which it follows logically that it is to be justly held responsible for its failures.

PENDING LEGISLATION.

A number of measures of interest to the medical profession will come before the next Congress. The pure food and drug bill will again be placed on the calendar. This measure during the last session incurred the violent opposition of the whisky trust, embracing more particularly rectifiers and compounders of spirits, by the patent medicine trust, which made its boast that it represented $30,000,000 of capital, and that by that means it was able to control the United States Senate, and by the Retail Grocers' Association, the members of which imagine that they reap large profits by selling sophisticated articles of food. These forces will again be to the front, and it will require the active labor of every friend of the measure to thwart their influence.

The Medical Reorganization Bill will also be reintroduced. This measure, like the preceding one, has the unqualified endorsement of the administration. Important and influential representations have been made to the members of the National Legislative Council touching certain provisions of this measure which may make it necessary for the council to take the bill under further consideration. But as these criticisms belong only to a few subordinate features of the proposed legislation, the measure will undoubtedly again call for and receive the support of the medical profession.

Measures are expected to be introduced in behalf of a naval hospital and certain recommendations touching the modification of the status of the medical department of the Navy. In addition to this there will be some more legislation coming from the Bureau of Public Health and Marine-Hospital Service.

It has been suggested that postal regulations governing the transmission through the mails of objectionable medical literature, or of alleged medical matter, ought to be enacted. These matters in due season will be taken up by the heads of the legislative departments of the government at Washington, and when properly formulated will be brought before the National Legislative Council. In this connection, however, your committee begs leave to emphasize the fact that it is its policy to champion only a few bills but good and necessary ones rather than to divide its energies in promoting a number of measures some of which may be of questionable benefit.

MEDICAL MEN IN LEGISLATIVE BODIES.

Your committee has felt itself embarrassed from time to time by the fact that it has had comparatively few representatives of its profession in the Congress. This was sufficiently exemplified in the Fifty-eighth Congress, in which there were but two medical men in the Senate. One member of the House at one time had been a student of medicine. On the other hand, more than half of both assemblies are made up of representatives of the legal profession. In this connection the committee urges that in the legislative field the duty of the profession to themselves and to the public is very distinct. To begin with, each profession owes it to itself to be adequately represented in all legislative bodies, state and national. No profession can complain if it is the victim of inimical legislation, passed during absence from these posts of duty. On the other hand, the profession owe to themselves and to the people certain self-denials in the direction of legislative work. Thus, speaking now more particularly for the medical profession, laws relating to its status and efficiency in the public services, laws regulating the study and practice of medicine, laws relating to the public health, the protection of streams from pollution, the protection of interstate commerce from disease-producing agencies, quarantine, the prevention and management of epidemics, the manufacture of drugs, the purity of food and water supplies, need the attention of the medical profesion in legislative bodies.

EXPENSE OF THE COMMITTEE.

The expense of the Committee on Legislation varies with the amount of work it has to do. Thus repeated appearances of the committee before the various committees of the Congress such as are liable to be necessary during the next session necessitate larger appropriations than were required during the last session. The postage account is a relatively large item in the expenditures of the committee. This, also, varies more especially according to the number and character of referenda that require to be issued. The current correspondence of the chairman's office is heavy and requires the constant service of the clerk of the committee. Including referenda, reprints and letters, over 17,000 pieces of mail have been sent out by your committee since the date of our last report. This is less than usual. The large list of political correspondents and the large amount of work to be done during the coming session of the Congress will greatly increase the expense for postage. When several referenda have to be issued in comparatively quick succession additional clerical help is required. It has become necessary to provide a special room for the clerk of the committee. In this connection the committee begs leave to express its appreciation of the hearty co-operation extended to it by the Board of Trustees. The appropriations and disbursements for and by the committee will appear in the report of the Treasurer.

THE BUREAU OF MEDICAL LEGISLATION.

In view of the work done, the expense incurred and the responsibilities met by the Committee on Legislation, and in view of the fact that these features will increase rather than diminish, the suggestion is urged that other facilities ought to be furnished for carrying on the work.

It can readily be seen, for instance, that to keep these lists alive and to utilize them for promoting or defeating proposed legislation, as the interests of the public and the profession may demand, and to carry on the correspondence necessary to accomplish these ends, to say nothing of one or more trips to Washington during each session of the Congress, requires more time and labor than can reasonably be expected either of the Committee on Medical Legislation or of any man who may accept the chairmanship of that committee.

In view of these facts it is proposed to establish a Bureau of Medical Legislation, to be located in the Association building, Chicago. It is intended that this bureau shall be in the immediate charge of the Secretary of the Association, who in this matter will act under the supervisory direction of the Committee on Medical Legislation. Some person familiar with the work would have to be employed by the Trustees to act as assistant secretary in charge of the bureau.

Among other arguments in favor of such a step are the following: 1, It would place the legislative work of the Association on a business basis; 2, it would enable the assistant secretary in charge of the bureau to have the efficient co-operation of The Journal office; 3, it would expedite the printing for the committee which is now done by the Association Press; 4, it would have the advantage of the mailing department; 5, it would be in close touch with The Journal, through which it is often desirable to promulgate information without a day's delay.

Respectfully submitted,

William L. Rodman,
William H. Welch,
Charles A. L. Reed, Chairman.

Dr. Wells, Illinois, moved that the report be accepted; that that portion requiring an expenditure of money be referred to the Board of Trustees, and that the committee be thanked for its work and be continued. Seconded.

Dr. Billings, Illinois, asked if Dr. Wells' motion meant the adoption of the report, with the suggestions of establishment of a bureau.

Dr. Wells replied that his motion meant the whole report.

The President stated that this report should go to the Reference Committee on Medical Legislation and Political Action, to be reported later by that committee to the House of Delegates, when the motion of Dr. Wells could be taken up.

Dr. Bacon, Illinois, asked if it was not possible for the House of Delegates to act on the report now.

The President replied that, in accordance with the rules, the report should go to the Reference Committee on Medical Legislation and Political Action, and then that committee would report back to the House of Delegates, and he so ruled.

Dr. Wells, Illinois, said he would move, if it was in order, that the report be referred to the Committee on Medical Legislation and Political Action for rapid action while the subject was fresh in the minds of the delegates.

The President decided that this motion was unnecessary; that the report would be referred to the Reference Committee on Medical Legislation and Political Action, with the request that the committee act as rapidly as possible. (See page 277.)

Report of Committee on International Medical Congress.

The Secretary read the report of the Committee on International Medical Congress, Dr. John H. Musser, Chairman, as follows:

Pursuant with your instructions, and at the request of the Committee of Arrangements of Fifteenth International Medical Congress, your President of the House of Delegates appointed a committee, whose names are appended, as members of the American National Committee:

Dudley P. Allen.
C. S. Bull.
E. C. Burnett.
E. G. Brackett.
H. E. Bell.
Frank Billings.
Herman M. Biggs.
Herbert L. Borell.
T. J. W. Burgess.
Wm. T. Corlett.
William T. Councilman.
Wm. H. Carmalt.
Richard C. Cabot.
Charles H. Dana.
N. S. Davis, Jr.
E. C. Dudley.
Simon Flexner.
Chas. H. Frazier.
R. H. Fitz.
W. E. Fischel.
C. M. Green.
Chas. Lyman Greene.
Ramon Guiteras.
H. A. Hare.
L. Hektoen.
W. H. Howell.
Edward Jackson.
E. G. Janeway.
A. Jacobi.
C. G. Jennings.
George B. Johnson.
W. W. Keen.
Howard A. Kelly.
Chas. Kollock.
L. S. McMurtry.
James H. McBride.
A. T. McCormack.
K. A. J. Mackenzie.
John Herr Musser.
J. B. Murphy.
R. Matas.
Chas. S. Minot.
Robt. M. O'Reilly.
William Osler.
Chas. Powers.
W. F. R. Phillips.
B. Alexander Randall.
J. B. Roberts.
W. L. Rodman.
M. H. Richardson.
C. C. Rice.
Chas. A. L. Reed.
Presley M. Rixey.
H. M. Sherman.
Frederick C. Shattuck.
George H. Simmons.
Wm. G. Spiller.
Chas. G. Stockton.
Geo. Sternberg.
E. L. Trudeau.
Victor Vaughan.
John A. Witherspoon.
J. Collins Warren.
J. C. Webster.
Wm. H. Welch.
John A. Wyeth.
Horatio C. Wood.
Walter Wyman.

At a meeting held in St. Louis, September, 1904, the undersigned was elected Chairman, and Dr. Ramon Guiteras of New York, Secretary. The Chairman was empowered to appoint an Executive Committee of five, namely, Keen, Pennsylvania; Osler, Maryland; Shattuck, Massachusetts; Jacobi, New York, and Billings, Illinois.

The committee has been in correspondence with the committee of the congress, and has urged from time to time men selected by the parent committee to take part in the congress. The committee corresponded with the constituent organizations of the Congress of Physicians and Surgeons, and, as has been customary, seven of these societies have contributed $25 toward the expense of the committee. They have also appointed delegates to the congress.

The President-elect, Dr. McMurtry, will report the names of the delegates from this Association to the congress at its meeting.

The committee in session at St. Louis suggested men to prepare papers at the invitation of the Lisbon committee. They were forwarded to this committee. The official bulletins have announced their names from time to time.

We have at present a few very attractive papers, which cover the subjects for special discussion at the congress. These are: "Portable Ration on the March," by Dr. L. A. Seaman of New York; "The Scientific Proofs at Present of the Parasitic Nature of Neoplasms, Especially Cancer," by Dr. Harvey Gaylord of Buffalo; "The Choice of Anesthesia in the Extraction of Teeth," by Dr. J. H. Hasbrook of New York; "Septic Peritoneal Infections, Classification and Treatment," by Dr. J. B. Murphy of Chicago; "Penal Reform," by Dr. A. M. MacDonald of New York; "The Etiology and Prophylaxis of Yellow Fever," by Colonel Gorgas of the Canal Zone, Panama, and "The Status of the Hospital Ship in War," by Medical Director J. C. Wise.

A number of men are arranging excursion parties to go to the congress. Among these are Dr. Fassett of St. Joseph and Dr. Whitmore of New York. Any one writing to the secretary regarding transportation will receive a card referring him to Thomas Cook & Son.

The secretary writes that most of the steps have now been taken toward obtaining representation from this country before the congress. It now remains to send repeated communications to the journals of this country, giving them all the news, and requesting that scientific communications be referred to the secretary of the committee. Therefore, from the first of July the principal work will be the rounding up of the representatives and the spreading of the propaganda for the congress.

The committee recommends that the Trustees be granted power to contribute $100 to the committee, and that the House of Delegates consider whether in conjunction with other organizations the congress be invited to meet in this country in 1909. All of which is respectfully submitted.

J. H. Musser, Chairman.

Dr. Billings, Illinois, moved that the report of President Musser be accepted; that the House of Delegates recommend that the Board of Trustees appropriate one hundred dollars for the expenses of the American committee. Seconded and carried.

To Invite International Medical Congress for 1909.

In the same connection, Dr. Billings moved that the committee be requested by the House of Delegates, in conjunction with other medical organizations, to invite the congress to meet in America in 1909. Seconded by Dr. Wells and carried.

Missouri Resolutions on Secret Nostrums.

REFERRED TO COMMITTEE. (See page 276.)

Dr. Dorsett, Missouri, under "New Business," presented a resolution from the Missouri State Medical Association as follows:

Gentlemen:—At the last meeting of the Missouri State Medical Association, held at Excelsior Springs, Mo., April 16 to 18, this year, the following resolution was passed:

Resolved, That the three delegates of the Missouri State Medical Association to the American Medical Association be appointed a committee to prepare a resolution embodying the sentiments of a paper read by Dr. William G. Moore of St. Louis, entitled "The Present Status of Therapeutics."

This paper dealt with the subject as its title signifies, and drew attention to the fact that many of the remedies now used in the daily practice of the vast majority of the practitioners of this country, were of the so-called proprietary kind, the exact composition of which is unknown, save to the manufacturer of the remedy: and that the practitioner thus using such a remedy lowers the dignity of his profession.

Again, the responsibility of the profession is shown in the license allowed medical journals, which are absolutely their creatures and should be under their control, to advertise these remedies, not only in their advertising pages, but also by reading notices scattered throughout their columns.

Therefore, the delegates of the Missouri State Medical Association respectfully present the following:

Whereas, The majority of the so-called proprietary remedies are secret nostrums whose formulæ are unknown to the medical profession; and

Whereas, The use of such remedies stifles investigation of rational therapeutics and lowers the standard of our practice to mere empiricism; and

Whereas, The medical journals, the creatures of our profession, are filled with advertisements of these nostrums enlisting the attention of the unwary practitioner and resulting in enriching the manufacturer and defrauding the unsuspecting patient; therefore, be it

Resolved, That it is the sense of this body that the use of these remedies by members of the American Medical Association is reprehensible and that these advertisements should not appear in reputable medical journals.

Walter B. Dorsett,
A. R. Kieffer.

Dr. Jones, California, moved the adoption of the resolution. Seconded.

Dr. Bacon, Illinois, moved as an amendment that the resolution be referred to the Committee on Reports of Officers. Seconded by Dr. Harris, New York.

Dr. Jones, California, as the mover of the original motion, asked whether the resolution would be referred by this committee to the House of Delegates before the house adjourned at this session, so that it might be considered by the House of Delegates.

The President replied that this was the full understanding.

Dr. Jones then accepted the amendment to refer the matter to the Committee on Reports of Officers. (See page 276.)

The motion as amended was then put and carried.

Asks That Formulæ Appear in Every Ad.

Dr. Jones, California, moved that the House of Delegates instruct the Board of Trustees to abide by the rule which it adopted in 1895, and in 1900, to the effect that no advertisement of a remedy shall be printed in the pages of The Journal unless the formula, giving the quantities of the active ingredients of each dose, be stated, with each insertion of that advertisement. Seconded by Dr. Sanders.

On motion of Dr. Harris, New York, this resolution was referred to the Committee on Reports of Officers. (See p. 276.)

Report of Trustees Referred to Committee.

Dr. Kober, District of Columbia, moved that the report of the Board of Trustees which, he understood, was printed, but not here for distribution, be turned over to the Committee on Reports of Officers, so as to be predigested by that committee and be taken up to-morrow.

Seconded and carried.

On motion, the House of Delegates adjourned until 2 p. m. Tuesday, to meet in the Atkinson School Building.

Third Meeting—Tuesday, July 11.

The House of Delegates met at 2:20 p. m. and was called to order by President McMurtry.

The President, in assuming the duties of the chair, thanked the house very heartily for the honor that he felt in assuming such a high position, and said that he would not make any formal address on this occasion. He craved the indulgence of the members in discharging his duties, and said he would endeavor to facilitate the transaction of business to the best of his ability and impartially to decide any questions that were presented. But he bespoke the indulgence of the members and their consideration in the discharge of the duties, to which he was unaccustomed.

The Secretary then read the minutes of the previous meeting and they were approved.

Report of the Board of Trustees

For the Year Ending Dec. 31, 1904.

REPORT REFERRED TO COMMITTEE. (See page 276.)

The President called for the report of the Board of Trustees, which was read by Dr. T. J. Happel, Chairman, as follows:

To the Officers, Members, and House of Delegates of the American Medical Association:

As required by the Constitution and By-Laws, we submit the following report of the financial condition of the Association, and trust that it may give you a clear understanding of the business portion of our organization. We commend this report to your careful consideration in order that you may know what the board, as your financial agent, has been attempting to do and how much or how little it has accomplished.

The business of the Association has grown to such a magnitude that we have for the past several years deemed it best to employ regularly licensed accountants to go carefully through all books, accounts and vouchers of the different employes in The Journal office, comparing all entries, and then submitting to us the result of their work, which we pass on. We present you this report in full as made by the Investors Audit Company of Chicago.

Exhibit A. Balance sheet of Dec. 31, 1904.

Exhibit B. Revenue account for the year ending Dec. 31, 1904.

Exhibit C. Disposition of the net revenue for the year ending Dec. 31, 1904.

Exhibit D. Report of the Treasurer Dec. 31, 1904.

Exhibit E. Further comparisons showing financial conditions as compared with 1903.

This last, Exhibit E, is not the work of the Audit Company, but consists of comparisons which we have ourselves instituted in order that you might have a clearer insight into the progress of your matters.

The following is a copy of the Audit Company's report:

The Investors Audit Company.

Chicago, Jan. 23, 1905.

To the Board of Trustees of the
American Medical Association, Chicago.

Gentlemen:

In accordance with your instructions, we have examined the books and vouchers of the American Medical Association for the year ending Dec. 31, 1904, and beg to hand you herewith the following statements:

Balance sheet as at Dec. 31, 1904.

Revenue account for the year ending Dec. 31, 1904.

Disposition of net revenue for the year ending Dec. 31, 1904.

We desire to call your attention to the fact that the new building of the Association, machinery and the furniture and fixtures have been depreciated by 10 per cent. of the book value at the end of the fiscal year. This rate of depreciation has been charged for some years past, and it has naturally had the effect of reducing the book value of the buildings especially, by a greater amount than is usual in the case of buildings of such substantial construction as the one owned by the Association. We are inclined to approve generally of the policy of heavily depreciating property of this nature, but nevertheless it is possible to be over-conservative in matters of this kind, and we would suggest that the amounts of depreciation to be written off in future should be carefully considered. On the other hand, no charge for depreciation of dwelling houses owned by the Association has been made during the last two or three years, on the theory that the dwelling houses have been repaired and improved from year to year to an extent sufficient to maintain their value. The question of revaluing and charging depreciation on these dwelling houses might also be properly considered at this time.

Our audit has been along the same general lines as last year. We have examined properly approved and receipted vouchers for all expenditures, with the exception of some vouchers that have not yet been returned by the bank. We will visit the office of the Association at the end of this month and examine the vouchers returned, and report to you on any that might be missing or imperfect at that time.

During our visit we examined the cash on hand and verified the cash in banks by statements furnished by the bankers. We also examined the securities in possession of the Treasurer, traced all deposits into bank, checked additions of the cash books, and did such other detail work as we deemed necessary for the protection of the Association. The bookkeeping and office work appear to have been very well kept up.

With reference to the accounts written off to profit and loss from year to year as uncollectible, we think it would be well to transfer these to a suspense ledger, in order to lessen the danger of losing sight of them. We shall be glad to discuss the suggestion with you or Dr. Simmons at your convenience, and will also be glad to furnish you with any further information you may desire regarding these accounts.

Yours faithfully, E. M. Mills, Manager.

EXHIBIT A.

Balance Sheet, Dec. 31, 1904.

ASSETS.

Real estate and buildings	$92,403.46
Machinery	27,613.70
Furniture and fixtures	3,879.48
Library	1,008.50
Inventory of paper stock, type, metal and buttons	5,347.65
Bonds	40,199.38
Bills receivable	125.73
Accounts receivable	14,097.29
Cash on hand and in bank	28,795.04
	$213,470.23

LIABILITIES.

Accounts payable		$1,136.05
Section reports paid in advance		279.00
Surplus: Balance as at Jan. 1, 1904	$168,590.15	
Add: Net revenue for the year as per account annexed	43,465.03	212,055.18
		$213,470.23

EXHIBIT B.

REVENUE ACCOUNT FOR THE YEAR ENDING DEC. 31, 1904.

Inventory of paper stock, type and metal, as at Jan. 1, 1904		$5,562.00
PUBLICATION EXPENSES:		
Paper	$56,503.79	
Ink	2,225.58	
Type, metal and electros	2,695.80	
Salaries and pay roll	64,471.26	
News reporting and editorials	7,614.51	
Binding	473.33	
Machinery repairs and renewals	1,181.48	
Advertising and subscription commissions	7,287.08	
Postage, first and second class	18,224.06	
Power, fuel and light	2,667.28	
General expense	3,198.86	
Exchange	426.33	
Collection fees	1,448.81	
Factory supplies	1,550.31	
Office jobbing	1,820.70	
Advertising and transportation	1,058.65	
Express and cartage	921.06	
Miscellaneous losses, less recoveries	1,312.63	
Discount and interest	1,697.56	
Depreciation of machinery, furniture and fixtures	4,499.23	181,298.31
GENERAL EXPENSES:		
Organization	$8,180.34	
Association	7,411.56	
Medical legislation	436.42	
Buttons	1,134.26	
Buildings	1,803.02	
Insurance and taxes	1,568.69	
Depreciation of buildings	3,871.82	24,406.11
Net revenue for the year ending December 31, 1904		43,465.03
		$254,731.45

Advertising	$94,945.60
Subscriptions collected during year	60,742.22
Membership dues collected during year	74,123.04
Jobbing	11,299.79
Books	3,355.51
Buttons	854.65
Rents of Association properties	2,744.34
Miscellaneous receipts	158.65
Interest on bonds	1,160.00
Inventory of paper stock, type, metal and buttons, as at Dec. 31, 1904	5,347.65
	$254,731.45

EXHIBIT C.

DISPOSITION OF NET REVENUE FOR THE YEAR ENDING DEC. 31, 1904.

INCREASE IN ASSETS:		
Furniture and fixtures	$398.38	
Library	8.50	
Bonds	25,031.25	
Accounts receivable	4.295.82	
Cash	22,647.69	$52,381.64
DECREASE IN LIABILITIES:		
Section reports paid in advance	$176.00	$52,557.64
DECREASE IN ASSETS:		
Real estate and buildings	$3.760.25	
Machinery	3,090.00	
Inventories	214.35	
Bills receivable	1,046.59	$8,111.19
INCREASE IN LIABILITIES:		
Accounts payable	$981.42	$9,092.61
Net revenue for year		$43,465.03

EXHIBIT D.

REPORT OF THE TREASURER FOR THE YEAR ENDING DEC. 31, 1904.

RECEIPTS.

1904.	
June 25—Cash received from retiring treasurer	$16.225.50
July 1—Deposit check from editor of JOURNAL	10,000.00
July 1—Deposit coupons	380.00
Oct. 29—Deposit check from editor of JOURNAL	5,000.00
Oct. 29—Deposit coupons	200.00
Dec. 30—Deposit coupons	580.00
Interest on daily balance allowed by bank, 2 per cent.	108.74
	$32,494.24

DISBURSEMENTS.

1904.	
July 8—Cash by check paid Benj. T. Cahn for bonds purchased by Dr. M. L. Harris	$10,140.00

PROPERTY OF A. M. A. IN HANDS OF TREASURER, DEC. 31, 1904.

	Cost.	Par value.	
Dec. 31—Cash balance in bank			$22,354.24
5/1000 bonds Union P., 1st 4's	$5,207.50	$5,000.00	
5/1000 bonds Erie Ry. Co., 1st 4's	4.932.50	5,000.00	
5/1000 bonds Reading General, 1st 4's	4,870.00	5,000.00	
14/1000 bonds City of Chicago, 4's	15,168.13	14,000.00	
5/1000 bonds A., T. & S. Fe, 4's	4.988.75	5,000.00	
5/1000 bonds B. & O., 1st 4's	5,032.50	5,000.00	
	$40,199.38	$39,000.00	$39,000.00
Receiver's certificates of National Bank of Illnois for $6,794.31 on which 72 per cent. has been paid, leaving a balance of 28 per cent			1,902.41
Total			$63,256.65

Sixty-three thousand two hundred and fifty-six dollars and 30 cents was in the hands of Treasurer December 31, but since then the new improvements have been paid for.

EXHIBIT E.

Amount received from—	1904.	1903.	Gain.
Membership dues	$74,123.04	$63.237.48	$10,885.56
Subscriptions	60,742.22	52,567.38	8,174.84
Advertisements	94,945.60	88,533.65	6,411.95
Jobbing	11.299.79	8,669.11	2,630.68
Rents	2,744.34	2,185.00	559.34
Buttons	854.65	567.75	286.90
	$244,709.64	$215,760.37	$28,949.27

The real estate has already been referred to in the auditor's report and suggestions made in regard to deductions for depreciation in value. The entire property is kept in repair and its present real value is above what it cost, but business rules have been followed in charging off an annual depreciation, which, while it applies to machinery, furniture and fixtures, does not apply with such force to real estate properly cared for. All of the property is insured. We make no comparative statement of cash and bonds as this matter is set forth in the Treasurer's report.

BOOK-KEEPING.

The consolidation of all the book-keeping of the Association under one head has resulted in greatly simplifying the business methods of the Association. The dues are no longer collected by the Treasurer nor are any accounts kept by him against the individual member. Both members and subscribers pay directly to THE JOURNAL, and when the current funds are greater than is necessary the surplus is transferred to the Treasurer. By referring to Exhibit D, the Treasurer's report, you can see plainly how this is carried on. The Treasurer of the Association is no longer a collecting agent but a Treasurer "De jure et de facto." We would call your attention to one item in the Treasurer's report, "Interest on daily balance allowed by bank 2 per cent., $108.74," showing that the money the Association has in bank in the treasurer's account is drawing interest, not lying idle.

ADVERTISING.

The amount actually earned for 1904 for advertising was $94,945.60, an increase of $6,411.95, or about 7 per cent. over 1903, and nearly double that of 1900. These matters are referred to to show the rapid growth of the business of THE JOURNAL. This gain comes partly from increased rates, through increase of circulation and in spite of the exclusion from the pages of THE JOURNAL of more than $15,000.00 worth of advertisements carried in other reputable journals but which did not come up to our requirements. In the list of excluded advertisements were included not only medicines, but also sanitariums, medical colleges, etc. Less objectionable matter is offered each year.

THE JOURNAL has always made an effort to keep its pages free from objectionable advertisements and the Board of Trustees feel that this effort should be met by the profession in a proper spirit, one of assistance, not of captious criticism. In every case where complaints have been made in regard to the character of any advertisement appearing in THE JOURNAL, your board has found the Editor ever ready to lend a helping hand to purge its pages without violating any then existing contracts. We feel that we can say that there have appeared in the pages of THE JOURNAL fewer objectionable advertisements than in any other medical journal of a similar character published in this or in any other country.

COUNCIL ON PHARMACY AND CHEMISTRY.

The subject of ethical advertising has been before the Board at practically all of its meetings, and has always been both a vexed and an unsolvable one. In 1895 the Board of Trustees adopted a rule that no medicine should be advertised in THE JOURNAL that was secret in character, and that medicines whose composition would otherwise not be known should be accompanied with a formula sufficiently often to enable the reader to know its composition. The result has never been satisfactory. Too often the formulæ furnished were untrue and not seldom were direct misrepresentations, as has been proved by recent investigation.

It has long been realized that the conditions underlying the so-called proprietary medicine problem in this country are such that they require investigation on broader grounds than that of their relation to the advertising pages of THE JOURNAL. It is well known that there is a class of pseudo-manufacturing pharmacists, which in recent years has been rapidly increasing in number, that is supplying our profession with all kinds of nostrums for which the most extravagant claims are made. The average physician is not able to distinguish these manufacturers and their products from the reliable manufacturers and their preparations which are worthy of recognition. The number of nostrums has become so great that physicians are bewildered and, finding it impossible to distinguish between them and ethical preparations, hesitate about using any such products. In other countries either the government or an authoritative body, such as the French Academy of Medicine in France, controls such matters, but here nothing is done, and the result is that our profession is being humbugged by nostrum exploiters as much as is the public by the "patent medicine" manufacturers.

Undoubtedly this was realized by the Michigan State Medical Society, which in 1904 adopted resolutions asking that the Board of Trustees of the American Medical Association create a "clearing house commission which should provide for the analysis of medicinal substances of unknown composition and undetermined effects and should have analyses made in reliable laboratories, or should equip a suitable laboratory and should employ one or more competent experts." These resolutions were presented to the House of Delegates of the American Medical Association last year and were referred to the Board of Trustees, but no definite action was taken at that time.

Five years ago a proposition was made to create a body to be called a "Board of Control," to be composed of pharmacists and chemists, which should pass on all advertisements of medicines offered to THE JOURNAL, but at that time the plan was not considered feasible. At our February meeting, after giving the matter full consideration, the Board tentatively created a body to be called the Council on Pharmacy and Chemistry of the American Medical Association, combining in this the principle recommended by the Michigan State Medical Society with that underlying the proposition to create a "Board of Control" five years ago. It is not necessary to discuss the functions of this body, as these have been fully outlined in THE JOURNAL. It should be said, however, that this Council is something more than a body to which to refer matters regarding the ethical character of medicines offered for advertisements, as some seem to think. It is much more than this. The object is to investigate all medicinal preparations that are offered to the medical profession, and to approve those that come up to the standard. Some of the results of the investigations of the Council have already been published.

That its work may be of tangible and permanent value, it is proposed to publish in book form annually a list of the preparations not in the Pharmacopeia that are approved by the Council. Thus those who wish to use only medicine worthy of patronage and non-secret in character, and who have sufficient confidence in the council to accept the results of its work, will have a book of reference for information.

We believe that the Association is to be congratulated on having been able to secure the aid of such men as constitute the Council. We have reason to believe that if the American Medical Association requests it, a semi-official recognition of this council will be made by the Government. In fact, we now have the co-operation of the Bureau of Chemistry of the Department of Agriculture, permission having been given by the Secretary of Agriculture to the Chief of that Department to co-operate with the Council.

If you endorse this movement, the Board of Trustees propose during the coming year to consider plans and preliminary steps looking to the making of this council a permanent organization, the Board to present such plan to you at the next annual session.

REPORT OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

To the Board of Trustees of the American Medical Association:

Gentlemen:—At a meeting held in Pittsburg, February 11, the Council on Pharmacy and Chemistry was organized, George H. Simmons being elected chairman, and C. S. N. Hallberg, secretary.

Two sessions of the Council were held, and, after a thorough discussion the following rules were adopted tentatively:

RULES GOVERNING THE ADMISSION OF ARTICLES.

The following rules are adopted to guide the Council on Pharmacy and Chemistry of the American Medical Association:

(The term "article" shall mean any drug, chemical or preparation used in the treatment of disease.)

Rule 1.—No article will admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article, be furnished for publication. (Sufficient information should be supplied to permit the Council to verify the statements made regarding the article, and to determine its status from time to time.)

Rule 2.—No chemical compound will be admitted unless information be furnished regarding tests for identity, purity and strength, and, if a synthetic compound, the rational formula.

Rule 3.—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants, cosmetics, foods and mineral waters, except when advertised in an objectionable manner.

Rule 4.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to vaccines and antitoxins nor to advertising in medical journals, nor to literature distributed solely to physicians.)

Rule 5.—No article will be admitted or retained about which the manufacturer, or his agents, make false or misleading statements regarding the country of origin, raw material from which made, method of collection or preparation.

Rule 6.—No article will be admitted or retained about whose therapeutic value the manufacturer, or his agents, make unwarranted, exaggerated, or misleading statements.

Rule 7.—Labels on articles containing "heroic" or "poisonous" substances should show the amounts of each of such ingredients in a given quantity of the product.

Rule 8.—Every article should have a name or title indicative of its chemical composition or pharmaceutic character, in addition to its trade name, when such trade name is not sufficiently descriptive.

Rule 9.—If the name of an article is registered, or the label copyrighted, the date of registration should be furnished the council.

Rule 10.—If the article is patented—either process or product—the number and date of such patent or patents should be furnished. If patented in other countries, the name of each country in which patent is held should be supplied, together with the name under which the article is there registered.

While thus far the Council has seen no reason to change the above rules, they are still recognized by it as tentative, and may be modified, if further experience justifies such modification. Methods of procedure for conducting the work by correspondence similar to the method of the Committee on Revision of the U. S. Pharmacopeia were outlined. That the Council might work economically and effectively, it was divided into three committees, one on pharmacy, one on chemistry, and one on pharmacology.

The announcement containing the tentative rules, with the explanatory comments thereon, was transmitted on February 28 to the manufacturing pharmacists and chemists of the United States, and to others concerned. It was favorably received by nearly all the old established and important houses.

The work of the Council has been conducted through a weekly Bulletin issued every Thursday, twenty numbers having appeared up to July 1. Most of the time during the first ten or twelve weeks was taken up in discussing general principles, that is, the scope of the book "New and Non-Official Remedies," the style that should be adopted in describing articles, methods of procedure, etc. One of the most difficult questions was the attitude to that large class of pharmaceuticals, commonly called "mixtures." To recognize these would seem to defeat the very purpose of the movement, and yet to ignore all of them might appear to be unfair, since some of these mixtures are not objectionable *per se*—i. e., if the mystery and secrecy connected with them were eliminated and if they are not exploited to the public.

The following rules governing the admission of simple mixtures were finally agreed to:

(A) (a) If they represent real originality, and (b) if they promise to be a real improvement on similar existing articles, they shall be admitted.

(B) If they are already used so extensively that their rejection would constitute a real omission.

(C) If the mixture is practically or quite identical with a pharmacopeial or other easily accessible formulary preparation, it should be inserted in the book, under its trade name; but its description should be limited to the statements that it is essentially similar to such or such an official or semi-official formula, with such and such points of difference.

While a number of articles have been approved, their descriptive definitions have not yet been published, because of a desire to consider a large variety of articles before finally deciding on the best method of describing them. It is desired that so far as possible the descriptive matter shall be uniform and of as much benefit as possible to the physicians. Among the articles under investigation are the tasteless or so-called fat-free cod liver oil preparations, and the Council regrets to say that on analysis and investigation some of these are not what they are represented to be. Many interesting facts have already developed, and we feel more than ever the necessity of making haste slowly, in order that no injustice be done, but that at the same time the facts, as far as they can be ascertained, may be given to the medical profession.

The Council understands that its function is to investigate medicinal articles offered to the profession, approving those that comply with just and reasonable standards. Nevertheless, when it finds conditions that are destructive alike to scientific medicine and to pharmacy, it believes it to be its duty to disclose such conditions to the medical profession. Acting on this principle it has already investigated certain acetanilid mixtures and published the results.

Since it is likely to take considerable time before all articles now in the market can be acted on, and since it would not be just to refuse eligible articles admission to the advertising pages of The Journal ad interim, the Council has appointed a subcommittee on advertisements, consisting of three members with whom the management of The Journal confers regarding advertisements of medicines, not yet approved, offered to The Journal.

The Council realizes the difficulties connected with the problem it has undertaken to solve and asks, through your board, the co-operation of the medical profession of the United States. The Council desires to suggest that it would be of great advantage if it could obtain the co-operation of physicians connected with large hospitals so that clinical tests may be made as occasion requires. To thoroughly carry out the work, the Council believes that the therapeutic claims made regarding certain products should be investigated clinically by those who are in a position to conduct such investigations. The Council also believes that a central chemical laboratory in which preliminary tests can be made would be of great advantage. The Council regrets to have lost the active help of one member, Dr. Cushny of Ann Arbor, who has accepted a position in the medical department of the University of London. The Council took the liberty of making him a corresponding member, and as such he will continue to co-operate with the Council.

C. Lewis Diehl,
C. S. N. Hallberg,
R. A. Hatcher,
L. F. Kebler,
J. H. Long,
F. G. Novy,
W. A. Puckner,
S. P. Sadtler,
J. O. Schlotterbeck,
G. H. Simmons,
Torald Sollmann,
Julius Stieglitz,
M. I. Wilbert,
H. W. Wiley.

CIRCULATION.

The regular weekly issue of The Journal of the American Medical Association from Jan 2, 1904, to Dec. 31, 1904, inclusive, 53 issues, was as follows:

1904.			1904.		
Weekly Edition.			June 4	32,200	
Jan. 2	30,460		June 11	31,157	
Jan. 9	30,764		June 18	31,140	
Jan. 16	30,725		June 25	31,800	
Jan. 23	30,475				126,297
Jan. 30	30,632		*Weekly Edition.*		
		153,056	July 2	31,400	
Feb. 6	30,700		July 9	31,200	
Feb. 13	30,700		July 16	31,300	
Feb. 20	30,737		July 23	31,420	
Feb. 27	30,876		July 30	31,379	
		123,013			156,699
March 5	30,700		Aug. 6	31,305	
March 12	30,755		Aug. 13	34,000	
March 19	31,161		Aug. 20	31,387	
March 26	30,737		Aug. 27	31,441	
		123,353			128,133
April 2	30,751		Sept. 3	34,553	
April 9	30,750		Sept. 10	34,587	
April 16	30,683		Sept. 17	33,500	
April 23	30,600		Sept. 24	33,481	
April 20	38,000				136,121
		160,784	Oct. 1	35,035	
May 7	30,706		Oct. 8	35,170	
May 14	30,955		Oct. 15	35,043	
May 21	30,945		Oct. 22	35,080	
May 28	30,950		Oct. 29	35,845	
		123,556			176,173
Nov. 5	35,595		Dec. 3	33,615	
Nov. 12	34,059		Dec. 10	34,511	
Nov. 19	35,154		Dec. 17	34,628	
Nov. 26	34,596		Dec. 24	34,044	
		139,404	Dec. 31	35,015	
					171,813
Grand Total		1,718,402	Weekly average		32,423

The total number of copies issued during 1904 was 1,718,402.

The total number of copies issued during 1903 was 1,487,980.

This is an increase of 230,422 or 15½ per cent.

The following is a detailed count of the mailing list of members and subscribers by states on Jan. 1, 1905. It also indicates the gains and losses in each state for 1904. Copies to the U. S. Army, Marine-Hospital Service, etc., omitted.

State.	Members.	Subscribers.	Totals.	Gain for Year.	Loss for Year.
Alabama	205	133	338	...	61
Arkansas	244	206	450	141	...
Arizona	22	42	64	3	...
Alaska	...	2	2	1	...
California	650	545	1,195	279	...
Colorado	338	200	538	1	...
Connecticut	279	158	437	122	...
Delaware	35	11	46	7	...
Dist. of Columbia	189	203	392	...	...
Florida	110	72	182	73	...
Georgia	236	167	403	43	...
Idaho	57	35	92	27	...
Illinois	1,622	1,719	3,341	298	...
Indiana	667	712	1,379	199	...
Indian Territory	46	99	145	...	1
Iowa	707	744	1,451	266	...
Kansas	208	381	589	44	...
Kentucky	400	336	736	98	...
Louisiana	402	272	674	112	...
Maine	151	127	278	135	...
Maryland	310	309	619	28	...
Massachusetts	695	481	1,176	232	...
Michigan	685	837	1,522	154	...
Minnesota	487	259	746	85	...
Missouri	538	768	1,306	101	...
Mississippi	204	183	387	85	...
Montana	74	56	130	13	...
Nebraska	315	267	582	165	...
New Hampshire	127	84	211	58	...
Nevada	12	24	36	5	...
New Jersey	477	219	696	129	...
New York	1,036	992	2,028	393	...
North Carolina	94	125	219	...	30
North Dakota	76	81	157	10	...
New Mexico	36	32	68	...	1
Ohio	1,073	782	1,855	68	...
Oklahoma	67	122	189	...	6
Oregon	125	113	238	19	...
Pennsylvania	1,951	952	2,903	687	...
Rhode Island	122	73	195	26	...
South Carolina	95	110	205	14	...
South Dakota	97	100	197	31	...
Tennessee	333	291	624	35	...
Texas	542	520	1,062	171	...
Utah	72	52	124	23	...
Vermont	118	62	180	52	...
Virginia	222	278	500	95	...
Washington	180	169	349	29	...
West Virginia	198	152	350	72	...
Wisconsin	546	459	1,005	108	...
Wyoming	22	29	51	9	...
Canada	9	133	142	21	...
Cuba	2	7	9	2	...
Hawaiian Islands	9	10	19	...	1
Mexico	12	28	40	5	...
Philippine Islands	15	14	29	14	...
Porto Rico	3	5	8	2	...

The figures below indicate the count of the mailing list Jan. 1, 1905, compared with that of Jan. 1, 1904.

	Jan. 1, 1904.	Jan. 1, 1905.
Copies to members	13,899	17,570
Copies to subscribers	14,674	15,698
Copies to exchanges	203	178
Copies to advertisers	321	248
Copies to medical colleges and libraries	102	98
Copies to subscription agents	88	90
	29,287	33,882

This indicates a net increase for the year 1904 over 1903 of 4,595, being a little more than 15.6 per cent.

The amount collected from subscribers during 1904 was $60,742.22.

The amount collected from subscribers during 1903 was $52,567.38.

This indicates an increase in collections of $8,174.84. It will be noted that the subscription department is credited with 15,698 names. Inasmuch as the well-established physician usually becomes a member of his county society and of the Association, and pays dues instead of subscription, the collections from subscriptions, proportionately, are very good.

It will be noted that there is a gain of 4,695 in members and subscribers for the year 1904 over 1903. There have been dropped from the membership list for various reasons, 942, and from the subscription list, 3,765. It will therefore be seen that nearly 8,500 new names have been placed on the mailing list during the past twelve months.

During 1904, 2,009 subscribers became members; hence were transferred from the subscription to the membership list. And as county societies are becoming more numerous, as well as increasing their membership, it is to be expected that each year a larger proportion of the subscribers will avail themselves of the opportunity of becoming members of the American Medical Association.

PERCENTAGE OF PHYSICIANS RECEIVING THE JOURNAL.

This table gives the number of physicians (based on Polk's and Standard directories) in 1904 in the United States, and the number receiving THE JOURNAL, and the percentage in each state. Copies to physicians in the U. S. Army, Marine-Hospital Service, etc., omitted.

State.	Physicians in State.	Number Receiving Journal	Approximate Per cent.
Alabama	2,114	338	15
Arkansas	2,382	450	19
Arizona	210	64	31
Alaska	55	2	4
California	3,921	1,195	30
Colorado	1,506	538	36
Connecticut	1,361	437	32
Delaware	227	46	20
District of Columbia	1,030	392	38
Florida	660	182	28
Georgia	2,769	403	15
Idaho	227	92	41
Illinois	8,517	3,341	39
Indiana	4,902	1,379	28
Indian Territory	801	145	18
Iowa	3,791	1,451	38
Kansas	2,566	589	23
Kentucky	3,387	737	22
Louisiana	1,462	674	44
Maine	1,229	278	23
Maryland	1,922	619	32
Massachusetts	5,150	1,176	23
Michigan	4,274	1,522	36
Minnesota	1.960	746	38
Missouri	6,089	1,306	21
Mississippi	1,663	387	23
Montana	356	130	37
Nebraska	1,647	582	35
New Hampshire	705	211	30
Nevada	84	36	43
New Jersey	2,302	696	30
New York	13,316	2.028	15
North Carolina	1,607	219	14
North Dakota	340	157	46
New Mexico	203	68	33
Ohio	8.112	1,855	23
Oklahoma	1,027	189	18
Oregon	692	238	34
Pennsylvania	9 714	2,903	30
Rhode Island	680	195	29
South Carolina	1,160	205	18
South Dakota	523	197	38
Tennessee	3,430	624	18
Texas	4.935	1,062	22
Utah	301	124	41
Vermont	701	180	26
Virginia	2.063	500	24
Washington	910	349	38
West Virginia	1.410	350	24
Wisconsin	2,500	1,005	40
Wyoming	133	51	38

We present below a table showing the numbers of members and subscribers for each year commencing with 1899, the time about which our present editor took charge of THE JOURNAL.

	Members.	Subscribers.
Jan. 1, 1899	7,997	2,453
Jan. 1, 1900	8,445	4,633
Jan. 1, 1901	9,841	8,339
Jan. 1, 1902	11,107	10,795
Jan. 1, 1903	12,553	12,378
Jan. 1, 1904	13,899	14,674
Jan. 1, 1905	17,570	15,698

It will be noticed from the table that, while there has been a slow and steady increase in the number of members, there has been a rapid increase in the number of subscribers.

The Board desires to emphasize a portion of the report made to you last year in Atlantic City and to do this we insert this report: The report presented by the Editor to your Board of Trustees reveals the fact that much increase in the membership and subscription lists has been the result of labors of soliciting agents. These agents visit the members of the profession and present the advantages of membership in the Association and the value of THE JOURNAL to them personally, and thus many members and subscribers have been secured. The attempt to increase the membership list by correspondence with the secretaries of county medical societies proved almost a complete failure. Occasionally one would respond, but as a rule they manifested little or no interest in the matter, even when offered a commission on the result of their work. This is not as it should have been. Every county medical society should be canvassed for members of the Association and subscribers to THE JOURNAL, and it should be the duty of the president and secretary to present their claims on the medical profession at least twice a year to their county medical societies. This should be the great source of increase of membership to the Association.

The work of organization, the result of which is the creation of new societies, makes more physicians eligible to membership, but it does not increase the number of those that actually become members until they are personally solicited, and the one who will do this is the one who is paid for it.

These tables show that we have a pretty fair percentage of the physicians of the country. We, therefore, can not expect to make the proportionate progress that we have made in the past. THE JOURNAL only appeals to the fairly well educated physician, and, while an increasing proportion of the members of the profession are gradually becoming of a higher standard, still the proportionate increase in our circulation can not be expected in the future.

We feel that the claims of THE JOURNAL are not presented as they should be to the members of the county medical societies. This is evidenced by the fact that the number of physicians who receive THE JOURNAL as compared with the whole number of physicians reported in the state, ranges from 14 per cent. in North Carolina and 15 per cent. in Alabama, Georgia and New York to 40 per cent. in Wisconsin, 41 per cent. in Idaho and Utah, 43 per cent. in Nevada, 44 per cent. in Louisiana and 46 per cent. in North Dakota. Certainly a greater number of physicians, than any of the percentages above given, need and will take THE JOURNAL if its claims are presented to them. Every individual member of the American Medical Association should feel it incumbent on him to be a quasi agent for its official organ and we would earnestly urge upon them the necessity for taking this matter in hand. The work must be entered on in earnest to accomplish the ends which our Editor has in view.

PAPER STOCK.

At the meeting of the House of Delegates at Atlantic City, questions were asked in regard to using a softer finished paper in THE JOURNAL so that it would be easier on the eyes. This is now being done. The Editor reports a change in the paper contract of this year from last. Eastern paper is now used, three grades being contracted for, a high machine finished, a super-calendered, and coated or enameled paper for fine halftones.

As you have noticed, the size of THE JOURNAL has been gradually increased, the total number of pages in the last volume being 2,118, exclusive of the advertising pages.

The following table gives the total number of copies of THE JOURNAL issued each year for the past seven years (the various items for 1898 being estimated), total number of pages, and amount of paper stock used in reams, and pounds:

	Total No. Copies.	Pages.	Reams.	Lbs. of Paper
1898	597,282	4,756	3,395	321,525
1899	710,950	5,382	4,832	461,420
1900	907,200	6,087	6,747	607,230
1901	1,146,575	6,510	9,052	814,680
1902	1,316,695	6,522	10,230	938,700
1903	1,487,980	6,348	12,368	1,113,100
1904	1,718,402	7,108	14,399	1,295,910

MACHINERY.

It is unnecessary to repeat the inventory of the machinery given in last year's report. The growth of The Journal business has shown the need of more machines with which to carry on its business promptly. The increase in the size of The Journal, with the demand for illustrations and insertions, have caused a change to a magazine form with a cover. This change demanded a covering machine which cost about $3,500.00. A folding machine, linotype machine, paper cutter, and other machinery have also recently been purchased (all of which have become absolutely necessary), at a cost of about $9,000.00.

CHANGE IN THE FORM OF THE JOURNAL.

Commencing October 1, the form of The Journal was changed from a saddle stitch to a side stitch, with cover; in other words, was made magazine shape. This was done at the time for the reason that we were compelled to enlarge by sixteen to thirty-two pages each week, and it was a physical impossibility with our facilities to do this under the old form.

The advantages, however, are many: It gives us an opportunity to use a soft-finished paper for the reading matter, making it more pleasing to the eye and more easily read. It gives an opportunity to use a supercalendered paper for the ordinary halftones, and put in any number of pages and put them in in practically any part of the book. It makes it possible to put in the finest coated paper at a smaller expense than with the old method of inserts, when specially fine illustrations are used: it gives us a chance to vary the number of pages with little inconvenience. Further advantages are that the cover protects The Journal and keeps it in better form on the office table, and that, when filed on the shelf, the number and date is visible on the center of the back, making it possible to find the number wanted at a glance.

BUILDING.

Within two years after the completion of our new building it was found that more room was needed. Three years previously when the plans for the building were adopted, it was supposed that the building would be sufficiently large to accommodate our plant for many years; yet within two years' time it was found to be too small, and recently The Journal has been gotten out with difficulty owing to cramped conditions. This, of course, is the result of the increase in The Journal, not only in circulation but in size. After a careful discussion of the various possibilities, it was concluded that the most satisfactory solution would be to extend the building to cover the back of the lot facing Indiana St., and to put on another story. Plans had been secured from an architect and bids received at our February meeting and at that time contracts were let. The additions have now been completed, except a slight amount of inside work yet to be finished.

These additions, when completed, will cost approximately $20,000.00, and this expenditure has been made without any sacrifice of the reserve fund of the Association. The addition gives us 50 per cent. more floor space, and it is believed we will have ample facilities for the work now being done and that which is contemplated. The building now is of four stories, besides a high, 16-foot basement, 40 feet wide, except the east 40 feet which is 34 feet wide, and 140 feet long.

HOUSES.

As is known, in addition to The Journal building, to which references have been made, the Association owns five residence houses, three fronting on Dearborn Ave., and a double house facing Indiana St. Those on Dearborn Ave. are rented at $60.00, $55.00, and $40.00 respectively, per month. They have needed but little repair and have been a source of steady income. The double house bought later has now been gotten in good condition, and rents for $130.00 per month.

It has been and will be the policy of your Board of Trustees to keep this property in good condition so that it may rent readily and profitably, aiding materially in meeting the interest on the amount invested in the entire property. Much of this work falls on the resident trustee, who, with the Editor, really acts as a committee on Journal property.

Having gone fully last year into the details of the property investments made by the Board, we do not deem it necessary at this point to repeat any of that part of our report. Suffice it to say that we feel sure that the fact that we are no longer forced to rent for our own use whatever we could get, but now own our own building, and rent to others the surplus space, which for the present we do not need; and as stated last year, the further fact that what we save by owning our own publishing house, and what we receive from rents amounts to about 6 per cent. on the capital invested, shows good business management.

INVESTMENTS.

We reported to you last year that the Association owns school bonds of the City of Chicago—par value $14,000.00—worth on the market $15,168.13, and in addition thereto 25 railroad bonds—par value $25,000.00—worth $25,031.28, making a total of $40,199.38. Since then we directed the resident trustee to invest $10,000 more in bonds. We wish to impress the fact that this fund should not be encroached on for any purpose. It should be kept as a reserve fund out of which to meet emergencies that may arise in the future. No business enterprise can long prosper which does not have a reserve fund. The amount of business done at The Journal office demands such a fund of not less than $150,000.00.

These bonds now on hand all draw 4 per cent. interest, so that you see that it is not a useless fund, but would at all times be furnishing some revenue to the Association.

APPROPRIATIONS.

In addition to the amount already mentioned as appropriated for the purchase of machinery and for the addition to The Journal building, your Board of Trustees, acceding to the request of the House of Delegates, in many matters made numerous appropriations, some of the more important of which are as follows:

The sum of $600.00 was set apart, $50.00 for each of the twelve sections, with which to defray all necessary expenses connected with their annual meeting. Stationery and printing will be done for them as formerly at The Journal office. No bills for printing done outside of The Journal office will be paid. Five hundred dollars was appropriated to cover all the expenses of the Scientific Exhibit.

An honorarium of $250.00, as asked for by the House of Delegates, was ordered paid to Dr. Frank B. Wynn as a mark of appreciation for services rendered in connection with that exhibit as the originator.

A sum not to exceed $500.00 was set apart for the use of the Committee on Scientific Research.

A sum not to exceed $300.00 was appropriated to the Committee on National Incorporation of which Dr. Joseph D. Bryant of New York is Chairman.

One thousand dollars was appropriated for the use of the Committee on National Legislation of which Dr. C. A. L. Reed is Chairman.

Two hundred dollars was set apart for the expense of the Exhibit of the Section on Hygiene and Sanitary Science at the Portland session.

A sufficient sum was appropriated to meet the expenses of the Council on Pharmacy and Chemistry.

A sum not to exceed $750.00 was appropriated to defray the expenses of the Council on Medical Education.

From the above it will be seen that a considerable sum has been set apart to advance the interests of the Association in addition to the amount needed for new machinery and the enlargement of the building. These amounts will probably consume all of the profits of The Journal office for the next year; hence other appropriations must be carefully safeguarded.

BONDS OF OFFICIALS.

As in all other business enterprises where much money is handled all of the officials having control of funds are under bonds, furnished at the expense of the Association by first class, solvent Bonding Companies.

BLUE BOOK AND DIRECTORY.

At your last meeting the Board recommended that you consent to the publication by The Journal, after proper correspondence with the secretaries of the state societies, and receiving their co-operation, of a directory of the members of the American Medical Association and of the state associations, by states, counties, etc. Correspondence was entered into with the officials of the various constituent associations, with the idea of getting this co-operation and publishing such a blue book during the spring of this year. Two difficulties were encountered, however. One was the fact that certain states would not be able to supply the information required until May, and in some instances June. The second difficulty, and one that could not be overcome, was the fact that owing to the lack of room in The Journal plant, it was impossible to undertake the mechanical part of the work until the new building was completed.

As will be remembered, in the report adopted by the Association at St. Paul, one of the objects to be accomplished in the near future was the publication by the Association of a complete directory of the registered physicians of the United States. At the last meeting of the Board of Trustees it was decided that the time had arrived for the publication of such a general directory. The firm of Geo. P. Englehard & Co., publishers of the Standard Directory, having made an offer to sell their directory on favorable terms, with all its good will, list of names, etc., the Resident Trustee and the Editor were authorized to enter into negotiations for the purchase of such directory, and if terms as laid down by the Board of Trustees could be secured, then the purchase was to be made. Such terms were secured and the Standard Directory has been bought by the Board of Trustees, subject to your approval. The Trustees believe that the terms on which they have obtained this directory are decidedly favorable, and make it possible for the Association to immediately publish a reliable and complete directory at a very greatly reduced first cost. Under these circumstances the Board recommends that the so-called blue book be not published, but instead of it the complete directory be published and that the names of members of the organization, i. e., members of the constituent associations and of their component branches, be printed in said directory in large type, and those of non-members in ordinary type.

NATIONAL INCORPORATION.

The Committee on National Incorporation presented to Congress a bill proposing to incorporate this Association with a National Charter. The effort was futile. The bill was soon made to read in such a way as to limit its rights and privileges to the District of Columbia, but your committee on National Incorporation will no doubt give you a detailed report on that subject.

If through Congress a charter can be obtained limited to the District of Columbia only in its rights and privileges, subject to change at any time as may be dictated by a partisan Congress, then it would be better to leave the matter of incorporation alone.

The property interests of the Association in the state of Illinois have now become too great to abandon our charter of incorporation in that state. Where our property interests are, there we should be domiciled. A home corporation, as a rule, gets more rights and privileges than does a foreign one. This is a matter to be viewed from a business standpoint alone. A District of Columbia charter will be no better than an Illinois charter, and would have to be registered as a foreign charter in that state, as would be the case with a charter granted by any state in the Union.

IN CONCLUSION.

We have tried to present to you in a succinct form a report of our stewardship for the past year. We are aware that we have been criticised, sometimes harshly, for our management of the business affairs of The Journal and the Association, but you constitute the court of arbitrament, and with this presentment of the case we leave the matter in your hands, asking you to join the Board in a vote of thanks to our Editor, Dr. Geo. H. Simmons.

Respectfully submitted,
M. L. Harris, Secretary,
E. E. Montgomery,
W. W. Grant,
H. L. E. Johnson,
W. H. Welch,
A. L. Wright,
Miles F. Porter,
Philip Marvel,
T. J. Happel, Chairman.

Michigan Resolutions on Medical Directory.

In connection with the report of the Board of Trustees, Dr. Eugene Smith, Michigan, presented resolutions from the Michigan State Medical Society relative to the publication of a medical directory by the American Medical Association. These resolutions are as follows:

> Whereas, It seems that the Trustees believe that it is desirable to publish a complete medical directory of the United States, notwithstanding the recommendations adopted at Atlantic City last year, which reads: "The Board recommends that the House of Delegates consent to the publication, by the Editor of The Journal, after proper correspondence with the secretaries of state societies, and receiving their co-operation, of a directory of the members of the American Medical Association and of the state associations, by states, counties, etc."
>
> *Resolved,* That this House of Delegates hereby instructs the Board of Trustees to confine the contemplated directory to a list of the members of the American Medical Association.
>
> *Resolved,* That they, the Board of Trustees, be instructed not to complete the contemplated purchase of the Medical Directory known as the Standard, or Engelhard's.

After reading the resolutions, Dr. Smith moved that the House of Delegates accept the resolutions and instructions contained therein.

Dr. Griffith, Missouri, moved that the report of the Board of Trustees and the resolutions offered by Dr. Smith be referred to the proper committee. Seconded.

Dr. Jones, California, made the point of order that the report of the Board of Trustees was referred by motion of yesterday to the Committee on Reports of Officers.

The Chairman ruled that the submission of the report of the Board of Trustees by its chairman was the question really to be considered.

Dr. Craig, Pennsylvania, moved that the amended report, as he understood there were some changes made in it, be accepted and referred to the Committee on Reports of Officers. Seconded.

After Dr. Griffith had withdrawn his motion, the motion of Dr. Craig was put and carried.

Council on Medical Education.

REPORT ACCEPTED AND REFERRED TO COMMITTEE. (See p. 278.)

The President called for the report of the Council on Medical Education, which was read by the chairman of that committee, Dr. Arthur D. Bevan, Illinois, as follows:

Mr. President and Members of the House of Delegates:

The Council on Medical Education desire to submit to you the following report:

During the year the Council, consisting of William T. Councilman of Boston, Victor C. Vaughan of Ann Arbor, Charles H. Frazier of Philadelphia, J. A. Witherspoon of Nashville, and Arthur D. Bevan, of Chicago, held three meetings, one in Philadelphia in December, one in Chicago in April, and one in Portland in May.

The transactions of the Philadelphia and Chicago meetings were reported in The Journal of the Association and a reprint is at the disposal of each delegate.

The Chicago meeting was a conference with delegates from the state and territorial licensing bodies, representatives from the associations of medical colleges from the government medical services, and men invited to represent colleges of liberal arts. This conference was regarded by the members of the council as a distinct success and augurs well for the future. Forty-two states and territories appointed delegates, the Army and the Public Health and Marine-Hospital Service sent representatives, committees of the Association of American Medical Colleges and the Southern Medical College Association were present, and a number of men representing colleges of liberal arts took part in the discussions by invitation. At this conference reports of sub-committees on preliminary education and curriculum were presented to furnish a basis for discussion. These reports are not to be regarded as final reports of the Council.

The general opinion of the Chicago conference seemed to be that such a body as the council, representing the American Medical Association, might be the nucleus about which could be drawn the other important bodies interested in elevating medical education. In this way could be brought together the representatives of the state and territorial examining and licensing boards, the government services, the medical schools and the schools of liberal arts in annual conference; and it was felt that by such united action much could be accomplished. Most of the state licensing bodies are anxious to learn and to execute the desires of the medical profession and to see established a body such as the Council on Medical Education of the American Medical Association, from whom they may obtain official expression of such desires.

It would seem most essential that the council work in close co-operation with the state and territorial examining and licensing boards. In order to do effective work the council must have a permanent organization, with permanent headquarters and permanent secretary. To this end the council, after careful consideration, recommends permanent headquarters in close touch with The Journal, and recommends to the trustees as permanent secretary Dr. George W. Webster, who has, as is well known, devoted much time and thought to the subject of the control and elevation of medical education, and we recommend that the trustees provide the necessary machinery to enable the permanent secretary to do effective work.

As a result of the year's study of the question of medical education the council desires to submit the following brief statement as to the position which it is believed the American Medical Association should take in regard to medical education.

1. One of the chief functions of the American Medical Association should be the elevation of medical education in this country and it should be its avowed purpose to secure throughout this country, within a reasonable time, as high a standard as that of any country in the world. Our position as a civilizing power and in commerce and arts and sciences demands this of American medicine.

2. The elevation from present conditions to the high standard desired must be gradually brought about in justice to all concerned and we would not at this time recommend too sweeping changes.

3. The ideal standard to be aimed at from our present viewpoint should consist of:

> a. Preliminary education sufficient to enable the candidate to enter our recognized universities, the passing upon such qualifications by the state authorities.
>
> b. A five year medical course, the first year of which should be devoted to physics, chemistry and biology, and such arrangements should be made that this year could be taken either in a school of liberal arts or in the medical school. Of the four years in pure medical work, the first two should be spent in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics and the specialties.
>
> c. A sixth year as an interne in a hospital or dispensary should then complete the medical course.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years, which is regarded as too old a period at which the young medical man should begin his life's work. It is obvious that this very desirable scheme of requirements can not be at once demanded or recommended. Under present conditions what requirements can the American Medical Association demand by reason of giving to them its official sanction? It would seem to the council that the following scheme is reasonable and could be made effective:

> a. A high school education or such education as will admit the student to our recognized universities. This requirement to be passed on by specially designated state authorities, such as the superintendent of public instruction or his representatives, and not by the faculty of the medical school.
>
> b. A four year course in a medical college giving at least a seven months' course, no two courses to be taken in the same year. This course to be approved by a conference between the Council on Medical Education and the state and territorial licensing boards and college authorities.
>
> c. The graduation from such an approved school should simply entitle the candidate to an examination before the state examining board.
>
> d. The passing before a state licensing board of a satisfactory examination and the securing of a license to practice.

It is not believed that the time is ripe for the discussion of reciprocity and the many other interesting and important subjects included in the broad question of medical education. The first step must be the general and unanimous acceptance of the broad general principles outlined.

It is believed that with the establishment of an efficient permanent headquarters, with an active secretary, that the influence of the American Medical Association can secure the general adoption of these requirements within a very short time.

We believe that it will require about two years to secure the general adoption of these requirements by state boards and medical schools, and we, therefore, recommend that the effort be made to make these requirements effective by January 1, 1908. We believe that the American Medical Association can do much toward making American medicine second to that of no country in the world.

We respectfully ask your approval of this report.

Arthur Dean Bevan, Chairman.
William T. Councilman,
Victor C. Vaughan,
Charles H. Frazier,
J. A. Witherspoon.

Dr. Wells, Illinois, moved that the report of the committee be accepted and referred to the Reference Committee on Medical Education. Seconded by Dr. McCormack and carried. (See page 278.)

Committee on Senn Medal.

REPORT ACCEPTED AND MEDAL AWARDED DR. YATES.

When the report of the Committee on Senn Medal was called for, Dr. Harris, Illinois, in the absence of the chairman of the committee, stated that he was asked by the chairman to present the report. The committee had awarded the Senn prize this year to the author of an article entitled "An Experimental Study of the Local Effects of Peritoneal Drainage." This article had been presented to the committee under the pseudonym of "Mehr Licht." The committee submitted the paper and sealed name of the author to the House of Delegates with the recommendation that the author be awarded the medal.

It was moved that the report of the committee be accepted and the prize awarded as recommended by the committee. Seconded and carried.

The President opened the sealed envelope containing the name of the author and stated that the prize had been awarded by the committee and approved by the House of Delegates to Dr. J. L. Yates, 710 Sedgwick street, Chicago. (Applause.)

Committee on National Incorporation.

REPORT REFERRED TO COMMITTEE. (See page 277.)

The next order was the report of the Committee on National Incorporation, which was read by the chairman, Dr. Joseph D. Bryant, New York, as follows:

To the Officers and Members of the House of Delegates of the American Medical Association.

Gentlemen:—It is with a keen sense of duty and regret that the members of the Committee on National Incorporation of the American Medical Association, by a Special Act of Congress, submit at this time a report to you expressive of their labors during the past year in the efforts to secure national incorporation, together with the results of these efforts and the prospective status of such incorporation, with recommendations relating thereto. As is well known to you already, this committee was appointed at the session of the Association in New Orleans in 1903. The committee was empowered "to get advice of the best legal talent in the United States as to whether or not the Association could be incorporated under an act of Congress and to report at the next annual session of the House of Delegates." In harmony with this resolution, the committee submitted to your consideration and action at the session of the Association in June, 1904, two reports—a preliminary and a final report, the former being printed and the latter being read by the chairman of the committee in due order of business in the House of Delegates. But one (the preliminary report previously forwarded to the Secretary) appeared in The Journal of the A. M. A. In view of the fact that the unpublished final report was the one adopted by your honorable body, we are now prompted to present again their salient features of difference. The words "establish and maintain in the District of Columbia" of the preliminary report (The Journal, A. M. A., June 11, 1904, p. 1582) were eliminated and the words "anywhere in the United States" were introduced in lieu thereof. In both instances, however, it was provided that *corporate* business could be transacted anywhere in the United States. The difference between these propositions is evident. One contemplated incorporation in the District of Columbia, with the power of doing business anywhere in the United States; the other contemplated incorporation in the United States, with, of course, a similar power.

The final report was accepted unanimously and referred to a joint committee for consideration and recommendation for final action, made up by the Committee on National Legislation, the Reference Committee on Medical Legislation, and the Board of Trustees. June 7 the joint committee, through its Chairman, Dr. T. J. Happel, submitted the following resolutions, which were adopted:

Resolved, That the Board of Trustees be and hereby is instructed to make such changes in the present charter as may become necessary or desirable, owing to changes which have been made in the Constitution and By-Laws, and

Resolved, That the Committee on National Incorporation, together with the Board of Trustees, be and hereby is instructed to secure from Congress, is possible, a suitable and desirable charter.

Immediately after the adoption of the foregoing resolutions, the following resolution, offered by Dr. John B. Roberts of Philadelphia, was likewise adopted:

Resolved, That the officers and the members of the House of Delegates of the American Medical Association now in session at Atlantic City, do hereby pledge their loyal support and earnest efforts in aid of securing national incorporation of the American Medical Association by a special act of Congress.

In response to this resolution, the officers and members of the House of Delegates then promptly petitioned Congress for such incorporation; and to each member of the House of Delegates was given a like petition for signature by the members of the Association, within his jurisdiction, with the request to forward the same to the Chairman of the Committee on National Incorporation as soon as suitably signed. About the middle of August, 1904, the following petition, embodying the charter as then amended by Judge Ray, and addressed to the judiciary committees of the House and the Senate, was sent by the Committee of Incorporation to the officers and members of the House of Delegates, requesting the signatures of members of the Association and of other physicians, and a prompt return of the petition to the chairman of the Committee on National Incorporation for compilation and presentation to Congress early in the fall.

THE PETITION.

Gentlemen of the Judiciary Committee of the Senate and House of Representatives of the United States of America:

We, the undersigned, members of the medical profession throughout the United States, most respectfully request the speedy enactment of the following proposed bill incorporating the American Medical Association:

Be it enacted by the Senate and House of Representatives in Congress assembled:

Section 1. That Robert M. O'Reilly, M.D., Presley M. Rixey, M.D., Walter Wyman, M.D., E. H. Gregory, M.D., Henry O. Marcy, M.D., Nicholas Senn, M.D., George M. Sternberg, M.D., J. M. Matthews, M.D., W. W. Keen, M.D., C. A. L. Reed, M.D., J. A. Wyeth, M.D., Frank Billings, M.D., J. H. Musser, M.D., T. J. Happel, M.D., Miles F. Porter, M.D., E. E. Montgomery, M.D., W. W. Grant, M.D., H. L. E. Johnson, M.D., A. J. Wright, M.D., William H. Welch, M.D., M. L. Harris, M.D., and Philip Marvel, M.D., and their successors, are hereby made and constituted a body politic and corporate by the name American Medical Association, with perpetual succession and power to take, for the purposes of its incorporation, by devise, bequest, grant, gift, purchase or otherwise, and hold or convey both real and personal property, and transact business, anywhere within the United States.

Sec. 2. The object and purpose of such corporation shall be to promote the science and art of medicine throughout the United States.

Sec. 3. Such corporation shall have power to make by-laws, rules and regulations, and choose officers for its government and the attainment of its purposes.

The proposed charter declares the purposes of the Association. It is non-political, and has for its main object the promotion of medical science which can best be accomplished by unity of purpose and action. Such association will bring together annually the best and most accomplished medical men of the Nation and prove, we believe, beneficial to all the citizens of our country.

The following letter to the chairman of the committee from Judge Ray relating to the above change in the phraseology of charter is here introduced:

August 13, 1904.

Dear Dr. Bryant:—You will notice that I have made some changes in the wording of the proposed National Charter of the American Medical Association. But no change is made that will any way affect its efficiency. In fact, it is broader and more comprehensive as it is.

The object and purpose of the corporation is to promote the science of medicine throughout the United States. This it may do in any manner not condemned by law. Then the charter should not undertake to say how or by what means the science of medicine is to be promoted by this society, as it may adopt any and all means when the power is granted in general terms. If the charter specifies at all, then what is not included is excluded, hence, there should be no specification of the means to be used. You will note that the language is explicit that property, both real and personal, may be owned, etc., anywhere in the United States and that the corporation may transact its business anywhere within the Union.

Very sincerely yours, Geo. W. Ray.

Occasionally appeals by the chairman of the Committee on Incorporation to the members of the House of Delegates of the respective states were made, and in most instances received prompt and productive response. As the result of these efforts thirty-two states, the District of Columbia and Indian Territory responded in favor of incorporation, submitting a grand total of signatures of between six and seven thousand, of which Pennsylvania provided the largest number (about 1,100), while Ohio, New Jersey, Michigan, Colorado, Kentucky and Tennessee followed in consecutive order. It is both just and proper to say at this time that no state or territory, whether represented by many, few or no signatures, expressed disfavor of national incorporation.

About the first of January, and in accordance with a previous understanding with Dr. C. A. L. Reed, the efficient chairman of the Committee on National Legislation, Dr. Reed was requested to exercise the influence of his committee in aid of national incorporation. The request was promptly heeded and resulted in securing about four thousand additional signatures to the request for incorporation, making in all between 10,000 and 11,000 petitioners in behalf of this request. The response to this committee's request on the part of the Committee on National Legislation was prompt, comparatively prolific and likewise persistent, extending somewhat beyond the time of adjournment of Congress. For this significant aid to the efforts of incorporation the special Committee on Incorporation extends its grateful appreciation.

THE ORIGINAL BILL.

Jan. 8, 1905, the following bill (see the petition above) was introduced into the House. The introduction of the name of Lewis S. McMurtry, M.D., the President-elect of the Association, and the expression in full of the titles and the residences of the incorporators comprise the only differences between the petition as freely circulated by the Committee on Incorporation and the Bill of Incorporation as introduced at the above date.

The seeming delay in the introduction was occasioned by special advice opposed to an earlier period of action, emphasized not a little because of the previous paucity of the signatures favoring incorporation.

Fifty-eighth Congress, Third Session. Sub Committee No. 1.
H. R. 17335.
In the House of Representatives, Jan. 9, 1905.

Mr. Dwight introduced the following bill, which was referred to the Committee on the Judiciary and ordered to be printed:

A bill to incorporate the American Medical Association:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Robert M. O'Reilly, doctor of medicine, Washington, District of Columbia; Presley M. Rixey, doctor of medicine Washington, District of Columbia; Walter Wyman, doctor of medicine, Washington, District of Columbia; E. H. Gregory, doctor of medicine, Saint Louis, Missouri; Henry O. Marcy, doctor of medicine, Boston, Massachusetts; Nicholas Senn, doctor of medicine, Chicago, Illinois; George M. Sternberg, doctor of medicine, Washington, District of Columbia; J. M. Matthews, doctor of medicine, Louisville, Kentucky; W. W. Keen, doctor of medicine, Philadelphia, Pennsylvania; C. A. L. Reed, doctor of medicine, Cincinnati, Ohio; J. A. Wyeth, doctor of medicine, New York, New York; Frank Billings, doctor of medicine, Chicago, Illinois; J. H. Musser, doctor of medicine, Philadelphia, Pennsylvania; T. J. Happel, doctor of medicine, Trenton, Tennessee; Miles F. Porter, doctor of medicine, Fort Wayne, Indiana; E. E. Montgomery, doctor of medicine, Philadelphia, Pennsylvania; W. W. Grant, doctor of medicine, Denver, Colorado; H. L. E. Johnson, doctor of medicine, Washington, District of Columbia; A. L. Wright, doctor of medicine, Carroll, Iowa; William H. Welch, doctor of medicine, Baltimore, Maryland; M. L. Harris, doctor of medicine, Chicago, Illinois; Philip Marvel, doctor of medicine, Atlantic City, New Jersey, and Lewis S. McMurtry, doctor of medicine, Louisville, Kentucky, and their successors, and those who may be associated with them, are hereby made and constituted a body politic and corporate by the name American Medical Association with perpetual succession and power to take, for the purposes of its incorporation, by devise, bequest, grant, gift, purchase, or otherwise, and hold or convey, both real and personal property and transact business anywhere within the United States.

Sec. 2. That the object and purpose of such corporation shall be to promote the science and art of medicine and the public health throughout the United States.

Sec. 3. That such corporation shall have power to make by-laws, rules, and regulations, and choose officers for its government and the attainment of its purposes.

After introduction of this bill on national incorporation it was referred to Subcommittee 1 of the judiciary committee of the House.

THE BILL AS FAVORABLY REPORTED.

After considerable delay and not a little contention for the retaining of the much-to-be-desired privilege of "doing business anywhere in the United States," the bill as introduced (being regarded as unconstitutional by the subcommittee in charge) was amended (interpolation of "District of Columbia" and elimination of "United States") in the subcommittee and reported as follows:

Fifty-eighth Congress, Third Session. Sub-Committee, No. 1.
In the House of Representatives, Jan. 9, 1905.

Mr. Dwight introduced the following bill, which was referred to the Committee on the Judiciary and ordered to be printed:

A bill to incorporate the American Medical Association:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Robert M. O'Reilly, doctor of medicine, Washington, District of Columbia; Presley M. Rixey, doctor of medicine, Washington, District of Columbia; Walter Wyman, doctor of medicine, Washington, District of Columbia; E. H. Gregory, doctor of medicine, Saint Louis, Missouri; Henry O. Marcy, doctor of medicine, Boston, Massachusetts; Nicholas Senn, doctor of medicine, Chicago, Illinois; George M. Sternberg, doctor of medicine, Washington, District of Columbia; J. M. Matthews, doctor of medicine, Louisville, Kentucky; W. W. Keen, doctor of medicine, Philadelphia, Pennsylvania; C. A. L. Reed, doctor of medicine, Cincinnati, Ohio; J. A. Wyeth, doctor of medicine, New York, New York; Frank Billings, doctor of medicine, Chicago, Illinois; J. H. Musser, doctor of medicine, Philadelphia, Pennsylvania; T. J. Happel, doctor of medicine, Trenton, Tennessee; Miles F. Porter, doctor of medicine, Fort Wayne, Indiana; E. E. Montgomery, doctor of medicine, Philadelphia, Pennsylvania; W. W. Grant, doctor of medicine, Denver, Colorado; H. L. E. Johnson, doctor of medicine, Washington, District of Columbia; A. L. Wright, doctor of medicine, Carroll, Iowa; William H. Welch, doctor of medicine, Baltimore, Maryland; M. L. Harris, doctor of medicine, Chicago, Illinois; Philip Marvel, doctor of medicine, Atlantic City, New Jersey, and Lewis S. McMurtry, doctor of medicine, Louisville, Kentucky, and their successors, and those who may be associated with them, are hereby made and constituted a body politic and corporate within the *District of Columbia*, by the name American Medical Association, with perpetual succession and power to take, for the purposes of its incorporation, by devise, bequest, grant, gift, or otherwise, and hold or convey, both real and personal property and transact business.

Sect. 2. That the object and purpose of such corporation shall be to promote the science and art of medicine and the public health.

Sec. 3. That such corporation shall have power to make by-laws, rules and regulations, and choose officers for its government and the attainment of its purposes.

Sec. 4. That this Act shall be subject to alterations or repeal by Congress.

As a bill of this obviously local character was not desired, measures were taken to retain it in committee pending an effort to enlist the support of the Senate in a bill more in conformity with our understanding of the desires of the members of the Association. Fortunately Senator McComas of Maryland, who was appealed to by our friends in Washington, gave to us an attentive ear and also prompt, earnest and efficient support. February 2 the original bill as introduced into the House (see above) was introduced into the Senate by Senator McComas, called thereafter the McComas Senate bill No. 7040.

This bill was a little later amended by Senator McComas by the introduction of a property clause and the elimination from its phraseology of all reference to locality of incorporation. Also abbreviated statements of the addresses of the incorporators are noted.

The announcement to the chairman of the Committee on Incorporation, by telegraph, of the proposed modification of the McComas bill by introduction of a property clause, along with a request to indicate the amount of real and personal property which might be legally held in this connection by the Association, raised at once new and important questions not falling within the knowledge and purview of the committee. With the idea of gaining enlightenment and support in this matter, the chairman hastened to Washington, stopping at Baltimore en route, to consult with Trustee Dr. Wm. H. Welch, of that city. The difficulty of stipulating a definite legal sum, in the present prosperous condition of the Association, and the rapid increase in values, together with the apprehension that a safe legal stipulation might hinder the obtaining of incorporation, prompted both Dr. Welch and the chairman to think it wiser to omit all mention of any amount, if possible, and, if not, to place the figure at not less than $500,000. It was found, however, on arriving at Washington, that, because of the exigencies of the occasion, a five-hundred-thousand-dollar limit had been already introduced into the bill, which action was promptly sanctioned by your chairman.

It is only necessary to add that *the amended Senate bill* was not reported from the judiciary committee (therefore not printed) because of the shortness of the time at its disposal (short session), the pressing demands of more important legislative business and a desire for further consideration of this measure on the part of some members of the committee. The author of the bill (Senator McComas) labored earnestly for its adoption and expressed belief in its final success.

Thus ends the first lesson in the attempt to secure national incorporation of the American Medical Association by a special act of Congress.

The belief of the unconstitutionality of the bill on the part of the judiciary subcommittee of the House caused the failure to secure the approval of the judiciary committee of that body. Yet Judge Ray, who but a short time before was the chairman of the judiciary committee, and on which he had served for many years, giving during the last nine years thereof his attention to the constitutional questions coming before the committee, unhesitatingly declares in favor of the constitutionality of the measure.

Some members of the judiciary committee labored earnestly to secure approval of the bill as originally presented. Others declared that all bills of this character are unconstitutional and expressed strong disapproval of measures of this nature that had already become laws. Prominent members of the judiciary committee of the Senate approved the passage of the measure as amended by Senator McComas, others wished further time for thought, especially regarding the import of the high figure of property holdings.

Your attention is respectively called to the fact that bills of four forms of charters of incorporation have been brought to your attention.

1. A charter for national incorporation *within the District of Columbia*, with permission to transact business "within the United States" (see preliminary report of committee, THE JOURNAL, A. M. A., June 11, 1904, p. 1582).

2. A charter providing for national incorporation, permitting the transaction of business anywhere in the United States (see "the original bill," this report). (Also extract from petition to Congress circulated by members of the House of Delegates and officers of the A. M. A. for signatures of petitioners; see this report.)

3. A charter providing for national incorporation *within* and presumably limited to the District of Columbia, at least so far as corporate business is concerned (see House bill, as "favorably reported," here appended, still in committee.)

4. A charter providing for national incorporation without referring to geographical restrictions, and permitting the transaction of business anywhere within the United States (same as original House bill to be seen above). This bill, as already stated, was a little later amended by the placing of a limit ($500,000) on the property holdings of the organization (amended McComas bill not reported from judiciary committee).

Before determining among yourselves what form of charter to choose, permit me again to present to you in this connection the opinions of Judge Ray on state incorporation, and also on the status of affairs after national incorporation. (Extract from final report of Committee on National Incorporation, read before the House of Delegates of the A. M. A., June 6, 1904.)

JUDGE RAY'S OPINION ON STATE INCORPORATION.

"No corporation created by the act of a state legislature direct, or organized under the general statutes of such state, has the power to hold its meetings or transact its *corporate* business outside the state of its creation. Such a corporation may, however, transact *certain* business in another state, provided such other state permits foreign corporations to do business within its borders, either generally or on compliance with certain conditions, and such condition have been complied with. Sometimes the same persons incorporate in two or more states under the laws of such states respectively, and under the same name and for the same purpose. In such cases the corporations are not the same, but each is a distinct body corporate in the state in which organized. It has been suggested that a state may grant a charter allowing the corporation to have its office and transact its business in some other state or in all the states and bind the corporation. This is beyond the power of any state. If such power existed, a state might authorize its corporations or citizens to do acts in a neighboring state unlawful there under its laws and then protect the wrongdoers at home from the consequences of such acts. Public policy is opposed to the existence of such power in a state. It is not granted by the constitutional and judicial authority and interpretations have always denied its existence.

It has been suggested that a state corporation holding a meeting outside the state of its creation may there adopt certain resolution or take certain action affecting the corporate body and authorize and empower a certain committee or designated number of the members of the corporation to meet thereafter in the state where the corporation was created and ratify and confirm such action.

It is self-evident that such action would be illegal and that all acts of such committee or designated members in execution of such directions would be illegal. Such committee or designated members would be without power to act in the premises and bind the corporation for the evident reason that the action purporting to confer on them power to act in the premises was void because taken outside the state of incorporation. Again, no such power as this could in any event be delegated. To permit such action by a corporation would allow its members to hold an illegal meeting outside the state of its creation (with only a small attendance), and at such illegal meeting authorize a small minority of its members to meet in the state of incorporation and bind the whole body. It should always require the majority of a body to ratify illegal acts.

At least all should be permitted to attend and take part in the proceedings when a ratification is attempted.

Even when a State authorizes or permits the corporation of another state to do business within its borders, great uncertainty attends all the transactions of such corporation, if it avails itself of such permission or authority. It is common knowledge that most of the states are annually changing their laws relating to corporations. Changes in party control, or even in public sentiment, are almost sure to bring a change in the laws relating to corporations in most of the states. The result is that a corporation created by the laws of a state is only safe in the state of its creation, and even then, if the power to repeal, alter, or amend was reserved by the legislature (as is now generally the case), the corporation may find itself shorn of its vital powers and privileges by the legislature of the state where incorporated.

Acts of incorporation enacted by the Congress of the United States are hardly ever changed, and when a change is made it is only done at the request of the incorporated body.

JUDGE RAY'S OPINION OF THE STATUS AFTER NATIONAL INCORPORATION.

In case a charter should be obtained through Act of Congress incorporating *an* American Medical Association, such corporation, when perfected, would be distinct from a state incorporation of the same name, the one being a national incorporation deriving its powers from the Federal Government, and the other being a state incorporation, deriving its powers from the state government. The jurisdiction of the one would extend throughout the United States, that of the other throughout the state only.

The membership of the one might be the same as the membership of the other, either in whole or in part; but still, in managing the affairs of such corporation, the members, and the officers, directors or trustees thereof, elected by them, would act under a different authority. In short, the two corporations would be, legally, as distinct and independent as two individuals having the same name.

But the membership being the same, or substantially the same, the two corporations might work in perfect harmony for the attainment of the same ends and also might elect and be governed by the same officers. The state corporation would be perfectly independent of the national, both in action and in ownership of property. It could, however, by a vote of its membership, wind up its affairs and transfer its property to the national corporation, but no act of Congress or of the state legislature, or of both combined, could transfer the property of the one to the other.

Where state incorporation for the accomplishment of a certain purpose has preceded national incorporation it is always wise, on securing the latter, to continue the state organization until the national body is fully organized and in perfect working order.

The members of your special committee are clearly of the opinion at this time that all further contention in Congress relating to national incorporation should be made by the Committee on National Legislation and not by a special committee appointed for that purpose. The resources of the former are greater, more promptly available and seemingly of more emphatic scope than are those of the special committee.

Moreover, two committees laboring for a similar purpose along similar lines of action cause a useless expenditure of time, energy and money.

In conclusion, we beg to thank all those with whom the committee has been brought in contact in any manner for the uniform courtesy and loyalty of purpose always shown in the efforts to secure national incorporation. Mr. J. Johnson Ray (son of Judge Ray), who was clerk of the judiciary committee of the House during his father's chairmanship of that committee and for some time afterward, gave his personal attention at Washington and elsewhere to furthering national incorporation, rendering valuable aid along the line of our endeavor in both House and Senate. Mr. Ray's personal acquaintance with the members and the methods of business of the judiciary committees and his unselfish devotion to our cause were of great value and justly entitle him to our thanks. The vigilant and influential assistance of many of our members in Washington, D. C., gave to us much courage and hope and to the cause powerful support. The members of the House of Delegates and the officers and members of the Association, with but strikingly few exceptions, contributed the full weight of their influence and energy to the cause of national incorporation.

We also desire to express our regrets for any oversight or inadvertence that many have in any way aroused a sense of displeasure on the part of any one with whom we have been in contact or in communication during the effort to secure incorporation.

Finally, in view of the fact that not less than 10,000 persons (the great majority of whom are members of the A. M. A.) have petitioned Congress for national incorporation, and also in view of the fact that the question of constitutionality of incorporation appears to be, within certain limits, an open one on the part of competent authorities, and also because national incorporation will add dignity, efficiency and influence to the Association, we, therefore, recommend the following resolution:

Resolved, That the efforts to secure national incorporation of the American Medical Association be and hereby are continued, and that the labors relating thereto become a part of the duty of the Committee on National Legislation, and that these duties be no longer referred to a special committee appointed for that purpose.

All of which is respectfully submitted.

Joseph D. Bryant, Chairman.
H. L. E. Johnson,
Leartus Connor,
D. S. Fairchild,
C. G. Kenyon.

Dr. Harris, New York, moved that the report of the Committee on National Incorporation be referred to the Reference Committee on Medical Legislation and Political Action. Seconded.

Dr. McCormack, Kentucky, moved to amend that the thanks of the House of Delegates be tendered to Judge Ray, Mr. Ray, his son, and Senator McComas, for the active and laborious assistance they had given the committee.

Dr. Sanders, Alabama, expressed his great appreciation of the broad, and, at the same time, analytical way in which the committee had dealt with this very important question, which he regarded as one of the questions of the supremest importance to this body. He had for a long time been in favor of national incorporation. He was glad, indeed, to have the question laid so broadly and so fully before this body, as it furnished a basis from which the House of Delegates might proceed. Speaking for himself individually, he would like to see more embodied in a national charter than simply the promotion of the science and art of medicine. He believed that other objects might be embodied in a charter granted the association by the nation. But he should take pleasure and would derive profit from a close and careful study of the very able report submitted by the committee, and he would defer any final conclusions until he had devoted such study to the subject. He felt that the thanks of the House of Delegates were rightly due to the members of the committee.

The chairman then put the motion as amended, and it was carried.

Committee on Reciprocity.

REPORT REFERRED TO COMMITTEE.

The President called for the report of the Committee on Reciprocity, when Dr. W. L. Rodman, chairman, made the following verbal report:

The Committee on Reciprocity met last evening, and met a second time this morning, at the courteous request of the Council on Medical Education, as they felt as we did, that the labors of the two committees were closely akin, and we feel, in the first place, that any detailed report at this time would be premature, inasmuch as the Committee on Reciprocity will make a report later on after the plans formulated by the Council on Medical Education have been digested, have been approved, have been put into practice. In the second place, we have been waiting to hear the report of the Committee on National Incorporation. We feel that a most important question there is involved, and before making a final report we wished to hear the report of the Committee on National Incorporation. In the third place, it has been impossible for the committee to get together during the year, as one member lives in Montana, one in Colorado, one in Michigan, one in Kentucky, and one in Pennsylvania. We feel that the work of the committee would be enhanced by the appointment of a committee so distributed geographically that the members can be gotten together sometime during the year. It is almost impossible for any work to be done by correspondence alone on an important subject like this. Moreover, it is difficult to find five men who hold the same views, and in order that views may be harmonized and a unanimous report made on such an important subject, I would ask that a new committee be appointed by the President in such a way that its members can be brought together at least once during the year.

On motion of Dr. Craig, Pennsylvania, the report was referred to the Reference Committee on Medical Education.

Committee on Organization.

REPORT REFERRED TO COMMITTEE.

The President called for the report of the Committee on Organization. Dr. J. N. McCormack, chairman, spoke as follows:

I have a brief verbal report to make. The committee is glad to report to the House of Delegates that the plan of organization promulgated by the Association has been accepted practically by all of the states in the Union except those of Virginia and Maine. The work has progressed rapidly during the year, and we are now able to report that almost 1,800 of the 2,830 counties in the United States have some form of organization. In very many of the counties excellent organizations have been effected, vital forces operating for the benefit of the profession and for the people within their jurisdiction. Of course, a much larger per cent. of them are little more than organizations on paper, and much work is required to be done by the state associations, by the profession at large, before the full benefits of organization will be realized in these counties.

As chairman of the committee, it has been my pleasant duty to visit many of the states on itineraries arranged by the state associations, and I have gone from district to district, and from county to county; have had the privilege of meeting the local profession, and not only to address them on the subject of organization, but to discuss the subject with them in a practical way and to study the conditions and needs of the profession in each locality in a broad and comprehensive manner. In many of the states these meetings were well attended, usually representatives from almost every county attending some of them, and I feel sure, in a measure, that the profession of those states was reached and influenced for good.

The work is in its infancy. It has barely begun, but I am impressed with the idea that, if it can be prosecuted with vigor within the next ten years, we ought to have and can have an organized profession in this country; that our profession can be made a power not only in legislation, not only in furthering our own interests, but in reaching out and benefiting the people of this great country, thus making the profession a power for usefulness, a power for the protection of the people of this land which will not be rivaled by any other that is in existence.

I submit this brief verbal report, because it is one that is in progress, one that will not be completed for many years to come; but I hope, before this House of Delegates adjourns, that measures will be taken in some manner to carry on the work. I expect to retire from this work myself at the conclusion of the session, and I hope in some way that steps will be taken by the Association to prosecute the work with added vigor in every one of the states in the union, because my experience has been that those states which are the least organized, so imperfect in their work, are the ones in which the most beautiful work can be done at present. The older states, the better organized states, are the most fruitful field for work at the present time, and I believe that in some way it will be the wisdom of this House of Delegates that this work should be carried on until we have an organized profession within the United States, a profession so united as to be able to give voice to its opinion in legislative and public affairs, so that it may be of benefit not only to every physician within the broad limits of this country, but continued until we are able to include every competent and modern physician within the reach of every community in every county and state in this land. (Applause.)

On motion the report was referred to the proper committee.

Report of Scientific Exhibit Committee Postponed.—The report of the Committee on Scientific Exhibit was called for and passed in the absence of the members of that committee. (See page 277.)

Amendments to By-Laws.

Other amendments are on pages 258, 275, 278, 280, 283, 285.

FOR CLOSER CONTROL OF SESSION ARRANGEMENTS.

Under the head of "New Business," Dr. Harris, New York, offered the following resolution:

Resolved, That the Reference Committee on Amendments to the Constitution and By-Laws be requested to report a by-law at the session of this House of Delegates on Wednesday next which shall place all arrangements for the annual session, including the place of meeting for the House of Delegates, the General and Section Meetings and the Exhibition Hall, under the immediate charge of the Board of Trustees, and that the Board of Trustees shall pay the current expenses of the annual session and be empowered to appoint a local committee of arrangements which shall report to the Board of Trustees.

It was moved that the resolution be referred to the Reference Committee on Amendments to the Constitution and By-Laws. Seconded.

After some discussion, which was participated in by Drs. Billings, Harris and McCormack, Dr. McCormack moved to amend by striking out the words "be requested to report a by-law" and substituting the words "consider the advisability of reporting a plan," so that the committee may report back in the form of an amendment to the Constitution.

Dr. Harris accepted the amendment, and the motion as amended was carried, and the report was referred to the Reference Committee on Amendments to the Constitution and By-Laws. (See page 279.)

TO ALLOW CHANGE OF SESSION PLACE.

Dr. T. J. Happel, Tennessee, a member of the Board of Trustees, presented an amendment to the by-laws, as follows:

> *To amend Section VII of the By-Laws, Chapter 10, page 20, by adding at the end of the section:* "If, after the place of session has been selected, it becomes apparent that satisfactory transportation rates can not be secured, and the Association can not be properly entertained and cared for, the Committee on Transportation and Place of Session be and are hereby authorized to change the said place of session; but said change shall not be made later than three months preceding the date fixed for the annual session."

He said that, with no reflection on the place of session in Portland, it was evident that as this Association grows it is more and more difficult for some places to entertain the members, as the hotel accommodations were utterly inefficient, and an unsuitable place might be selected by the House of Delegate under pressure, without due investigation. The object of this amendment to the By-Laws was to provide that when this was self-evident, it could be ascertained through the Secretary and Transportation Committee in dealing with the different railroads, because it would provide that if satisfactory transportation rates could not be secured, this would be one of the grounds for changing the place of session. This could work no harm, and it might do good along that line, and it would doubtless leave the matter of transportation where the members could get satisfactory rates and it would enable them further to secure satisfactory hotel rates, and the members would not, to use a trite expression, be "done up" in hotel rates, or in railroad transportation.

On motion the amendment was referred to the Reference Committee on Constitution and By-Laws. (See page 279.)

Resolution Commending U. S. Public Health Service.

PRESENTED AND REFERRRED TO COMMITTEE. (See page 277.)

Dr. C. J. Smith, Oregon, presented a preamble and resolution, and on motion they were referred to the Reference Committee on Medical Legislation and Political Action to be reported back to the House of Delegates. (See page 277.)

> Whereas, By act approved July 1, 1902, Congress enlarged the functions and powers of the U. S. Marine Hospital Service and changed its name to the U. S. Public Health and Marine Hospital Service; and
>
> Whereas, The good results of said legislation have been manifested by the scientific work of the Hygienic Laboratory in its broadened organization, by the coördination of the service with the state boards of health in matters of hygiene and sanitary science, and by successful efforts against infectious and contagious disease; therefore, be it
>
> *Resolved*, That the American Medical Association recommends to Congress that said service be aided in every proper manner in the prosecution of its important duties, and that in its efforts to protect and improve the public health it be strengthened in any manner necessary to promote its efficiency and character as the national health organization.

Committee to Examine Methods of Keeping Minutes.

Dr. Sanders, Alabama, moved that a committee of five be appointed by the chair, whose duty it shall be to consider the method according to which the minutes of this body are kept, and to report thereon, accompanying their report by such recommendations as they may see fit to make.

His object in submitting this motion was to endeavor to reach a plan of keeping the minutes in such a way as to make them full and complete, and, at the same time, accessible to the members of the Association at any time. He felt persuaded that a plan could be devised by which this could be accomplished and which would receive not only the endorsement of the House of Delegates, but the endorsement of its Secretary. He believed the work could be made easier and more complete and agreeable to the Secretary. If such a committee should be appointed it could bring in its report and if it did not suit the members of the House of Delegates they could reject it. If the report, however, contained recommendations which the House of Delegates approved, then the work of the house might be facilitated as a legislative body.

The motion was seconded by Dr. Morris, Alabama.

The President put the motion, and as there was some doubt about its being carried, a division was called for.

There were 25 votes in favor of the motion and 25 opposed to it.

As there was a tie vote, the President was asked to cast the decisive vote, and he did so in favor of the motion, and it was declared carried (see below, this page, and page 284).

Resolution Endorsing Medical Practice Law for Alaska.

REFERRED TO COMMITTEE. (See page 277.)

Dr. C. J. Smith, Oregon, offered a resolution by request asking the House of Delegates to endorse efforts for the profession in Alaska to obtain legislation regulating medical practice, which was referred to the Reference Committee on Medical Legislation and Political Action. (See page 277.)

New York Asks Reapportionment.

REFERRED TO COMMITTEE. (See page 285.)

Dr. Harris, New York, said that before the next annual session of the American Medical Association the medical profession of the state of New York will have united on the recommendation of the joint committee; and, therefore, at a previous session, in the section of the By-Laws which refers to the number of delegates to which each state is entitled, and which is subject to change every three years, an exception was made in regard to the state of New York. He should like to have the Reference Committee on Constitution and By-Laws report for the year 1906 an exception for the state of New York in order that they might come to the next annual session with the full delegation. He moved that this matter be referred to the Reference Committee on Constitution and By-Laws. Seconded.

The Secretary stated that New York should have one delegate for each 500 members. It was not apportioned, but was left that way according to the minutes of last year.

The motion was carried and the matter was so referred.

Amendments to the By-Laws.

Note.—These amendments, according to the By-Laws, will lie over until the next session. Other amendments proposed are on pages 258, 274, 278, 280, 283, 285.

Dr. George F. Cott offered the following amendments:

DETAILS IN METHOD OF BALLOTING.

The following amendment is proposed to be added to the end of Section 2, Chapter VII, of the By-Laws, viz.:

> In balloting for vice-presidents, on each ballot, each member for whom the vote is cast must be designated as either "first vice-president," or "second vice-president," or "third vice-president," or 'fourth vice-president."

The following amendment is proposed to be added to the end of Section II, Chapter 8, of the By-Laws, viz.:

> And this rule shall apply to the other vice-presidents, each vice-president taking the place vacated by the next preceding vice-president.

APPORTIONMENT OF DELEGATES.

The following amendments are proposed to Section 3, Chapter IV, of the By-Laws, viz.:

> In second line for "1903" substitute '1905," and strike out the word "third" before the word "year."
>
> In tenth line, for the words "three years," substitute the word "year."
>
> Strike out the remainder of the section after the word "members" in the seventeenth line.

Committee Appointed to Examine Method of Keeping Minutes.

The President announced the following as members of the committee created by Dr. Sanders' motion: Dr. W. H. Sanders, chairman; Drs. W. S. Foster, J. F. Percy, Duncan Campbell, and Frank Paschal. (See page 284.)

Resolutions of Section on Practice Endorsing Council on Pharmacy.

REFERRED TO COMMITTEE. (See page 276.)

Dr. Wells, Illinois, presented resolutions from the Section on Practice of Medicine, which were referred to the Committee on Reports on Officers.

> Whereas, The Medical profession of the United States has too long neglected to recognize the harm to the public, to the members of the profession, and to scientific medicine, from the nostrum evil; and,

WHEREAS, The Board of Trustees of the Association has created a body, known as the Council on Pharmacy and Chemistry, to investigate and pass on the various non-official medicinal preparations placed on the market; therefore, be it

Resolved, That we, individually and collectively, heartily endorse the action of the Board of Trustees, and earnestly urge every physician to give this effort of reform his hearty support.

Resolved, That the Board of Trustees be requested to effect the removal of the remaining nostrum advertisements from the pages of THE JOURNAL of the American Medical Association.

Resolved, That the representatives of this Section to the House of Delegates be instructed to present these preambles and resolutions to the House of Delegates, with the recommendation of this Section for their endorsement, and that a copy of the same be sent to the president and secretary of each constituent society of the American Medical Association.

Commendation of Popular Magazines for War on Nostrums.

Dr. McCormack, Kentucky, moved in connection with the above resolutions that the cordial thanks of the House of Delegates be tendered to the *Ladies' Home Journal*, to *Everybody's Magazine*, to *Collier's* and other great literary publications which have taken up a fight against nostrums.

Dr. Jones, California, moved that when the House adjourned, it adjourn to meet at 10 o'clock Wednesday morning. Seconded.

Dr. Bacon, Illinois, moved to amend that when the House adjourns it adjourn to meet at 2 o'clock Wednesday afternoon.

The amendment was seconded, accepted, and the motion as amended was put and carried.

On motion, the House of Delegates then adjourned until 2 p. m. Wednesday.

Fourth Meeting—July 12

The House of Delegates met at 2 p. m. and was called to order by President McMurtry.

The minutes of the previous meeting were read and approved.

Committee on Reports of Officers.

REPORTS REFERRED TO VARIOUS COMMITTEES.

The President called for the report of the Committee on Reports of Officers, which was read by Dr. Frank Billings, Chicago.

Discussion of Address to Delegates by President Musser.

Your committee recommends that the suggestions of the President (see page 255) be referred to the respective committees to which they should naturally go.

1. The suggestion for the possible improvement of scientific work of the sections to the Reference Committee on Sections and Section Work (see pages 280, 282, 283.)

On motion of J. Garland Sherrill, Kentucky, the suggestion was so referred.

2. The suggestion as to place of holding the annual sessions to the Committee on Transportation and Place of Session (see page 279).

On motion of Dr. A. E. Baldwin, this part of the report was concurred in and the suggestion was so referred.

The committee recommends that the address of the President be printed in THE JOURNAL.

It was moved and seconded that this recommendation be concurred in. Carried. (It is so printed. See page 255.)

Discussion of Report of the Secretary.

1. We recommend that the request of the Secretary of the American Electro-Therapeutic Association for the establishment of a Section on Electrotherapeutics, as quoted in the letter to Secretary Simmons (see page 256), be referred to the Committee on Sections and Section Work.

RECORD SYSTEMS APPROVED.

2. We recommend the plan of organization with the system of reporting of the names of newly elected, deceased, and recently resigned, or suspended members, of the county societies by the secretary of the county to the secretary of the state society and the prompt transmission of the information by the latter to the office of the General Secretary. We recommend, too, that the plan of transmission of this information as indicated by the General Secretary, as well as the maintenance of a permanent record in the form of a card index of the members of the county, state and national associations, should be continued.

COUNCILORS' BULLETIN APPROVED.

3. We concur in and recommend that the suggestion of the Secretary for the establishment of a Councilors' Bulletin be carried out.

BIOGRAPHICAL CARD INDEX APPROVED.

4. We also recommend the Biographical Card Index which has been established by the Secretary, and recommend that the work be continued.

5. We recommend that the report of the Secretary be published in THE JOURNAL. (It is so printed. See page 256.)

Dr. E. Eliot Harris, New York, moved the adoption of the report of the committee on the Secretary's report. Seconded by Dr. C. S. Bacon, Chicago, and carried.

Discussion of Board of Trustees' Report.

TRUSTEES PRAISED FOR FAITHFUL AND JUDICIOUS MANAGEMENT.

1. We congratulate the Association on the excellent financial condition shown and recommend a vote of thanks to the Board of Trustees for the judicious, conservative and wise management of the property and finances of this organization. We also recommend that the report be published in THE JOURNAL. (It is so printed. See page 263.)

COUNCIL ON PHARMACY APPROVED.

2. Report of the Board of Trustees on the creation of the Council of Pharmacy and Chemistry (see page 265) is, in the opinion of your committee, the most important and effective measure ever undertaken by this Association to rid the profession of the abuse of the nostrum evil. The personnel of the council is of such a character as to create a feeling of confidence that the proposed work will be done thoroughly, conscientiously and justly. The publication of the results of the work of the council in book form with annual editions will afford a source of information of inestimable value to the profession.

3. Therefore, we recommend that the House of Delegates indorse the action of the Board of Trustees in the creation of the Council on Pharmacy and Chemistry; that the Trustees be requested to devise a plan through which the council may be made permanent, and that the Trustees request the Secretary of Agriculture of the U. S. Government to give the Council on Pharmacy and Chemistry recognition by authorizing the Bureau of Chemistry to co-operate with the council in its work.

4. We indorse the work already performed by the Council on Pharmacy and Chemistry in the formulation of rules governing the mode of selection of articles to be investigated and the publication of results already obtained.

5. We recommend the publication in book form of a list of the preparations not in the Pharmacopeia, that are approved by the Council on Pharmacy and Chemistry.

MISSOURI, PRACTICE OF MEDICINE AND JONES' RESOLUTIONS FAVORED.

6. We indorse the underlying sentiments of the preamble and resolutions presented by the committee of the State Medical Society of Missouri (see page 262), of those presented by the Section on Practice of Medicine (see page 275), and and of the resolution presented by Dr. Jones, of California (see page 263).

DECLARED REPREHENSIBLE TO USE NOSTRUMS.

7. We recommend the adoption of the following motions:

Resolved, That it is reprehensible for the members of this organization to prescribe or use nostrums, and that we request the Board of Trustees not to advertise any nostrum in the columns of THE JOURNAL.

JOURNAL ADS. SHOULD CONTAIN FORMULAS.

Resolved. That we request the Board of Trustees hereafter to insert in THE JOURNAL with each advertisement the formulas of remedies which may have been favorably passed on by the Council of Pharmacy and Chemistry for advertisement..

On motion, these recommendations of the committee were concurred in.

BLUE BOOK AND DIRECTORY AUTHORIZED.

8. (a) Your committee is unanimous in the opinion that a Blue Book, that is, a directory containing the names only of the members of the organization, would not meet the needs of the members, and that a directory of that character would be looked on by those members of the profession outside of the organization in the nature of a boycott of the outsiders and would, therefore, be prejudicial to the best interests of the Association and would do much to defeat further organization and increase of membership.

(b) On the other hand, we are of the unanimous opinion that the publication annually of a National Medical Directory of the names of all licentiates, with an abbreviated biography of each individual, with the members of the organization differentiated by a form of type or some other device which would afford a directory with the facilities which THE JOURNAL office commands, of accurate data, would be of great value in the sense of a directory and would be of great aid in effecting more complete organization of the profession. We believe it would be a source of income to the Association, and, although we believe that the Association should not compete in commercial enterprises for financial gain, we look on the publication of a directory as an object quite as free from commercialism as the publication of The Journal.

(c) We, therefore, indorse the action of the Board of Trustees in the purchase of the Standard Directory and recommend that the board publish a complete directory on the plan outlined by them.

Furthermore, we recommend that the Trustees may also furnish any part of this directory to state and county societies on application.

Dr. J. N. McCormack, Kentucky, moved the adoption of the recommendations of the committee. Seconded by Dr. Sherrill.

After some discussion, Dr. Eugene Smith, Michigan, moved that that portion of the report which relates to the publication of a medical directory by the Association be referred to the Board of Trustees to report next year. Seconded by Dr. Ferguson, New York.

After further discussion, which was participated in by Drs. Smith, Michigan; Ferguson, New York; Happel, Tennessee; Bacon, Chicago; Harris, New York, Dr. Ferguson withdrew his opposition to the original motion.

Dr. G. Garland Sherrill, Kentucky, moved as a substitute that so much of the report as pertains to the recommendations of the committee be adopted, striking out all that relates to the purchase of a medical directory. Seconded.

After discussion by Drs. Harris, Illinois; Chassaignac, Louisiana; Baldwin, Illinois, there were calls for the previous question, and, as there was some doubt as to what this really was, the Chairman stated that the original motion of Dr. McCormack was to adopt the recommendations of the committee; that Dr. Sherrill had moved as a substitute that the recommendations of the committee be concurred in, with the exception of that part which relates to the purchase of a directory.

With this explanation, the President then put the substitute, and, as there was some doubt manifested as to whether it was carried or not, the roll was called by the Secretary, with the result that there were 27 votes cast in favor of the substitute and 56 against it.

The President thereon declared the substitute lost.

Dr. Harris, New York, said that, inasmuch as there had been a free discussion on the question as to whether the Association should publish a medical directory or not, he desired now to move the previous question on the adoption of the report of the committee as read, which was seconded and carried, and the recommendations of the committee were adopted.

Dr. Billings then read the final part of the report of the committee which pertains to national incorporation.

We recommend that this part of the report be referred to the Committee on National Legislation, as advised by the Committee on National Incorporation.

Frank Billings, Chairman,
Thomas D. Coleman,
C. J. Smith,
George W. Guthrie,
Phillip Mills Jones.

Dr. Sherrill, Kentucky, moved that the report of the committee be now adopted as a whole, which was seconded and carried.

Reference Committee on Legislation.

REPORT ADOPTED AND RECOMMENDATION APPROVED.

The next order was the report of the Reference Committee on Medical Legislation and Political Action, which was read by the chairman, Dr. Walter B. Dorsett, Missouri, as follows:

Portland, Ore., July 12, 1905.

To the President and House of Delegates of the American Medical Association.

Gentlemen: Your committee to whom has been referred the following reports respectfully recommends as follows::

PUBLIC HEALTH RESOLUTION ADOPTED.

The resolution with reference to the United States Public Health and Marine Hospital Service. (See page 275.) Approved and adoption recommended.

ALASKA PRACTICE LAW RESOLUTION APPROVED.

The resolution with reference to Alaska (see page 275) asking for recognition and sympathy from this Association. Approved and adoption recommended.

NATIONAL INCORPORATION REFERRED TO LEGISLATION COMMITTEE.

After reviewing the report (see page 259) of the Committee on National Incorporation, Dr. Bryant, chairman, we are impressed with the amount of work which has been done by this committee and for which we feel the Association should be duly grateful. We concur in the resolution offered by the committee, namely, "That the efforts to secure National Incorporation of the American Medical Association be and hereby are continued and that the labors relating thereto become a part of the duty of the Committee on National Legislation, and that these duties be no longer referred to a special committee appointed for that purpose." We recommend the adoption of the report of the committee as made.

WORK OF NATIONAL LEGISLATION COMMITTEE PRAISED.

Your committee reports that the labors that devolved on the Committee on National Legislation were many and arduous, and we heartily approve of their action.

PERMANENT LEGISLATION BUREAU ADVISED.

With reference to the recommendation pertaining to a Bureau for Medical Legislation, which is to be located in Chicago under the immediate direction of the Secretary of the Association, who, in turn, is to act under the general supervision of the committee, your committee reports that we believe that this will be a step in the right direction, and therefore recommend it for the specific reasons as set forth by the committee.

Walter B. Dorsett, Chairman,
Lewis C. Morris,
W. J. Miller.

On motion of Dr. A. E. Baldwin, Illinois, the report was adopted as read.

Dr. Phillip Mills Jones, California, moved the adoption of the recommendations contained in the report of the committee. Seconded and carried.

Report of the Committee on Scientific Exhibit.

The President called for the report of the Committee on Scientific Exhibit, and it was read by the chairman, Dr. Frank B. Wynn.

A brief retrospect of the work of the Scientific Exhibit may be offered. Inaugurated in 1900, the present makes the sixth annual exhibit. During this period the contributions by societies and institutions exhibiting more than once are:

Exhibiting 6 times: Indiana State Medical Association.

Exhibiting 4 times: Johns Hopkins University, Indiana Medical College, Northwestern University Medical School, and the Cincinnati Hospital.

Exhibiting 3 times: Government Hospital for Insane, U. S. Marine Hospital Service, U. S. Army Med. Museum, College of Physicians (Chicago), Rush Medical College, Harvard Medical School, Medico-Chirurgical College, and the Wisconsin State Medical Association.

Exhibiting 2 times: U. S. Bureau of Animal Industry, St. Peter Hospital for Insane, University of Texas, Boston University Medical School, Syracuse University, McGill University, Pepper Laboratory, Lakeside Hospital, and the Missouri State Medical Association.

Some of those exhibiting but once have compensated in a measure for the lack of frequency by the excellence of material presented. Notable among this number are the Jefferson Medical College, University of Pennsylvania, Minnesota State University, Phipps Institute, Pennsylvania Hospital, Philadelphia Hospital and others.

The total number of exhibits presented respectively by the states and by the U. S. Government is shown below:

Pennsylvania, 14; Illinois, 13; U. S. Government, 13; New York, 13; Indiana, 10; Ohio, 9; Massachusetts, 8; Minnesota, 5; Maryland, 4; Wisconsin, 4; Missouri, 3; Iowa, 2; Texas, 2; Canada, 2; Louisiana, 1; Kentucky, 1; California, 1; New Jersey, 1; Kansas, 1; Virginia, 1.

By years the number of exhibits is as follows:

In 1900, 16 exhibitors; in 1901, 29 exhibitors; in 1902, 20 exhibitors; in 1903, 24 exhibitors; in 1904, 24 exhibitors; in 1905, 16 exhibitors.

It will be observed that the largest exhibit was at St. Paul, and the smallest at this session. That the present exhibit should be small is not surprising when the remoteness of the session place is taken into account. The expense of transportation and risk in sending exhibits so far, have made it extremely difficult to secure participation. Nevertheless, an exceedingly creditable showing has been made. A detailed report will be furnished for publication at a future date.

The following is the program of demonstrations arranged for Thursday afternoon, July 13:

PROGRAM OF DEMONSTRATIONS.

1. (a) The American Unit for Standardizing Diphtheria Antitoxin. (b) Bacteriologic Impurities in Vaccine Virus. M. J. Rosenau, Washington, D. C.
2. Demonstration of Specimens Illustrative of Septic Endocarditis and Other Pathologic Conditions. Wm. Ophuls, San Francisco.
3. Biology of the Organism of Actinomycosis (J. W. Wright). Presented as a lantern slide demonstration by H. A. Christian, Boston.
4. Miscellaneous Demonstrations. James Carroll, Washington, D. C.
5. Anatomic Series of Brain Sections Stained by Weigert-Pal Method. Burton D. Myers, Bloomington, Ind.
6. (a) Methods of Teaching Physiology at Harvard University as conducted by Prof. W. T. Porter. (b) Demonstration of Physiologic Apparatus. Winfield S. Hall, Chicago.
7. Models of Lawrence Experiment Station and City Filters. Chas. Harrington, Boston.
8. Other Demonstrations.

HISTORIC EXHIBIT.

9. Demonstration of an Exhibit Illustrating the Life and Work of John S. Bobbs, the First to Perform Cholecystotomy. L. H. Dunning, Indianapolis.

[The above will include besides the presentation of relics, photographs, etc., the patient on whom Dr. Bobbs performed the operation. This interesting elderly lady will be at the Scientific Exhibit Room, basement of the Atkinson School Building, where those interested may see her.]

A new feature, introduced this year for the first time, is historical in character. Two such exhibits have been presented. One relates to the life of William T. G. Morton, the discoverer of surgical anesthesia; the other is illustrative of the life and work of Dr. John S. Bobbs and includes portraits, letters and addresses; the original article describing the operation, medical journal articles, and the patient on whom the operation was performed, Mrs. Z. Burnsworth, who was sent to the session by the Medical College of Indiana, which Dr. Bobbs was largely instrumental in founding.

It may be stated at this time that similar historical exhibits have been already assured for next year, showing the evolution of modern surgery; also pharmacy, and illustrative of the lives of N. S. Davis and Ephraim McDowell. The historical phase of medical life is too much neglected. Should not the medical profession see to it more faithfully, that her own, who have wrought and achieved for the world's advancement, are not forgotten? The discoverers and heroes of our profession are the workers and heroes of peace, but their services are no less valuable than those rendered by the heroes of war. This historical exhibit offers an opportunity to accord to them a just meed of praise; to enhance and authenticate medical history and to hold up for the emulation of our successors the highest professional ideals.

Frank B. Wynn, Director.

Dr. Walter B. Dorsett, Missouri, moved that the report be adopted, and that a vote of thanks be extended to Dr. Wynn for the same. Seconded and carried.

Reference Committee on Education.

REPORT OF COUNCIL APPROVED.

Dr. George M. Kober, chairman, read the report of the Committee on Medical Education, as follows:

Portland, Oregon, July 12, 1905.

To the President and Members of the House of Delegates.

Gentlemen:—The Reference Committee on Medical Education most heartily commends the work and indorses the broad general principles outlined in the report of the Council on Medical Education, and feels confident that the future work of the council will ultimately secure ideal standards. To this end your committee recommends that the Board of Trustees provide the necessary machinery to carry out the recommendations submitted by the council.

Your committee is of the opinion that it is very desirable for the council to establish a minimum standard of entrance requirements and a minimum standard for medical education which may gradually be improved on by time and experience until the ideal standard outlined by the council is reached.

Inasmuch as the Association of American Medical Colleges and the American Confederation of Reciprocating State Medical Examining and Licensing Boards have recently adopted a minimum standard of medical education, consisting of a four years' course, each year of at least thirty weeks, with thirty hours per week of actual college work (exclusive of holidays), your committee is of the opinion that this standard should be given preference as a starting point to a four years' course of seven months each, particularly as many of the state medical examining boards have made an eight months' course obligatory.

Your committee believes that, in addition to a well-balanced medical education, the welfare of the future practitioner demands that he should have some business training, a broad conception of the principles of medical ethics and of the value of medical organization in the promotion of scientific work, social intercourse with his professional brethren, medical legislation and political action.

Your committee recommends, therefore, that in the construction of a standard medical curriculum by the council provisions be made for a distinct and complete course on business methods for the practitioner, on medical ethics and the value of medical organizations.

Respectfully submitted,
Chas. E. Woodruff,
J. N. McCormack,
W. A. Jayne,
Geo. M. Kober, Chairman,
John C. Munro.

It was moved and seconded that the report be adopted. Carried.

Dr. Jones, California, moved that the recommendations contained in the report of the committee be adopted. Seconded and carried.

Reference Committee on Amendments.

The President called for the report of the Reference Committee on Amendments to the Constitution and By-laws.

This report was presented by the chairman, Dr. A. R. Craig, as follows:

The sense of the committee is unanimous in urging that the House of Delegates make only such changes in the Constitution and By-laws of the Association as are necessary for clearness of diction or are vitally important for the better government of the Association.

METHOD OF NOMINATIONS AND ELECTIONS.

We, therefore, recommend the adoption of the amendment proposed last year and lying over to this session:

Striking Out Book II, Chapter VII, Section 1: "Nominations for all officers, except the Treasurer, shall be made by ballot, and ten votes shall be necessary to constitute a nomination. As many ballots may be taken and as many nominations made as the house desires. The Treasurer shall be nominated by the Board of Trustees."

Substituting therefor:

Order of Business.—*Book II, Chapter VII, Section 1 (page 7 as revised)*: "Nominations for office, except that of Treasurer, shall be made orally, but no nominating speech shall exceed two minutes in length. Any nominee receiving a majority of the votes cast shall be declared elected. The Treasurer shall be nominated by the Board of Trustees."

Dr. Harris, New York, moved that this part of the report of the committee which relates to Amendments to the By-Laws be adopted. Seconded and carried.

The committee deems it inexpedient to adopt the following:

Section 1, Chapter IV: Striking out Section 1 and inserting in lieu thereof the following: "*Time of Elections.*—The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the last day of the session."

Section 3, Chapter IV: Striking out said section and inserting in lieu thereof the following: "Nominations for President shall be by ballot. All other officers shall be nominated by a committee of seven, representing the various geographical divisions of the country as nearly as may be."

Chapter VIII, Section 1: "That the name of the Section on Pharmacology be changed to the Section on Pharmacology and Therapeutics."

Dr. Billings, Illinois, moved the adoption of that part of the report of the committee. Seconded and carried.

The committee feels that the present time for holding elections should hold for some years at least and thinks that a change at this time would be premature.

The changes referred to in the second proposed amendment that is reported adversely is a second effort to right Book II, Chapter II, Section 1.

NAME OF SECTION ON PHARMACOLOGY.

The attached definition renders the third amendment unnecessary.

While the use of the term pharmacology has been confined by some authors to the action of drugs, academically called pharmacodynamics, considered etymologically it is the broadest and most comprehensive term that can be applied to the science of drugs. This is also the original application of the term by German and French authorities, such as Husemann and Littra, respectively, who define pharmacology as comprising practically all the sciences of material medicinal agents, namely, materia medica, pharmacodynamics, pharmacy, pharmaceutic chemistry, and pharmacotherapeutics, or of drug therapy, as distinguished from other agents used in the treatment of disease. The title also has been adopted for that section of the American Medical Association formerly called the Section on Materia Medica, Pharmacy and Therapeutics. It seems to represent all the different phases of the question to be considered better than any other title suggesting itself. Under this heading we propose to publish matter of interest on the broad subject of pharmacology as included in this definition.

Dr. Billings, Illinois, moved the adoption of this part of the report of the committee. Seconded.

Dr. John W. Foss, from the Section on Pharmacology, said, in reference to the last recommendation of the committee, that the Section on Pharmacology favored adding the word Therapeutics to the name of the section, and at the session of the Association held last year it was voted to add the name Therapeutics to Pharmacology, and this morning the same vote was taken by the section. He said that the omission of the word Therapeutics from the name of the section has a tendency to reduce the efficacy and efficient work of that section. He respectfully asked that the House of Delegates vote that the word Therapeutics be added.

Dr. Harris, New York, said that, inasmuch as there seems to be some question about the term pharmacology in the report, he moved that that part of it which relates to pharmacology be referred to the Committee on Sections and Section Work. Seconded and carried.

Dr. Harris, New York, then moved that the remainder of the report as read be adopted. Seconded and carried.

SECTION LECTURESHIP AMENDMENT ALREADY PROVIDED FOR.

The following amendments had been proposed by Dr. E. F. Wells, Illinois:

Book IV, Chapter II, Section 8. Striking out said section and inserting in lieu thereof the following: "*Sections. Section Lectureships.*—Each section may, at the discretion of its officers, establish an annual lectureship, as follows: The lecture shall be on some subject connected with that of the section before which it is given; shall embrace the results of historical research, original observation and experimental investigation, and shall not occupy more than thirty minutes in its delivery. The lecturer shall be appointed by the section officers, the selection to be made either by competition, aspirants to submit abstracts which show clearly the facts and conclusions to be presented in the lecture, or by invitation extended to some person who has risen to preeminence in the profession of medicine, who, if a foreigner, may be nominated to honorary membership in the American Medical Association."

This is not concurred in, as the privileges seem to be accorded by Book 4, Chapter II, Section 7, and Book 1, Chapter II. Section 5, of the by-laws.

On motion of Dr. Billings, Illinois, the recommendation of the committee was concurred in.

CHANGE IN SECTION DELEGATES REJECTED.

Book IV, Chapter II, Section 2: Striking out the last (third) sentence of said section and inserting in lieu thereof the following: "Each section shall also elect biennially one representative, and one alternate, to the House of Delegates of the American Medical Association, to serve two years."

This is not concurred in, as present means of representing the sections is very satisfactory.

On motion, the action of the committee on this amendment is concurred in.

SEQUENCE OF VICE-PRESIDENTS APPROVED.

The following amendment is proposed to be added to the end of Book III, Section 2, Chapter VIII of the by-laws, viz.:

"And this rule shall apply to the other vice-presidents, each vice-president taking the place vacated by the next preceding vice-president."

The committee offers as a substitute for the above, striking out the word "first" and substituting therefor the work "ranking," so that the section shall read:

Section 2. Vice-Presidents: The vice-presidents shall assist the president in the performance of his duties; during his absence, or at his request, one of them shall officiate in his place. In case of the death, resignation, or removal of the president, the vacancy shall be filled by the ranking vice-president."

On motion of Dr. Billings, this part of the report of the committee was adopted.

NEW METHOD OF BALLOTING FOR VICE-PRESIDENTS REJECTED.

The following amendment is proposed to be added to the end of Section 2, Chapter VII, Book II, of the by-laws, viz.:

"In balloting for vice-presidents, on each ballot, each member for whom the vote is cast must be designated as either 'first vice-president,' or 'second vice-president,' or 'third vice-president,' or 'fourth vice-president.' "

The above is not advised, as the committee feels that this plan of election would prolong the election, and that the plan now followed by precedence is abundantly satisfactory.

It was moved, seconded and carried that this portion of the report of the committee be approved.

CHANGES IN APPORTIONMENT REJECTED.

The following amendments are proposed to Section 3, Chapter IV, Book II, of the by-laws, viz.:

In the second line for '1903" substitute "1905" and strike out the word "third" before the word "year."

In tenth line for the words "three years" substitute the word 'year."

Strike out the remainder of the section after the word "members" in the seventeenth line.

The sense of these changes is to make the apportionment of the delegates annually, and the committee believes it would be for the best interests of the Association to continue the present system of apportionment.

The committee was directed to consider the proper representation in the House of Delegates of the profession of the State of New York, in view of the probable organization in that state. The committee feels that this end should be attained without change in our laws.

On motion of Dr. J. N. McCormack, the recommendation of the committee was adopted.

TRUSTEES TO CONTROL LOCAL ARRANGEMENTS.

In compliance with the request made at yesterday afternoon's meeting, the committee submits and recommends the following amendments:

Book III, Chapter X, Section 3: Strike out (a) "A Committee of Arrangements," and reletter the following names of standing committees.

Book III, Chapter X: Strike out Section 4, recounting the duties of the Committee on Arrangements, and adding to Book III, Chapter IX: "Section 2. The Board of Trustees shall have full control of all arrangements for the annual sessions and shall provide meeting places for the Association, the House of Delegates and the various sections. It shall also have control of all exhibits. The Board of Trustees in their discretion, may appoint a local committee of arrangements which shall be at all times under the control of the Board of Trustees."

Amend Section 7 of By-Laws, Chapter X, page 20, by adding as follows: "If, after a place of session has been selected, it becomes apparent that satisfactory transportation rates can not be secured, or the Association can not be properly entertained and cared for, the Committee on Transportation and Place of Session be and are hereby authorized to change said place of session, but said change shall not be made later than three months preceding the date fixed for the Annual Session."

PROVISION FOR CHANGING SESSION PLACE.

On examination of the constitution, the committee finds this amendment conflicts with the constitution, Article VIII. We offer as a substitute that Article VIII of the constitution be amended by the addition of the following words:

"The time and place of session may, however, be changed by the unanimous action of the Board of Trustees at any time prior to four months from the time selected for the meeting."

ALEX. R. CRAIG,
W. M. HARSHA,
F. PASCHAL,
J. GARLAND SHERRILL.

(NOTE.—The new amendments will lie over one year.)

On motion, the report of the committee was adopted as a whole.

The report of the committee in regard to method of recording the minutes was called for, but the chairman of that committee, Dr. Sanders, said the committee was not yet ready to report, but hoped to do so to-morrow.

Dr. Jones, California, asked whether the various amendments to the by-laws which were to come up for definite action could be printed and distributed to-morrow so that the members could follow them in reading.

The President said, if possible, the request of Dr. Jones would be complied with.

Resolution on Preventable Diseases in War.

REFERRED TO COMMITTEE. (See page 283.)

Under the head of "New Business," Dr. Edward F. Wells, Illinois, by request, submitted the following resolutions by a member of the Section on Hygiene and Sanitary Science:

WHEREAS, The science of prevention of disease having been long established on a solid scientific basis, it is now time that this fact be recognized by the national legislature; be it

Resolved, By the American Medical Association, that the attention of the people and of their representatives in Congress be directed to the fact that no adequate provision by law has yet been made to avoid in time of war the preventable deaths by disease of the soldiers who offer their lives for the preservation of the nation; be it further

Resolved, That this Association heartily endorses the statement of the President of the United States that the people have not compelled their representatives to provide adequately in advance of a medical system in its personnel, its nature, its organization and physical instruments necessary to make that organization effective, which alone, if prepared in advance, will obviate a trouble which otherwise is certain to come if we have a war.

On motion of Dr. George M. Kober, District of Columbia, the resolutions were referred to the Reference Committee on Hygiene and Sanitary Science.

Election of Associate Members.

Dr. Joseph McFarland, Pennsylvania, proposed the following names for associate members, Section on Pathology and Physiology: 1. Frederic S. Lee, Ph.D., University of Columbia, New York; 2. Martin H. Fisher, Ph.D., University of California; 3. Geo. T. Kemp, Ph.D., University of Illinois.

On motion of Dr. Baldwin, Illinois, these were elected associate members.

Amendment to Allow Papers Before Two Sections.

REFERRED TO COMMITTEE. (See pages 282-283.)

Dr. McFarland stated that, on behalf of the Section on Pathology and Physiology, he had a matter to present which he considered of some importance to that section. He said there is an article in the by-laws which provides that a member of a section may read his paper before one section only. This small section is composed largely of technical men, and there are many medical men, interested in pathology, who not infrequently prepare technical papers and would like to read them before this section, the same as they would papers of clinical interest before the Section on Practice of Medicine, and be enabled to do both. He, therefore, suggested that the following amendment be made to the by-laws:

Book IV, Chapter II, Section 12: "No member shall have the right to present more than one paper on the same subject at any Annual Session."

The other form of amendment is that no member shall have a right to present the same paper before more than one section at any annual session. The object of this section of the by-laws is to prevent any member who may so desire, for personal reasons, from presenting the same paper before several sections.

On motion of Dr. McCormack, the amendment was referred to the Reference Committee on Amendments to Constitution and By-laws.

Dr. John W. Foss presented an amendment on behalf of the Section on Pharmacology similar to the one just offered by Dr. McFarland, which was likewise referred to the Reference Committee on Amendments to the Constitution and By-laws.

Resolution on Uterine Cancer Investigation.

REFERRED TO COMMITTEE. (See page 283.)

Dr. Hugo O. Pantzer, Indiana, presented a resolution on behalf of the Section on Obstetrics and Diseases of Women relative to the Gynecologic Section of the International Medical Congress of Arts and Science, which was referred to the Reference Committee on Hygiene and Sanitary Science.

Amendments to By-laws.

REPORTED ON BY COMMITTEE LATER. (See page 283.)

Dr. T. J. Happel, Tennessee, offered the following amendments to the by-laws:

1. Amend Book II, Chapter VI, Section 1, by adding to this section as follows: "and shall elect from day to day a chairman to preside over its meetings."

2. Amend Book III, Chapter VIII, Section 1, as follows: Strike out the words in the second and third lines "and at the meetings of the House of Delegates."

Professor Hirschberg Proposed for Honorary Member.

REFERRED TO COMMITTEE. (See page 283.)

The Secretary read the following:

The Section on Ophthalmology of the American Medical Association instructs its representative in the House of Delegates, Dr. W. H. Snyder, to present the name of our distinguished confrère, Professor J. Hirschberg, of Berlin, who is now the honored guest of the section, for honorary membership in the Association, and respectfully asks favorable action on the application.

Albert E. Bulson, Jr., Secretary of the Section.

On motion of Dr. A. R. Craig, Pennsylvania, this communication was referred to the Reference Committee on Sections and Section Work.

Stomatology Resolutions on Contract Surgeons.

REFERRED TO COMMITTEE. (See page 285.)

The Secretary read the following resolutions, which were passed by the Section on Stomatology:

Whereas, It is generally believed by those who are best informed of the unsatisfactory status of the contract surgeons and the undesirable relations existing between them and the regularly organized military forces of the United States, that much good can be done by abolishing the contract system of employing medical officers; therefore, be it

Resolved, That we heartily endorse the following language of the Honorable Secretary of War expressed in his argument before the House Military Committee, January 23, 1905, viz.: "I have some personal knowledge of the unsatisfactory relations that exist between the contract surgeons and the army. There are no persons who learn so quickly the difference between a real and a 'wax' officer, if you may call him such, as the enlisted men. The life of a contract surgeon, especially one who is at all sensitive, is taken up in resenting slights. It is not a healthy attachment to any branch, but a collection of men that are neither fish, flesh, nor fowl, and I think the *esprit de corps* of the whole service, that branch of the service, would be very much better if the contract system could be entirely eliminated."

Resolved, That it is the sense of the American Medical Association that consistency and justice demand that all officers in the Medical Department of the Army should be regularly commissioned officers with graded rank and title, and that no one should serve as a medical officer by contract.

Resolved, That the Dental Corps should be graded in like manner as regularly commissioned officers with suitable rank and title, and that the contract system should be abolished in this, as in other branches of the medical service.

On motion of Dr. George M. Kober, these resolutions were referred to the Reference Committee of Medical Legislation and Political Action.

The Secretary read a communication from Dr. Frederick Holme Wiggin, New York, in which he tendered his resignation as a member of the Judicial Council, and, on motion of Dr. McFarland, Pennsylvania, the resignation was accepted.

State Journals Asked to Aid Nostrum Fight.

RESOLUTION OF DR. HARRIS ADOPTED.

Dr. E. Eliot Harris, New York, offered the following resolution:

Resolved, That the committees on publication of the journals of medicine published by the state medical associations affiliated with this body be asked to assist the Board of Trustees in their effort to suppress the advertisement of medical nostrums and to coöperate in the work of securing pure food and pure drug laws in the United States.

On motion of Dr. Billings, the resolution was adopted.

On motion of Dr. W. S. Foster, Pennsylvania, the Association then adjourned until 2 p. m. on Thursday.

Fifth Meeting—July 13.

The House of Delegates met at 2 p. m. and was called to order by the President.

The minutes of the previous meeting were read, corrected and approved.

Dr. McCormack to Continue Organization Work.

RESOLUTION OF APPROVAL.

Dr. Jones, California, moved that the by-laws be suspended for a few minutes in order that a very important and short resolution may be introduced. He said the resolution refers to Dr. McCormack, of Kentucky. Seconded and carried.

Dr. Jones then said that, realizing quite as fully as anybody could in the American Medical Association the very valuable work in organization that is being done for the medical profession in this country, he desired to introduce the following resolution and move its adoption:

Resolved, That the House of Delegates approves and endorses the work of the Committee on Organization, and requests that the present chairman, Dr. McCormack, continue the work.

The resolution was seconded by several.

Dr. McCormack said:

Mr. President and Gentlemen:—Before that resolution is put I feel it is proper for me to say a few words so that if it is adopted, and it is deemed best that I should continue in this work, it may be done with the full understanding between those representing the medical profession of this country and myself. I came here with the understanding, and have understood for months beforehand that my duties as Organizer should end with the close of this meeting, but at the earnest solicitation of my friends in various sections of the country I have consented to, at last, consider the advisability of continuing the work. If it is to be done successfully, it is essential that I should have the co-operation of the profession of every state in the Union to an extent which I have not yet had. In many of the states I have had almost to beg my way into them, because it seemed to be understood that I was either representing The Journal or the Association in a sense that its ends were to be furthered rather than the upbuilding of the local societies and the general profession in the localities I visited. What I would like to have understood is, that the gentlemen here go back to their homes and represent to their fellows that if I am to visit their states and their sections, it will be fully in the interest of the local profession, in the interest of the county society, and in no sense except as a representative of the Association.

Another impression which has greatly militated against my work is one which has appeared to exist in many sections and even at the meetings of the Association. There has crept out a feeling, to a degree at least, that the business affairs of the Association are being managed in the interests of a clique, or of a set of men who do not represent in the broadest sense the best interests of the Association. This feeling crept out in the discussion yesterday in connection with the inauguration of steps for establishing a medical directory.

I have been associated with the Board of Trustees for the last five years in a very intimate way. If there is a clique or ring in this Association, I certainly must be a part of it, because there has been no part of this work, there has been no step taken that I have not been thoroughly cognizant of, and that I have not thoroughly indorsed. This misunderstanding—and I am sure it is a misunderstanding—has crippled my efforts in various sections of the country, and will continue to cripple them until it is removed.

The members of the Board of Trustees, who are nominated and elected by you (and you are to elect three members this afternoon) have unselfishly represented your best interests. I have had the privilege of attending their meetings while you have been in session. The duties of the board are onerous. These gentlemen are giving their time, their faithful consideration to your interests, and I would like to have you carry this impression to your homes, and, if possible, to get this misunderstanding, so far as it has existed in this country, removed, and forever, so that I may not have to meet this criticism when I come to visit your localities.

I am willing to undertake this work for another year if I can carry your banner, feeling I have behind me the united profession of this country, the united profession as represented in this body, and I can do it with a success which I feel will meet your expectations. But I urge, if this resolution is adopted, and I am requested to continue in this work, that it may be done in this spirit, and with the understanding that I am to have the cordial support of the delegates here and of the profession which they represent in their respective states. (Applause.)

It is hardly necessary that I should say more. I have been associated with my colleague, Dr. Simmons, on the committee almost as a brother for five years. He has given all his time and all his thought day after day, and night after night, as unselfishly as I have done, and he is entitled to the gratitude, to the sympathetic support of every lover of the profession in the United States (applause), and I would like to feel, when I leave Portland to engage in this work, as I shall be glad to do, if I can do it with your support behind me, that it is done with a feeling that the cause for the criticism I have referred to has never existed. I hope to have back of me, so far as it is possible, the support of every delegate, and I will do what I can to organize the profession of his state if he gives me his support. (Applause.)

Dr. William E. Anderson, Virginia, said:

I feel like advocating more strenuously than would have been done, on behalf of Virginia, the adoption of this resolution. As you know, gentlemen of the House of Delegates, I am from a state, one of two, which has not adopted our reorganization plan, but I wish to say that Dr. McCormack's visit to the Medical Society of Virginia did more to foster the spirit and inclination to adopt the plan of reorganization than all the talk we have done in the state combined. I hope he will continue in this work. I am not making an apology for Virginia, but an explanation. We still have the old English spirit of conservatism, and we often think what we have is good enough, and are slow to change. In this particular I think we are making a mistake. I have advocated before the Medical Society of Virginia the adoption of the reorganization plan, and I think it is only a question of time when we will certainly do it. We fought it out at the last meeting, and if Dr. McCormack will assist us, I am certain that Virginia will soon line up. (Applause.)

Dr. Eugene Smith, Michigan: On account of the remarks made by Brother McCormack in regard to our supposed criticism of yesterday, I want to assure Dr. McCormack also that Michigan will meet him most cordially. (Applause.)

Dr. A. E. Baldwin, Illinois, asked that a rising vote be taken on the resolution of Dr. Jones.

This was accordingly done, and the resolution was unanimously adopted.

Election of Officers.

The election of officers being the next order, the President called for oral nominations for the office of President.

DR. MAYO ELECTED PRESIDENT.

Dr. W. L. Rodman, Philadelphia, said:

Mr. President and Members of the House of Delegates:—The profession of the great West have ever been most loyal to the American Medical Association. Wherever the meetings have been held, whether in New England or the far South, every western state has been always ably and fully represented. Recognizing this loyalty on the part of the western profession, I wish on behalf of Pennsylvania, to whom this Association has been most generous in the last few years, to place in nomination one of the ablest, one of the cleanest, one of the best loved of the western profession. Living in a small town, he has made it the surgical Mecca of America. If we delegates were all asked to make a list of the leading five American surgeons, we should doubtless differ as to all the names and as to the order in which we would write them down. But I am very sure that every list would contain, and many of them would place at the head, the name of William J. Mayo. (Loud applause.) Not only has he been recognized in this country, but I happen to know that he recently put to one side a most distinguished honor that was offered him by the University of Edinburgh. He was selected as one of three American surgeons—Keen of Philadelphia, Halsted of Baltimore and Mayo of Rochester, Minn.—to have a degree conferred at a meeting of the University of Edinburgh which is to take place in a few days. Mayo said to me that he was very sorry he could not go; that he had never missed a session of the American Medical Association, and that he should have to forego the pleasure, the honor, which this trip would have afforded him. Therefore, Mr. President, in view of the fact that the great trans-Mississippi country has not been recognized for the presidency for the last eleven years, it seems to me that it would be a graceful thing to tender this able, this clean, this popular representative of American medicine and surgery, the unanimous election to the presidency. (Loud applause.)

Dr. E. Eliot Harris New York:

The House of Delegates of the American Medical Association, according to my experience in this body, has been greatly interested in the union of the medical profession in the state of New York, and as Dr. Bryant, who is president of the Medical Society of the State of New York, and has recently been president of the New York State Medical Society, is a representative of this body, and chairman of an important committee, I came here to present his name for the presidency of this Association, but on learning that the great Northwest had a representative whose name has been mentioned by Dr. Rodman, I feel that I voice the true words of Dr. Bryant and the delegates of New York when I say that they join me in the nomination of Dr. Mayo. (Applause.)

Dr. A. R. Craig, Pennsylvania, moved that the nominations be closed. Seconded and carried.

The President appointed as tellers Drs. W. D. Haggard, Tennessee, and Joseph McFarland, Philadelphia.

Dr. Frank Billings, Illinois, moved that the rules be suspended and that the Secretary be instructed to cast the unanimous ballot of the House of Delegates for Dr. Mayo for President. Seconded by several.

Dr. W. H. Sanders, Alabama, said it occurred to him that it was out of order to make a motion for the Secretary to cast the ballot for any person. All the members are willing to trust the Secretary, but this was out of order.

The Chairman decided that it is competent for the Secretary to case the ballot of the Association for the election of an officer when so instructed.

The motion of Dr. Billings was put and carried.

The Secretary then cast the unanimous ballot for Dr. Mayo as President of the American Medical Association.

The names of the other officers who were duly elected are as follows:

First Vice-President, Dr. Walter Wyman, Surgeon General of the Marine-Hospital Service, Washington, D. C.

Second Vice-President, Dr. K. A. J. Mackenzie, Portland, Oregon.

Third Vice-President, Dr. Eugene S. Talbot, Chicago.

Fourth Vice-President, Dr. E. Denegre Martin, New Orleans.

General Secretary, Dr. George H. Simmons, Chicago (re-elected).

Treasurer, Dr. Frank Billings, Chicago (re-elected).

Board of Trustees, Dr. E. E. Montgomery, Philadelphia, Pa.; Dr. A. L. Wright, Carroll, Iowa, and Dr. H. L. E. Johnson, Washington, D. C.

Oration on Medicine, Dr. F. B. Shattuck, Boston.

Oration on Surgery, Dr. Joseph D. Bryant, New York.

Oration on State Medicine, Dr. W. H. Sanders, Montgomery, Ala.

Boston the Place of Session, 1906.

Dr. M. L. Harris, Chicago, made the following report:

> The Committee on Transportation and Place of Session reports unanimously in favor of Boston, Mass., as the place of session for 1906.
>
> M. L. Harris, Chairman,
> W. A. Jayne,
> John C. Munro,
> G. C. Savage.

On motion, the report of the committee was unanimously adopted.

Committees Announced.

MEMBERS OF THE JUDICIAL COUNCIL.

P. Maxwell Foshay, Chicago. W. S. Foster, Pittsburg, Pa.

COUNCIL ON MEDICAL EDUCATION.

A. D. Bevan, Chicago, Chairman.
W. T. Councilman, Boston. Charles H. Frazier, Philadelphia.
J. A. Witherspoon, Nashville. Victor C. Vaughan, Ann Arbor.

The Secretary read the resignation of Dr. M. L. Harris, Chicago, as chairman of the Committee on Transportation and Place of Session, as follows:

> In view of the fact that I am a member of the Board of Trustees, which position entails a large amount of work, I respectfully tender my resignation as chairman of the Committee on Transportation and Place of Session.

On motion of Dr. Frank Billings, the resignation was accepted and a vote of thanks extended to Dr. Harris for his efficient work as chairman of the committee for the past two years.

COMMITTEE ON TRANSPORTATION AND PLACE OF SESSION.

John C. Munro, Boston, Chairman.
E. Eliot Harris, New York. W. A. Jayne, Denver.
Phillip Mills Jones, San Francisco. William H. Wathen, Louisville.

COMMITTEE ON SCIENTIFIC EXHIBIT.

F. B. Wynn, Indianapolis, Director.

COMMITTEE ON SCIENTIFIC RESEARCH.

Alfred Stengel, Philadelphia, Chairman.
L. F. Barker, Baltimore. L. Hektoen, Chicago.

COMMITTEE ON ORGANIZATION.

J. N. McCormack, Bowling Green, Ky., Chairman.
P. Maxwell Foshay, Chicago. George H. Simmons, Chicago.

COMMITTEE ON WALTER REED MONUMENT.

W. W. Keen, Philadelphia, Chairman.
Joseph D. Bryant, New York. T. S. Cullen, Baltimore.
R. C. Cabot, Boston. Victor C. Vaughan, Ann Arbor.
Robert F. Weir, New York.

COMMITTEE ON RECIPROCITY.

Wm. L. Rodman, Philadelphia, Chairman.
S. D. Van Meter, Denver. T. J. Murray, Butte, Mont.
Jos. M. Mathews, Louisville, Ky. W. B. Coley, New York.

Committee on N. S. Davis Memorial.

The Secretary read the following letter from Dr. Henry O. Marcy, Boston:

> Permit me to suggest the appointment of a committee to receive funds for the erection of a suitable memorial to Dr. N. S. Davis, "the founder of the American Medical Association." Also that the privilege may be mine of contributing the first $100 toward the same.

Dr. A. E. Baldwin, Illinois, moved the appointment of a committee of five for this purpose. Seconded.

Dr. H. L. E. Johnson, District of Columbia, moved to amend by appointing a member from each state and territory in the Union. Seconded.

Dr. Baldwin accepted the amendment, with the addition that Dr. Marcy be made a member of that committee.

The original motion as amended was carried.

Time of Next Session to Be Decided Later.

Dr. A. R. Craig, Pennsylvania, moved that the time of meeting be left to the discretion of the general officers. Seconded and carried.

Committee on Sections and Section Work.

REPORT ACCEPTED AND RECOMMENDATIONS APPROVED.

Under the head of "Unfinished Business," Dr. Joseph McFarland, Pennsylvania, presented the following report of the Committee on Sections and Section Work:

The committee met after the meeting of the House of Delegates on Wednesday afternoon, July 11, the members present being Drs. Wells, Foss and McFarland.

TO ALLOW MEMBERS TO READ PAPERS IN MORE THAN ONE SECTION.

In regard to the recommendation contained in the address of President Musser, that some action be taken for facilitating the Section work, it was decided that two steps in this direction might be recommended to the House of Delegates. The first is that favorable action be taken on the amendment to the By-Laws presented yesterday (page 280), by which the privilege of reading papers in more than one section might be granted the members. The commitee realizes the difficulties that may arise from the abuse of the privilege, but believes that the benefit it would be to the smaller sections would greatly outweigh it.

As already explained, it would afford members an opportunity to read clinical papers in the Section on Practice of Medicine and the Section on Surgery and Anatomy, and technical papers in the appropriate sections—Pathology and Physiology, Hygiene and Sanitary Science, etc. This could not be to the disadvantage of the large sections whose programs would be relieved of titles of limited interest, and would be of great advantage to the smaller sections whose programs are not so easily filled.

TO INCREASE JOINT SECTION MEETINGS.

A second factor in the facilitation of the section work, and one which appeals strongly to the committee, is an increase in the number of conjoint meetings between related sections. The past tendency to differentiation which led to the formation of the sections, and of so many sections that some were obliged to combine in order to maintain their existence, has for its chief evil the loss from each section of many members whose discussion of its papers would be of great benefit to the section in which they are read. Also that many papers of equal interest are read at the same time before different section meetings in different places so that it is impossible to hear them all. Of course, the committee realizes that this is largely inevitable and irremediable, but it believes that much could be done to improve the present state of things should the officers of the various sections early make arrangements for a certain number of conjoint meetings.

To explain this idea more clearly, it may be pointed out that most questions relating to the infectious diseases are of common interest to clinicians, pathologists and bacteriologists, hygienists and sanitarians, and would come within the scope of the work of three sections. Could a time, therefore, be set aside for such papers to be considered at a conjoint meeting of the three sections, it would be greatly to the advantage of the members of the two sections before which they would not otherwise be read, and of enhanced advantage to the members of the section in which they are read, in that they would have the benefit of the wisdom and knowledge of the members of two other sections by whom the papers would be discussed.

This recommendation does not refer to symposia. The sense in which it is intended is much broader. Without reference to any particular disease, all papers offered to the Section on Practice of Medicine, having the relation to infectious diseases already intimated, might be arranged to fall on a certain afternoon, on which the work of the other two mentioned sections might be temporarily or finally suspended. Papers on medical affections, remediable by surgical intervention, might be arranged to appear at a time when the members of both these sections could combine, or if the number of papers on these programs is too great to permit either to suspend for even a part of a session, at some time when in one or the other section papers of most limited interest were being read.

Should it not be found feasible to carry out the idea of conjoint meetings, with the attention it seems to merit at the present time, the first step in that direction should be an orderly grouping of the papers by the secretary of the section, and a thoughtful arrangement of the general program by the Secretary of the Association, so that the most interesting meetings of the various sections will not occur simultaneously.

The committee believes that the integration of the section work might be facilitated by a general meeting between the newly elected section officers on the last day of the annual session, at which measures for the success of the next session can be devised.

SECTION ON ELECTROTHERAPEUTICS DISAPPROVED.

In reference to the petition (page 256) for the formation of a section on electrotherapeutics, the Secretary of the Association, who has received the correspondence, informs the committee that only one letter has been received in regard to the matter, and the committee thinks the demand for the section too limited to insure its permanence and success.

SECTION ON PHARMACOLOGY AND THERAPEUTICS NAME APPROVED.

In regard to the suggested change in the name of the Section on Pharmacology, the committee believes that each section is best able to define itself and its scope. We understand that on two occasions the section has voted for this change, though this is the first time it has appeared before the House. We, therefore, recommend that according to the petition of the section, its name be changed to the Section on Pharmacology and Therapeutics. (See page 278.)

HONORARY AND ASSOCIATE MEMBERS.

The committee reports favorably on the nominations of Prof. J. Hirschberg, Berlin, to honorary membership in the Association, and of F. S. Lee, M. H. Fisher and G. T. Kemp, associate members, to the Section on Pathology and Physiology.

JOSEPH MCFARLAND, Chairman,
JOHN W. FOSS,
EDWARD F. WELLS.

Dr. Baldwin, Illinois, moved that the report of the committee be accepted and the recommendations approved. Seconded and carried.

Report of Reference Committee on Amendments.

Dr. Craig, Pennsylvania, presented this report, as follows:

The Reference Committee on Amendments to Constitution and By-laws urges on the House of Delegates the importance of making only such of the following suggested changes in the by-laws as are imperative:

Book IV, Chapter II, Section 12 (page 28): "No member shall have the right to present the same paper before more than one section at any annual session."

Amendment to Book IV, Chapter II, Section 12 (page 28.) "No member shall have the right to present more than one paper on the same subject at any annual session."

RESOLUTION BY SECTION ON PHARMACOLOGY, TUESDAY, JULY 11.

Resolved, That the delegate of this Section, J. W. Foss, Arizona, be instructed to present the following amendment:

To amend: Book IV, Chapter II: "Sections." Section 12, so as to read: "A member shall have the right to present a paper or papers before only two sections at any annual session."

MEMBERS MAY READ PAPERS BEFORE ONLY TWO SECTIONS.

The committee advises the adoption of the last suggestion, with an addition, so that the By-Laws shall read as follows:

Book IV, Chapter III, Section 12: "A member shall have the right to present a paper or papers before only two sections at any annual session. When more than one section is to be addressed, the titles and abstracts of the papers must be submitted to the secretaries of both the sections before which the papers are to be read." (See Book IV, Chapter II, Section 9, page 27.)

PROVISIONS FOR CHAIRMAN OF HOUSE.

The committee has considered the suggested amendments to by-laws offered by Dr. T. J. Happel at a previous meeting (page 280). The committee feels that the task of presiding over this body should be neither unpleasant nor laborious. If, however, it proves distasteful to the President, he may delegate this work to any one of the four Vice-Presidents, and, should it so occur that neither of these officers present themselves to preside over the House of Delegates, this body will, as it has done in the past, elect a temporary chairman. The committee, therefore, does not concur in the passing of Dr. Happel's amendments.

ALEX R. CRAIG, *Chairman.*
W. M. HARSHA,
J. GARLAND SHERRILL,
WM. N. WISHARD,
FRANK PASCHAL.

It was moved that the report of the committee, with its suggestions, be concurred in. Seconded.

After some discussion regarding the amendments of Dr. Happel, which was participated in by Drs. Harris, Baldwin, Craig, Johnson, the motion was put and carried.

Report of Reference Committee on Hygiene.

SANDERS' RESOLUTION ON DISEASE IN WAR ADOPTED.

Dr. W. H. Sanders, Alabama, presented the report of the Reference Committee on Hygiene and Public Health with reference to a resolution relative to preventable deaths by disease in time of war, which was offered at a previous meeting and referred to this committee. (See page 279.)

The committee recommends the adoption of this resolution.

On motion of Dr. J. D. Griffith, Missouri, the recommendation of the committee was concurred in.

COMMITTEE TO ACT ON UTERINE CANCER PROPOSITION.

In regard to the following resolution from the Section on Obstetrics and Diseases of Women, which was referred to the committee (page 280), together with the accompanying report on "What May Be Done to Increase the Percentage of Cures in Uterine Cancer?" the committee recommends that a committee of five be appointed by the chairman to investigate the plan proposed by the committee of the Gynecologic Section of the International Congress of Arts and Science, to amend it as it sees fit and, with the sanction of the advisory council, put such portion of it into execution as it sees fit.

On motion of Dr. Bacon, Illinois, the recommendation of the committee was concurred in. The resolution and report are as follows:

Resolved, That the Section on Obstetrics and Diseases of Women refer to the House of Delegates at the earliest time during the present session, the report of a committee appointed by the chairman of the gynecologic section of the International Congress of Arts and Science, held at St. Louis, Sept. 24, 1904, to report to the present session of the American Medical Association suggestions as to what may be done to increase the percentage of cures in uterine cancer, and to urge of this body the appointment of a special committee to take charge of this matter and to report to the Section on Obstetrics and Diseases of Women as to results at its annual session.

WHAT MAY BE DONE TO INCREASE THE PERCENTAGE OF CURES IN UTERINE CANCER?

At the meeting of the Gynecologic Section of the International Congress of Arts and Science, held at St. Louis, Sept. 24, 1904, Dr. John C. Webster moved that the chairman of the section, Dr. Howard A. Kelly, appoint a committee to report at the next session of the American Medical Association and to suggest what may be done to increase the percentage of cures in uterine cancer. The motion of Dr. Webster was seconded and carried, and a committee, consisting of Dr. John A. Sampson, Albany, N. Y.; Dr. Fred J. Taussig, St. Louis, and Dr. John G. Clark, Philadelphia, appointed.

This committee herewith submits its report. It wishes to emphasize certain clinical facts and formulates suggestions for the education of both physician and patient so that cases may be detected earlier in the course of the disease.

I. Cancer of the uterus is the most frequent form of primary cancer.

II. Cancer of the uterine cervix is more important than cancer of the body of the uterus, because it is much more frequent and malignant. For the above reasons cancer of the uterine cervix will be considered first.

1. Its course is rapid; patients rarely live over three years, and about three-fourths of them die within two years, and one-third within one year after the first manifestation of the disease.

2. Probably in from 75 to 80 per cent. of the cases in this country the patients present themselves too late for anything but palliative treatment, and the disease returns in from 75 to

90 per cent. of the patients operated on, depending on the extent of the disease at the time of the operation and the nature of the operation.

3. The disease apparently is curable if it can be completely excised and implantation avoided.

4. The main hope lies in operating before the disease metastasizes, because only a very small percentage of the patients can be cured after this takes place; therefore, it is most important that an early diagnosis should be made and the operation done as soon as possible after making the diagnosis.

5. The form of operation is of secondary importance to the early diagnosis, but a wide excision of the parametrium, together with the primary growth, is demanded.

6. An earlier diagnosis is possible in a large percentage of the cases. Probably over 50 per cent. of the operable cases and a much higher percentage of the inoperable cases, bleeding has been present for over six months before operative treatment is considered. As the course of the disease is usually rapid, six months or even less of neglected uterine bleeding permits the disease to extend so far that in only a small percentage of the cases can the patients be cured. Still, it must be remembered that in many apparently advanced cases the patients have been permanently cured by the more recent radical operations.

7. Symptomatology of cancer of the uterine cervix:

(A) Disease of midlife, occurring especially between the ages of 30 and 50.

(B) It rarely occurs in women who have not had children.

(C) Bleeding or a blood-stained discharge is usually but not always present. This may be: 1. Slight, "only a show," appearing at irregular intervals, as on exertion, after sexual intercourse, after using a douche or straining at stool; or it may be slight but constant, the patient noticing that her clothes are slightly stained on taking them off at night. 2. In other cases, bleeding may be more profuse, as a prolonged or irregular menstruation or a return of the menses after the menopause. 3. In still other cases, severe hemorrhages may occur, appearing either as the result of some unusual exertion or during menstruation, or their cause may not be apparent.

(D) In a small percentage of the cases, bleeding may be absent, but usually some other sign, such as a serous discharge, calls attention to the growth. In a small percentage of the cases, all symptoms referable to the growth may be absent for a long time.

(E) Pain caused by the growth usually occurs later in the course of the disease, and must be sharply differentiated from pain arising from pelvic trouble independent of the cancer, such as an inflammatory condition of the tubes and ovaries.

III. Cancer of the body of the uterus is much less frequent than cancer of the cervix; it grows much more slowly and remains restricted to the uterus for a long time, and for these reasons the diagnosis is usually made earlier in the course of the disease and its operative treatment is attended with a lower primary mortality and a much higher percentage of cures. Cancer of the body of the uterus usually occurs in older women than cancer of the cervix and frequently in women who have not had children.

IV. It is evident that all patients with uterine bleeding or other symptoms referable to the uterus should be examined as soon as possible, and if the diagnosis is not clear the uterus should be curetted or a small piece of the cervix excised and not thrown away, but placed in 10 per cent. formalin or ordinary alcohol and sent to a competent pathologist.

V. It is most desirable that the work of educating the general body of physicians and the public at large, in particular the mothers, concerning the nature of this disease should be undertaken by a general medical association, in order that it may become universal and reach as many as possible, and that all appearance of advertising should be done away with. For these reasons, it seems fitting that the American Medical Association should take the initiative.

VI. The following measures are suggested to this end:

(A) The education of the general body of physicians in this affair may be furthered:

(1) By mailing, under separate cover, to each member of the American Medical Association, a reprint of this report.

(2) By emphasizing on all occasions the importance of an immediate examination of all patients having symptoms resembling those of uterine cancer.

(3) By obtaining the assistance of university and other pathologic laboratories in the examination of bits of cervical tissue or scrapings. Such work should be done free of charge, except when patients can afford to pay a fee of from $5 to $10.

(4) By suggesting to the state boards of health the advisability of establishing a large number of stations throughout the country where a small bottle containing a 10 per cent. formalin solution, a mailing box, directions as to the removal of tissue for examination and the address of laboratories where examinations are made, may be obtained.

(B) The education of the laity, especially the women, can also be promoted. In Prussia, where the education of the women along these lines was attempted on a large scale, results already show a striking increase in the percentage of cases discovered early in the disease. The method employed there, i. e., newspaper advertising, is not considered advisable for this country. In other ways, however, much good may be accomplished.

(1) In the first place the family physician should seek to inculcate, as far as possible, among his circle the necessity for early investigation of suspicious symptoms.

(2) Secondly, in our large cities, where educative work is done among the poorer classes by social settlements and other charitable organizations, lectures or informal talks should be given to mothers on this subject by district nurses, or by nurses at the head of hospitals, who are provided with the necessary information.

(3) Finally, the co-operation of such national organizations of women, as the "American Federation of Women's Clubs," should be sought with the view that lectures or informal talks be held before their individual bodies by trained nurses capable of explaining to them the symptoms and the necessity for early operation in uterine cancer.

VII. Further we would advise that a communication be addressed to each of the state medical associations affiliated with the American Medical Association, inclosing a reprint of this report, with the recommendation that each state seek to assist in this educational work along the lines suggested. The bulk of the work must, in the long run, be done by the individual state organizations.

VIII. The work of carrying out the plan as here suggested and of seeking to inspire the interest of state organizations in the matter should be intrusted to a special committee of five to be appointed by the President of this session. This committee would be expected to report at the next session of the American Medical Association on the work thus far accomplished.

Committee on Recording Minutes.

REPORT HELD OVER ONE YEAR FOR ACTION.

The Committee on Recording Minutes reported as follows:

To the President and Members of the House of Delegates of the American Medical Association:—The committee appointed to consider the method according to which the minutes of this house are kept and published and to make recommendations in reference thereto begs leave to submit the following report:

1. The committee finds, by examination of the minutes for several years past, that at places they have been incomplete by reason of the omission of reports, resolutions, communications, etc., the documents in question being referred to, but not printed in full.

The committee recommends that such omissions be not made in the future.

2. The committee is of the opinion that the names of the members of the House of Delegates present at each session should be reported in the minutes. Inasmuch as this could not be done without a call of the roll, the committee recommends that calling the roll be made a part of the regular order of business at each sitting of the house.

3. The committee is also of the opinion that to prepare complete and full minutes of a session of the House of Delegates requires more time than is available between the sittings. The committee recommends, therefore, that, while the Secretary should read at the opening of each session a memorandum of what transpired at the previous sitting, such memorandum shall not be deemed the complete and final minutes of the session.

4. The committee recommends that as early after each annual session of the Association as can be done the Secretary shall prepare full and complete minutes of the session and cause them to be published in pamphlet form for distribution to the members of the House of Delegates and to be inserted in The Journal for the information of the members of the Association, said minutes to be submitted for adoption at the next annual session and, as a matter of course, to be subject to correction.

5. The committee recommends that the original notes of the proceedings of the House of Delegates, made by the official stenographer, be permanently filed, in order that should differences of opinion arise as to what was said or done such notes can be referred to.

6. According to the information of the committee, ad-

journed meetings of this body have been held in the State of Illinois for the purpose of validating in that state business transacted in other states, and thus technically to comply with the requirements of the charter of the Association. Looking back over the official minutes for several years past, no minutes of such meetings have been found. The committee, therefore, recommends that the transactions of any such adjourned meetings as may be held in the future be published in The Journal and also appended to the minutes of the annual meeting recommended to be published in pamphlet form.

All of which is respectfully submitted.

July 13, 1905.
W. H. Sanders,
F. Paschal,
W. S. Foster,
J. F. Percy,
Donald Campbell.

Dr. Griffith, Missouri, moved the adoption of the report. Seconded.

After some discussion, which was participated in by Drs. McCormack, Sanders and Billings, it was amended that the report of the committee be accepted and its consideration postponed until the next annual session. This carried.

Report of Committee on Amendments.

REAPPORTIONMENT FOR NEW YORK.

Dr. Craig, Pennsylvania, speaking for the Reference Committee on Amendments to Constitution and By-laws, stated that in the case of the State of New York the Committee on Reapportionment has made an exception to that state and has limited that exception to a term which expired May 1, 1905. He moved that this term be extended to May 1, 1906. Seconded and carried.

Report of Reference Committee on Legislation.

INDORSEMENT OF CONTRACT SURGEONS' BILL.

With regard to the resolution from the Section on Stomatology, relating to rank of contract surgeons and dentists in the U. S. Army, the Reference Committee on Medical Legislation and Political Action respectfully reports that the committee is creditably informed that there is already a bill before Congress which has passed the Senate and which has been recommended by the military committee of the House with amendments, but which failed to be brought up on account of the opposition of Speaker Cannon. This bill gives temporary commissions to contract surgeons, which commissions may be revoked by the President when their services are no longer needed. Your committee recommends the indorsement of the bill by the House of Delegates of the American Medical Association with reference to the commissioning of dentists. Your committee recommends that the matter be postponed until the next session of the Association.

On motion, the recommendation of the committee was concurred in.

Bill to Relieve Surgeon-General Hammond's Widow.

REFERRED TO COMMITTEE.

Dr. H. L. E. Johnson, District of Columbia, called the attention of the Committee on Medical Legislation to a bill pending before Congress for the relief of the widow of the late William A. Hammond, Surgeon General of the Army. The bill is as follows:

> A bill to amend the act approved March 15, 1878, entitled "An Act for the relief of William A. Hammond, late Surgeon-General of the Army."
>
> *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That so much of section 2 of the Act, entitled "An Act for the relief of William A. Hammond, late Surgeon-General of the Army," approved March 15, 1878, as provides that said Hammond shall not be entitled to pay while on the retired list of the Army be, and the same is hereby, repealed, and the said Hammond shall be entitled to the pay of a brigadier-general of the Army on the retired list from the date of his appointment and retirement under said Act, on Aug. 27, 1879, up to the date of his death, Jan. 5, 1900, the same to be paid to Esther D. Hammond, his widow.

The bill has passed the House, and Dr. Johnson asked that it be referred to the Committee on Medical Legislation, and it was so ordered.

Resolution of Thanks to Portland.

Dr. J. N. McCormack offered the following:

> *Resolved,* That the cordial and unanimous thanks of this Association be and are hereby tendered to the medical profession and citizens, and especially to the charming women of the city of Portland and the State of Oregon, for the hospitality so generously, continuously and successfully extended during the session; to the Committee of Arrangements for its faithful and laborious efforts in our behalf; to the press of Portland, for the full and complete reports of our proceedings, and to all others who have in any way assisted in making this one of the most pleasant and profitable in the history of the Association. Also, our thanks to the President, Dr. John H. Musser, and the President-elect, Dr. Lewis S. McMurtry, for the able, impartial and courteous manner in which they have discharged their duties during the year, and at this annual session.

It was moved that the resolution be adopted unanimously by rising vote. Seconded and unanimously carried.

Constitution Declared Valid.

Dr. W. H. Sanders, Alabama, moved that a committee of five be appointed by the chairman to consider the validity of the Constitution under which the Association is now living. Seconded.

After some discussion, which was participated in by Drs. Craig and McCormack, it was moved that the motion be laid on the table. Seconded and carried.

For Free Copies of Transactions.

LARYNGOLOGY SECTION RESOLUTION REFERRED TO TRUSTEES.

The Secretary read the following resolution, passed by the Section on Larynology and Otology:

> *Resolved,* That the Section on Laryngology and Otology requests the House of Delegates to make arrangements to have the members of sections present at sessions of the A. M. A. receive the bound volumes of the transactions of their respective sections without the charge of $1.00 heretofore collected, and that said transactions be delivered to such members.
>
> Otto T. Freer,
> Secretary of the Section.

On motion of Dr. Craig, Pennsylvania, this resolution was referred to the Board of Trustees.

Porto Rico Association.

The Secretary presented a communication from Dr. A. M. Fernandez-Ybarra in regard to the admission of the Medical Association of Porto Rico, and, on motion of Dr. Jones, California, the communication was referred to the Committee on Organization.

Invitations for 1907.

The Secretary read several telegrams from San Francisco and Denver, inviting the Association to hold its meeting in 1907 in one of these cities.

On motion, these telegrams were referred to the Committee on Transportation and Place of Session.

Report of Judicial Council.

The attention of the President was called to the fact that the Judicial Council had not made any report at this session, as is required by the by-laws.

The Secretary stated that the Judicial Council was unable to get a quorum present in Portland to transact any business.

Final Adjournment of House of Delegates.

There being no other business to come before the meeting, on motion, the Association then adjourned to meet in the city of Boston in 1906.

Members of House of Delegates in Attendance

ALABAMA.

Robertson, Wm. H.
Morris, Lewis C.
Sanders, William H.

ARIZONA.

Hughes, Henry A.

ARKANSAS.

Collings, Howard D.

CALIFORNIA.

Jones, Phillip Mills.
Hamline, Oliver D.
Hunkin, S. J.
Terry, W. I.

COLORADO.

Jayne, W. A.
Gildea, P. F.

CONNECTICUT.

Carmalt, W. H.

DISTRICT OF COLUMBIA.

Kober, Geo. M.

FLORIDA.

Bowen, Frederick J.

GEORGIA.

Coleman, Thomas D.
McRae, Floyd W.

HAWAII.

Wayson, J. T.

IDAHO.

Waterhouse, G. M.

ILLINOIS.

Harsha, Wm. M.
Billings, Frank.
Percy, J. F.
Sutton, Emerson M.
Taylor, L. C.
Bacon, C. S.
Cook, J. C.
Smith, D. C.

INDIANA.
Daugherty, C. A.
Schell, Walker.
Wishard, W. N.
Emery, C. H.

IOWA.
Dorr, E. E.
Brockman, D. C.
Bierring, W. L.
Powers, Fred W.

KANSAS.
Daily, F. M.

KENTUCKY.
McCormack, J. N.
Sherrill, J. Garland.
Price, A. D.

LOUISIANA.
Chassaignac, Charles.

MARYLAND.
Winslow, R.
Smith, R. P.

MASSACHUSETTS.
Williams, C. H.
Munro, J. C.
Richardson, M. H.

MICHIGAN.
Smith, Eugene.
Garner, H. B.
Robbins, Frederick W.
West, W. K.

MINNESOTA.
Workman, H. M.
Rogers, J. T.

MISSISSIPPI.
Williams, J. D.
Harrison, W. H.

MISSOURI.
Dorsett, W. B.
Kieffer, A. R.
Griffith, J. D.

MONTANA.
Campbell, D.

NEBRASKA.
Pickett, Ira N.
Moore, R. C.

NEW JERSEY.
Halsey, Luther M.
Hollingshead, E.
Marcy, Alexander.

NEW MEXICO.
Black, B. D.

NEW YORK.
Ferguson, Everad D.
Harris, E. Eliot.
Goffe, J. Riddle.
Cott, Geo. F.

NORTH DAKOTA.
Stickney, V. H.

OHIO.
Bonifield, C. L.
Duncan, J. A.
Bain, J. D.
McCurdy, John.
Kimmell, J. A.

OKLAHOMA.
Hatchett, J. A.

OREGON.
Smith, C. J.

PENNSYLVANIA.
Frankhauser, Fremont W.
Gable, Isaac C.
Stevens, Cyrus L.
Craig, A. R.
Foster, W. S.
Guthrie, G. W.
Rodman, W. L.
Stengel, Alfred.

SOUTH DAKOTA.
Warne, R. C.

TENNESSEE.
Miller, W. J.
Herron, J. T..
Haggard, W. D.

TEXAS.
Paschal, Frank.
Knox, R. W.
Turner, S. S.
Hudson, S. E.
Wood, W. A.

UTAH.
Baldwin, S. C.

VERMONT.
Hammond, S. W.

VIRGINIA.
Anderson, Wm. E.
Johnston, Geo. Ben.

WASHINGTON.
Dewey, Henry W.

WEST VIRGINIA.
Wilson, L. D.
Dickey, J. L.

WISCONSIN.
Sheldon, C. S.
Caples, Byron M.
Evans, Edward.

WYOMING.
Wicks, J. L.

PHILIPPINE ISLANDS.
Musgrave, W. E.

U. S. P. & M.-H. SERVICE.
Cumming, H. S.

U. S. ARMY.
Woodruff, Charles E.

U. S. NAVY.
Boyd, John C.

OBSTETRICS AND DISEASES OF WOMEN.
Pantzer, Hugo O.

DISEASES OF CHILDREN.
Hollopeter, W. C.

OPHTHALMOLOGY.
Snyder, W. H.

PATHOLOGY AND PHYSIOLOGY.
McFarland, Joseph.

STOMATOLOGY.
Baldwin, A. E.

NERVOUS AND MENTAL DISEASES.
Wolfstein, D. I.

PHARMACOLOGY.
Foss, John W.

PRACTICE OF MEDICINE.
Wells, Edward F.

CUTANEOUS MEDICINE AND SURGERY.
Baum, Wm. L.

LARYNGOLOGY AND OTOLOGY.
Barnhill, John F.

OFFICIAL MINUTES—GENERAL MEETINGS

First General Meeting—July 11

The Association met in the Armory of the Oregon National Guard at 10:40 a. m., and was called to order by the President, Dr. John H. Musser, of Philadelphia.

Ex-presidents and vice-presidents were invited to take seats on the platform, and among those who accepted the invitation were Drs. Henry O. Marcy, Frank Billings and Edward Jackson.

Address of Welcome.

The Rev. A. A. Morrison offered prayer, after which President Musser introduced Honorable M. C. George, of Portland, who delivered an address of welcome on behalf of the state of Oregon, in the absence of Governor George E. Chamberlain.

Mr. George said:

Honored Members of the American Medical Association:

I appreciate very highly the honor of representing the governor in extending to you a hearty welcome to the state of Oregon. Governor Chamberlain is unavoidably absent from the state, but I want to disabuse your minds of any impression that he left the state because of the influx of physicians, or on account of any apprehension that this distinguished body of surgeons might perform an operation on him. (Laughter.)

The governor of this state is a most excellent man or he never would have been elected democratic governor of this republican state (Hurrah, and applause); and I will be followed on this platform in welcoming you by that other prince of good fellows, Mayor Lane, of this city, another democrat who has been elected mayor of this great republican city. (Applause.) I want you to know that strong as this republican county is, it has a democratic sheriff and a democratic prosecuting attorney. (Laughter and applause.) I want to tell you that this is a mighty good place for Democrats, if there are any among you, and I judge by your handsome looks that there are. (Laughter.) If you can leave your patients in the East and come out here and settle with us, we will assure you an office before very long. This is a good place for physicians. Over in our sister state of California they have elected a physician governor of the state (applause), and in Oregon we have a great many physicians who want to be governor of Oregon. (Applause.)

In behalf of the state, I want to welcome you personally and as members of this distinguished body. We are proud of our state. We think we are wonderfully situated from the standpoint of Nature. We are here half way between the north and the south and the great opening of the Pacific. Along by our city flow the waters of the river through this fertile valley, and close by is the Columbia river, that heads the way up in British Columbia, divides the state of Washington, unites there with a branch which heads over into Wyoming, comes down and traces the border of Idaho, and these two great branches uniting together, pass on down between Oregon and Washington, bearing the commerce of the great interior on down by the city of Portland and on into the ocean. And right here I might call your attention to this remarkable fact, providential as it may seem, that the All-wise Ruler of the Universe has seen fit to place the great and mighty Willamette river and the noble and mighty Columbia river right alongside the city of Portland. We would like to have you come out here and settle down, as I know you appreciate a good thing when you see it. We are made up here of the best blood of all countries, and we want the best blood of all countries to come here and settle and grow up with us in the future. (Applause.) We have been built up from all the states of the Union, and I may say without any disparagement to any other portion of this great Union that we are the blooded people of this nation, barring myself, of course. (Laughter.) And judging by the way you act, I know you are by this time.

On behalf of the judiciary of this state, I will promise you one thing, that if any of you ever come before any of us during your stay in this city, we will give you the best that we have. (Laughter.) Again, I want to extend to you a most hearty welcome on behalf of the state of Oregon and to express the hope that you will come out here and locate if you can only arrange with your patients at home so that they can dispense with your services. We want you to help and add to the good people of this country, for of such, I assure you, is the kingdom of the Pacific of the Northwest. Now, to you all personally, sincerely, I extend to you a hearty welcome to the state and trust that your stay with us will be as pleasant to you as I know your deliberations will be beneficial to the profession at large and to the people generally of this country. (Loud applause.)

The Address of the Mayor of Portland.

President Musser then introduced the Mayor of the city of Portland, Dr. Harry Lane, who, among other things, said:

We are glad, pleased and proud to have you with us. You are a representative gathering of a most intelligent body of American citizens. My friend, Judge George, being a lawyer, does not appreciate that. Lawyers have a reserve store of wit, of old jokes, which they lay up and let loose on the physicians. Their profession is to talk, the physicians' is to work. The physician does not often get the opportunity to return the compliment. Not long ago there was an estimable citizen of this city who had been drinking more than was good for him. He became nervous and was sent to an asylum, or rather to a more quiet place, to recuperate and to recover his nervous tone. While he was up there a friend of his, an attorney by the way, took him out for a walk, and during this walk they happened into a cemetery. It was a cool and shady place. They sat around, looked over the tombstones and read the epitaphs which were written on them, and finally they came to a grave, and this fellow, who was still a little bit muddled from heavy drinking, stepped up before it and read the epitaph which was printed on the tombstone, and it was over the grave of an eminent attorney who died a number of years ago. It read something like this: "Here lies So-and-So, an eminent attorney and an honest man." The citizen from Portland looked at it very carefully and said to his friend, "Billy, Billy, what did they bury both of those men in the same grave for?" (Applause and roars of laughter.)

This country is new to most of you. To some of us it is an old story. I was born here. My people came here in 1848, and fought the Indians after I was born, and as early companions I had the Indian boys to play with around about the country. So it is an old story with me.

I wish to say, by the way, that I noticed a slight oversight on the part of my friend, Judge George. He is an amiable gentleman and a good attorney. He makes an excellent judge. But he forgot to tell you that I am a physician. He gave me credit for being a democrat, but I am also a physician and a member of this Association. (Applause.)

The railroads which brought you into this section of our country follow the line of the trail which the Indians made over the mountains, and they followed the trail made by deer and elk. Then came along the white man, and he constructed railroads. If you have time, and the inclination, you will find these old Indian trails leading from the base of Mt. Hood right along the Cascade Range to the east of us. I have been through these mountains and have seen them in their rugged beauty and grandeur. We have a different climate, a pleasanter climate, from that you have in the East. The air is sweet and balmy. It will do you good. The scenery is fine. It is fascinating and picturesque. We have mountain ranges and snow-capped mountains. We can grow almost anything in this climate. We will be glad to have you look over our country, take an excursion up the river, and see the beauties of the Columbia, which surpasses the Hudson river. If you tell the people in the East what you see here, they will not believe you. You will find cherries here as large as small plums. When you tell them about that, they are ready to say you are lying, and that may be. (Laughter.) You may exaggerate a bit, of course, and that goes with the climate, too. (Laughter.)

I have noticed that a lawyer when he gets sick, when he becomes ill in his body, is just as anxious, perhaps a little more, to get a physician to sit by his bed as any other citizen in the country. You, as members of the medical profession, have noticed that.

I do not wish to make a prolonged talk, as I came here without notes. I was recently elected mayor of this city, and I find the position of mayor does not jibe up and fit in with the practice of medicine. A delegation is now awaiting me at the city hall to consider matters of vital importance. I was elected mayor of this city in spite of the fact that I was a democrat, and I want to say to you that it was not on account of my personality, nor my good looks, nor anything else, but just simply because I told the people that if they elected me mayor I would execute the laws as I found them on the statute books. (Applause.) There were many people who thought that this was a brave proposition, but it is an easy one to perform. The laws are there, and I shall see to it that they are executed. There is an ordinance to the effect that saloons shall not have boxes in them. Two weeks ago I was inducted into office as mayor, and in looking over the ordinances I found such a law, and I instructed the chief of police to put it into effect. I propose to enforce these laws and see how the people like it. I did not make them; I am merely here to execute them.

Again, I wish to say, that we are pleased and proud and it is an honor, a great honor, to have the American Medical Association meet in our city. We want to treat you well. We are a kindly people. Our climate is soft and mild, and that mellows us some. We want you to enjoy yourselves, and I assure you that we will do everything we can to make your visit interesting. I have even gone so far as to instruct the chief of police to be gentle with you (laughter), and not to pull you in under any circumstances if it can be avoided. And so you will have me, as your fellow member of the Association, and the chief executive of this city, to stand by you in almost anything you may do while you are here. (Applause.) I thank you kindly. (Loud applause.)

Welcome from the Oregon Profession.

Dr. George F. Wilson followed with an Address of Welcome as President of the Oregon State Medical Society.

Dr. Henry W. Coe, president of the City and County Medical Society, also welcomed the Association on behalf of that organization.

Report of Committee of Arrangements.

Dr. K. A. J. Mackenzie, Portland, chairman of the Local Committee on Arrangements, made a brief verbal report, and announced the following program of entertainments:

TUESDAY EVENING, JULY 11.

General reception and smoker, with special program of entertainment and with refreshments, at the American Inn, Lewis and Clark Fair Grounds, given to the members of the American Medical Association by the city and county, state and district societies.

WEDNESDAY, JULY 12.

Trolley ride to Portland Heights, 7 a. m. Cars leave First and Washington streets. Free to members and their families.
Afternoon—Ladies' entertainment.
Evening—Receptions at private residences.

THURSDAY, JULY 13.

Trolley ride to Portland Heights, 7 a. m. Same as Wednesday.
Afternoon—Ladies' entertainment.
Evening—Grand fête on Exposition grounds, with special program in New York State Building; music, dancing, fireworks, refreshments, etc.

FRIDAY, JULY 14.

Columbia River excursion. Boats leave Ash street dock at 8 a. m.

Introduction of Professor Hirschberg.

Professor Hirschberg, of Berlin, Germany, professor of diseases of the eye in the University of Berlin, was invited to the platform and introduced to the Association.

Introduction of President-elect.

The retiring President, Dr. Musser, then introduced the President-elect, Dr. Lewis S. McMurtry, Louisville, who delivered the address of the president.

He selected for his subject, "The American Medical Association: Its Origin, Progress and Purpose." (This appeared in The Journal, July 15.)

Second General Meeting—July 11

The Association met at the First Presbyterian Church at 7:40 p. m., and was called to order by President McMurtry.

Dr. Charles G. Stockton, Buffalo, N. Y., delivered the Oration on Medicine. (This was published in The Journal, July 15.)

Dr. J. Collins Warren, Boston, delivered the Oration on Surgery. (This was published in The Journal, July 15.)

On motion of Dr. Frank Billings, Illinois, a vote of thanks was extended to the orators for their interesting and instructive orations.

Adjourned.

Third General Meeting—July 12

The Association met at the First Presbyterian Church at 7:30 p. m., with the President in the chair.

Dr. Geo. Blumer, San Francisco, was introduced and delivered the Oration on State Medicine. (This was published in The Journal July 15.)

Dr. Henry O. Marcy, Boston, followed with a "Memorial Address on Dr. Nathan Smith Davis."

Adjourned.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

July 8.

1 *Unavoidable Errors in the Diagnosis of Psoas Abscess. H. A. Wilson, Philadelphia.
2 *Treatment of Some Neuralgias by the Roentgen Ray. C. L. Leonard, Philadelphia.
3 Fibromyoma of the Corpus Uteri Coexisting with Squamous Epithelioma of the Cervix. A Rare Combination. B. F. Barr, Philadelphia.
4 *Traumatic Cerebral Diabetes. M. J. Seifert, Chicago.
5 Fractures and Dislocations of the Ulna: A Review with Report of Cases. J. S. Wight, Brooklyn, N. Y. (To be continued).
6 Premonitory Symptomatology of Laryngeal Tuberculosis, with Especial Reference to Tuberculous Sublaryngotracheitis. R. H. Skillern, Philadelphia.

1. **Errors in Diagnosis of Psoas Abscess.**—Wilson cites enough instances to show that the diagnosis of psoas abscess is not always easy, and that each case is worthy of the most careful study in every phase presented. The presence of well-marked evidence of spinal caries, he states, is sometimes misleading, and great spinal deformity is often present long after the activity of the bone disease has subsided. When conditions more or less closely resembling psoas abscess are also present, the preponderance of evidence is often in favor of psoas abscess when in reality some other disease or condition is present. The knowledge that these errors in diagnosis have occurred under the most critical inspection and elaborate study, Wilson says, is convincing that while they are not always avoidable, they should be guarded against as far as possible.

2. **Treatment of Some Neuralgias by the Roentgen Ray.**—Leonard calls attention to the work that has been accomplished in relieving intolerable conditions of pain by the use of this agent. The cases which he reports indicate what may be accomplished under favorable conditions and are not to be taken as a definite measure of an agent with which a measured dose can be applied to accomplish the same result. Each patient, he states, must receive individual care and treatment. So far, no generalizations can be made, nor can definite results be promised. They depend on the reaction of the patient and the adaptation to each case of the quality of ray necessary to it. Leonard reports as apparently cured patients with tic douloureux, chronic migraine and facial neuralgia. These were chronic cases and the patients had remained free from pain from one to two years after treatment. In one or two cases palliative results alone were observed. He concluded that although these cases are possibly too few and of too short standing from which to deduce any valuable conclusions, they at least demonstrate that in certain conditions of intolerable pain this agent can relieve and produce apparent cures that persist for a considerable length of time. Although it can not be stated definitely which particular classes of patients will be benefited, he states that there is at least a prospect of temporary relief for all, and a probability that a further development of technic will increase the number of cases in which permanent results can be secured. Neuralgias, he believes, are not the only painful conditions that can be relieved by this agent, for articular pain, as seen in gout and rheumatism, even after deformity and stiffening has taken place, in many cases can be permanently relieved, while the pain certainly can be decreased.

4. **Traumatic Cerebral Diabetes.**—Seifert reports a case in a boy of 16 who fell down a 12-feet elevator shaft, striking the floor head first, excoriating the skin over the right frontal and molar regions. He was unconscious one hour, stupefied seventy-two hours. Urinalysis made in less than twelve hours after the accident showed specific gravity 1,036; sugar, albumin and blood present. Daily analysis revealed the presence of sugar for eleven days longer. The patient took an easy job sixty days after the injury, remaining at work for almost two years; then the gradually increasing debility, emaciation, polyuria and depression of spirits induced him to seek medical advice. At that time there was a daily output of between seven and thirty pints of urine, and sugar varied from a trace to 7 per cent. The symptom complex grew more marked daily. In spite of all therapeutic measures the prognosis is becoming graver from day to day. The patient is now nearly 20 years of age and in a deplorable physical condition.

Medical Record, New York.

July 8.

7 Determination of Intestinal Functions by a Test-Regimen. H. Stern, New York.
8 History and Work of the Bedford Sanitarium for Consumptives. A. Meyer, New York.
9 *Gastric Ulcer in Children. W. L. Stowell, New York.
10 Surgical Aspects of Gallstone Disease. J. Wiener, Jr., New York.
11 *Observations on a New Method of Eliciting the Extensor Plantar Reflex, and Its Spinal Localization. Wm. C. White, Indianapolis, Ind.
12 Nevus Pilosus Pigmentosus and Other Skin Lesions Treated with Liquid Air. W. B. Trimble, New York.

9. **Gastric Ulcer in Children.**—Stowell was called to see a girl aged 8, who was found presenting the appearance of one dying from pneumonia. The epigastrium was hard and tender to pressure, and the abdomen was moderately distended. The day before she had complained of pain in the stomach with weakness and pallor, and she died after two hours of delirium during the night of the day when seen by the author. A partial autopsy was performed and two perforated ulcers, each about one-eighth of an inch in diameter, were found on the posterior surface of the stomach, about two inches from the pylorus on the lesser curvature. Abstracts of thirty-five case histories are given, which Stowell states is the list of published cases of gastric ulcer in children. The symptomatology and treatment of the condition are discussed, the principles being the same as in adults, and it is stated that the prognosis does not depend on age, three-quarters of the total number of patients recovering on proper treatment. The paper closes with a statistical table on gastric ulcer in general.

11. **New Method of Eliciting the Extensor Plantar Reflex and Its Spinal Localization.**—White refers to the value of Babinski's sign of extension of the great toe on stroking the sole of the foot in disease of pyramidal tracts, and describes a new method of eliciting the reflex. This consists in stroking the inner side of the front of the thigh. The response to the irritation is at times confined to the extension of the great toe, at times to extension of all the toes, and, occasionally, when Babinski's sign is present, but no reflex can be excited by the methods of Oppenheim or Gordon, White's sign is very distinct. In a case of hemiplegia, with complicating edema all four reactions were present at first, but when the edema developed the Oppenheim and Gordon responses disappeared, but irritation of the sole of the foot and the front of the thigh gave a definite extension of the great toe. The spinal localization of these reflexes is also discussed, and it is stated that as the extensor longus hallucis is represented in the anterior horn of the fifth lumbar segment, it is evident that from the wide district concerned in the production of the reflex, it must be possible to reach this portion of the cord.

Medical News, New York.

July 8.

13 Etiology, Diagnosis and Treatment of Benign Stenosis of the Pylorus. G. E. Brewer, New York.
14 Case of Peptic Ulcers After Gastroenterostomy Causing Gastrocolic and Jejunocolic Fistulæ, and of Spontaneous Closure of Gastroentero Anastomosis. J. Kaufmann, New York.
15 Observations on the Relations of the Gastrointestinal Tract to Nervous and Mental Diseases. R. C. Kemp, New York.
16 *Syphilis of the Liver, Sclerogummatous type. J. Funke, Philadelphia.
17 Sudden Blindness Following Orbital Injuries. H. B. Decherd, Galveston, Texas.
18 Sexual Necessity. E. L. Keyes, New York.
19 Social Prophylaxis and the Church. H. A. Brann, New York.

16. **Syphilis of the Liver.**—Funke relates the following interesting findings in a liver obtained at autopsy at the Philadelphia Hospital:

The liver lacked 1 cm. of reaching the costal margins in the midclavicular line, it was slate-colored, but had a distinct greenish tinge; scattered over its external surface were many round or oval grayish areas, varying from 2 to 4 mm. in diameter. They were apparently beneath the capsule, which seemed involved; when incised they were found to extend into the parenchyma of the organ, as far as could be determined, to a distance of from 2 to 4 mm. Over the external surface 5 cm. to the right of the suspensory ligament were two depressed grayish-white lines running nearly parallel with that structure; they were both 4 mm. in width; one measured 2.5 cm. in length and the other 1 cm. The organ was found to resist the knife and the cut surface was studded with nodules similar to those described as being present under the capsule. They resembled miliary tubercles in every respect, although it was quite impossible to remove what appeared to be caseous centers. The peripheries of many of the lobules were easily outlined and were slightly depressed; the depressed parts were grayish-white in color and resembled fibrous tissue. The greenish tinge was more pronounced on the cut surface than on the external portion of the organ, giving the parenchyma a granular appearance. Near the transverse fissure of the organ was a fibrous mass having a dimension of 1 by 2 cm., which incorporated the bile passages but did not impinge on the vessels. A probe introduced at the ampulla of Vater would extend as far as the juncture of the hepatic and cystic ducts, where it met with an obstruction and on dissection of the common duct the lumen was found occluded by the fibrous mass already mentioned. On further dissection the cystic duct also was occluded; the right hepatic could not be traced, but the left branch passed near the margin of the fibrous mass. The fibrous nodule extended into the liver for a distance of 1 cm. At no point in the growth could either duct or liver substance be identified, apparently it was fibrous throughout and distinctly circumscribed. The greatest diameter of the gall bladder was 7.5 cm.; the organ reached 19 cm. below the margin of the liver; was elastic and apparently filled with fluid, but the distension was so marked that fluctuation could not be elicited. At the junction of the gall bladder with the liver was a mass of cicatricial tissue which formed firm adhesions between the two organs. The scar was pinkish red in color and very rough. The gall bladder was found to contain 225 c.c. of a slightly clouded grayish-tinged fluid; the mucous membrane was covered by a grayish-white semisolid mucigenous substance; when the latter was removed the exposed mucosa was pale and smooth. The walls of the gall bladder were extremely thin, scarcely 2 mm. in thickness. The peritoneal cavity contained 150 c.c. of a straw-colored fluid.

Boston Medical and Surgical Journal.

July 6.

20 Collaboration in Medical Education. C. J. Blake, Boston.
21 Research into the Causes and Antecedents of Disease, Its Importance to Society. T. Smith.
22 *Improvement in Treatment of Diabetes Mellitus. E. P. Joslin, Boston.
23 Treatment Room for Epileptics. E. Flood, Palmer, Mass.

22. **Improvement in Treatment of Diabetes Mellitus.**—Joslin states that the improvement in the treatment of diabetes in the last ten years is undoubted, and attributes it in great measure to the substitution of facts for guesswork in diagnosis. One of the greatest advances is that in quantitative analysis of the urine. Of almost equal importance is the examination of the twenty-four-hour quantity of urine instead of a single specimen. Joslin states that the knowledge of the amount of carbohydrates in the diet of diabetic patients was practically unknown ten years ago. At that time the only attempt to determine the amount of carbohydrates in the diet of these patients was directed to the exposure of the starch in gluten flour. He states that it is a great gain to medicine that to-day it is known that bread and cereals contain 60 per cent. carbohydrates; potatoes and bananas, 20 per cent.; grape fruit and oranges, from 4.5 to 10 per cent., and milk from 3 to 5 per cent. The physician by the more accurate knowledge of the severity of the disease, becomes less easily discouraged in its treatment. One can not expect to arrest the case of diabetes in which the tolerance is less than nil any more than one can arrest a tuberculous process which has reached the cavity stage. The urine must be rendered free from sugar, and to do this especial attention must be paid to the diet. This may be obtained by the withdrawal of the carbohydrates. It may be necessary also to limit the quantity of albumin ingested. If this does not suffice the patient must be put on a strict vegetable day, and occasionally a starvation day will be necessary. When once the urine has been freed from sugar the patient should be kept on the same diet by which this has been attained for several days, then cream may be added to the diet, and later milk. Joslin says that a diabetic diet is really a diet in which the carbohydrates are replaced by fat. It is necessary for the diabetic individual to eat from two to five times as much fat as usual. Comparatively little of this fat can be taken as meat, and this necessitates the use of much cream, butter and oil. The diabetic's chance for life depends on his ability to eat fat and consequently great care must be exercised not to prejudice him against its digestibility. It is well to remember that fat is very well digested as a rule if taken in the form of milk-fat or oil. Not over 5 per cent. remains unassimilated, and this rule holds good for diabetics except in one of those most rare cases of marked pancreatic disease. Drugs do not permanently increase the tolerance for carbohydrates. Circumstances may arise in the course of diabetes just as in any chronic disorder when they are indicated, but there are as yet no specific remedies. The treatment of coma, Joslin states, is chiefly preventive.

New York Medical Journal.

July 8.

25 Bronchescopy for Removal of Foreign Bodies from the Lungs. E. F. Ingals, Chicago.
26 Primary Jugular Bulb Thrombosis in Children as a Complication of Acute Purulent Otitis Media. J. F. McKernon, New York.
27 Six Lectures on the Diseases of the Blood. J. M. Swan, Philadelphia.
28 *Early Detection of Uterine Carcinoma. D. H. Craig, Boston, Mass.
29 Incidence of Pulmonary Tuberculosis in Large Families. H. L. Snively, New York.
30 Symptomatology of Acute Otitis in Children. C. G. Kerley, New York.
31 Interesting Coroner's Cases. P. F. O'Hanlon, New York.
32 Widal's Reaction for Typhoid Fever. P. Shekwana, Iowa City, Iowa.

28. **Early Detection of Uterine Carcinoma.**—Craig makes the emphatic statement that there is no characteristic first or early symptom of uterine carcinoma either of the cervix or of the body. He sent to many surgeons a list of questions concerning cancer patients and the replies showed that in 45 cases the first symptom was a leucorrhea, which in itself was in no wise characteristic. In 21 cases the first symptom was bleeding, varying from a slight staining to profuse flowing. In 12 cases pain was the first symptom preceding both leucorrhea and bleeding. Pain as an initial symptom appeared slightly more often in cancer of the uterine body, but not with sufficient emphasis to be considered characteristic or pathognomonic. Leucorrhea had existed previous to the onset of the illness in 33 cases and had not so existed in an exactly equal number. In 9 cases no satisfactory answer was obtainable. This pre-existing leucorrhea had undergone a noticeable augmentation before becoming blood-stained in 42 cases, including both classes of cases with leucorrhea, namely, those which started with leucorrhea and those having had a preexisting discharge. The bleeding began in from six weeks to one year before examination, with an average duration of six months. Pain was entirely absent in 36 cases and in 35 cases in which it was a noticeable factor, it had been slight in 18 cases for periods varying from three weeks to one year, and severe in 17 cases from two months to one year. Thirty-six cases were too far advanced to admit of more than palliative operation and radical operation was advised or performed in 42 cases. In 42 cases the cancer was in the cervix; in 30 cases in the body, and in 6 cases not stated. As is seen by the statistics, no one symptom can be regarded as characteristically the first symptom of uterine cancer, and Craig therefore emhasizes the necessity of making a thorough examination of the pelvis both bimanually and with the speculum in every patient having pelvic symptoms.

California State Journal of Medicine.

June.

33 Tendon Transplantation. F. Lange, Munich.
34 Three Cases of Infradiaphragmatic and One of Supradiaphragmatic Aortic Aneurism. C. M. Cooper, San Francisco.
35 *Analysis of Fifteen Cases of Operation for Cancer of the Breast. T. W. Hutchinson, San Francisco.
36 State Hospital Sanitation. E. A. Kelley, Agnew.
37 Medical Inspection of Schools. E. von Adelung, Oakland.
38 Medullary Narcosis. Geo. W. J. Fowler, Santa Clara.
39 Plea for the Druggist. J. H. Mallery.
40 Why Should Roentgology Be Practiced Only by the Physician? W. Lehmann, San Francisco.
41 Fatty Degeneration of the Heart. P. M. Lusson, San Jose.
42 Radical Mastoid Operation for Chronic Suppuration of the Middle Ear. C. F. Welty, San Francisco.
43 Clinical Findings Usually Overlooked in Mucomembranous Enterocolitis. J. J. Gaynor, Eureka.

35. **Cancer of the Breast.**—An analysis is given by Huntington of 15 cases of breast cancer operated on since 1896. Of the 15 individuals 13 were married and 2 were single. Ten had children. The oldest patient was 74 years; the youngest, 32. One person was under 40; eight were between 40 and 50.

In 9 the left and in 6 the right breast was involved. In every case the axillary glands were unmistakably implicated. In the first two cases the breast and axillary glands were removed through a continuous incision. The pectoral muscles were left intact. Both these patients are dead. The remaining 13 patients were subjected to the full Halstead operation. Nearly full arm function was noted in every case. The diagnosis in every instance was confirmed by microscopic examination. Wound infection occurred in one case after primary operation, and fatal infection occurred in one case after secondary operation. Of the series 2 are dead, 6 from recurrence at the site of operation, and 4 from recurrence at a remote point. In these cases of recurrence the longest survival after operation was twenty-six months; the shortest, six months. The history of the cases is given in full.

St. Louis Courier of Medicine.

June.

45 Pulmonary Consumption. J. R. Briggs, Dallas, Texas.
46 Baby Incubators on the "Pike," Study of the Care of Premature Infants in Incubator Hospitals Erected for Show Purposes. J. Zahorsky, St. Louis.
47 Therapeutic Value of Lecithin in Infant Feeding. W. Koch, Columbia, Mo.
48 *Peculiar Cystoma. W. S. Deutsch, St. Louis.
49 Protozoan-like Bodies Described in Scarlet Fever. R. L. Thompson, St. Louis.

48. **Peculiar Cystoma.**—Deutsch reports a case of postrectal cystoma occurring in a woman aged 32. The tumor was about the size of a large cocoanut and apparently was of rectal origin, with colloid carcinomatous origin. The cyst contained a thick gluelike fluid. No hair or bone was found. The rectum was not interfered with, and the patient made a perfect recovery from operation.

Woman's Medical Journal, Toledo, Ohio.

May.

50 *Tuberculous Women in Colorado. M. Hawes, Denver.
51 *Therapeutic Use of Water Drinking and Some of Its Dangers. E. H. Root. Chicago.
52 Inversion of the Uterus, Acute. O. Wilson, Paragould, Ark.
53 *X-ray in Tubercular Adenitis. M. C. Rice, Chicago.

50. **Tuberculous Woman in Colorado.**—According to Hawes, pulmonary tuberculosis is by far the most frequent form of tuberculosis seen in Colorado. It is practically the only form that originates there. Laryngeal tuberculosis ranks second; it is usually secondary to a pulmonary focus. The other forms are relatively much more infrequent than they are elsewhere. Sex becomes a factor by reason of the two functions of menstruation and parturition. Menstruation is affected by the malpositions of the uterus that are apt to be induced by hard and prolonged coughing spells. These malpositions are possibly more frequent in Colorado than elsewhere because the disease runs a longer course there. Other things being equal, the possibility of their occurrence is no contraindication to climatic treatment. The dangers of parturition are lessened by the more favorable hygienic surroundings. The secondary problems dependent on sex are: Age, social condition, pecuniary resources and temperament of the patient. Whether the patient must go alone, or whether she can have suitable care and companionship is the most important question of all, and is extricably interwoven with the other secondary sex problems. The early recognition of tuberculosis is of extreme importance in urging climatic change. The burden of this rests on the family physician, who is also best fitted to know the data that will enable him to decide the other non-medical questions. Hawes urges physicians not to advise climatic change for a tuberculous woman unless they have weighed well the minutest factors, social and medical.

51. **Therapeutic Use of Water Drinking.**—Eliza Root says that the advice frequently given to patients with poor elimination by physicians to drink plenty of water is dangerously indefinite. If the amount of water or fluids is abnormally increased, it must be gotten rid of, and to do this the heart is brought into greater action and the blood pressure in the arteries is disturbed. If there is a pre-existing impairment of the kidney or heart functions the results may be serious. Excessive water drinking may become a habit in the "nervous" who have heard that water drinking is a good thing. This extra effort on the part of the heart and blood vessels, and the continued flooding of the tissues will sooner or later cause, first hypertrophy and then dilatation of the heart. The stomach and intestines, especially the colon, will participate in the process of relaxation from repeated or continuous distension, and will also become dilated, bringing their own train of symptoms incident to gastroptosis and enteroptosis. The idea of reducing the labor of the heart by reducing the amount of fluids ingested has prevailed in the treatment of the incompetent heart for a long time, and ought to carry a lesson in taking fluids generally, in health or disease.

53.—See abstract in The Journal, Sept. 24, 1904, p. 908.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

June 24.

1 Harveian Oration. F. T. Roberts.
2 Uncertainty of Postmortem Evidence in Suspected Lead Poisoning. S. K. Alcock.
3 *Operation for Closure of Cleft Palate in Infants. T. Stoker.
4 Cleft Palate Operation Wounds, Healing by Second Intention. E. Owen.
5 Dwarfism and Infantilism. Wm. Calwell.
6 Induction of Labor, a Comparison of Some of the Methods with Notes of Five Recent Cases. J. S. Sheill.
7 *Spread of Cancer by the Thoracic Duct. N. Raw.

3. **Closure of Cleft Palate in Infants.**—Stoker gives the steps of the original Brophy operation for this condition and then states the modifications which he has found advisable. They are as follows: When performing the operation paring the edges of the palate should be deferred until the sutures have been inserted and the bones moved toward the middle line. The danger of hemorrhage is thus lessened. If it be found that the bones can not be brought together with reasonable effort, it is better not to pare the soft parts at this time, but to wait and to do it later when the bones are in apposition. Stoker relates cases illustrating this operation and showing what a good result may be obtained even in feeble and ill-nourished children.

7. **Spread of Cancer by the Thoracic Duct.**—Raw states that he has often observed that malignant disease of the glands of the neck occurs much more frequently on the left side than on the right, and that he has frequently seen cases of apparently primary cancer in these glands in people of middle or old age without any evident focus of infection such as cancer of the tongue, mouth esophagus or tonsils. He reports a case of primary carcinoma of the pancreas which came to autopsy. Postmortem showed that all the organs of the abdomen were healthy with the exception of the pancreas. In the chest the organs were found healthy with the exception of the lungs, which were edematous. The left side of the neck, comprising all the triangles, was involved in an irregular cancerous growth evidently originating in the deep part of the subclavian region. The thoracic duct near its termination was found involved in the cancerous growth and was greatly thickened and enlarged. Raw states that a more minute search in all cases of abdominal cancer would point to the spread to other viscera and to the lymphatics by means of the thoracic duct, and that he intends in the future to pursue this line of inquiry.

The Lancet, London.

June 24.

8 Harveian Oration. F. T. Roberts.
9 Carbohydrate Metabolism. F. W. Pavy.
10 *Gastroenterostomy for Carcinoma of the Esophagus and Its Results. T. P. Legg.
11 *Experiments on the Disinfection of Vibrio Choleræ Asiaticæ and Bacillus Dysenteriæ (Flexner) with Cyllin and Carbolic Acid. D. Sommerville.
12 Treatment of Ringworm of the Scalp by Means of the X-Rays. H. G. Adamson.
13 Polyarticular "Quiet Effusion." T. Battersby Johnson.

10. **Gastrostomy for Carcinoma of the Esophagus.**—Legg states that it should be remembered that at best gastrostomy is only a palliative measure. If it can be shown to be beneficial to the patient, and if the disadvantages are outweighed by the advantages, then the operation is to be strongly advised. The method which he uses is a modification of Frank's operation and is as follows:

The abdominal cavity is opened by a vertical incision two or three inches long, just to the left of the median line and beginning just below the eighth costal cartilage. A portion of the anterior wall of the stomach is selected as near the cardiac end as possible and brought out of the wound on the abdominal wall. A conical portion, with a base of about one and a half inches in diameter and from two to two and a half inches in length is formed so that it can be laid to the left of the incision on the outer surface of the abdomen without tension. To the apex of the cone, which should be made as near as possible to the lesser curvature, two guide sutures are passed through the serous and muscular coats, about half an inch apart. A second incision, parallel to the first and one and a half inches from it, is made through the skin over the outer part of the left rectus muscle. This incision is about an inch in length and opens the anterior layer of the sheath of the rectus, the muscular fibers being separated longitudinally for the same distance. A blunt dissector is passed from the second to the first incision through the fibers of the muscle, which is then separated into an anterior and posterior layer by moving the dissector in an upward and downward direction. The extent of the separation must be sufficient to allow the cone of the stomach to be drawn through the gap, traction being made on the guide sutures which have been passed from the first to the second incision, while the base of the cone is manipulated into the widest part of the gap—i. e., close to the first incision. By this maneuver the stomach cone becomes completely surrounded by muscle, and there are two distinct bends in it—viz., at the base and at the apex. As there is usually considerable traction on the cone and a tendency for it to retract, its length should be as great as possible, and at the second incision the apex should project about a third of an inch. It is a good plan to fix the apex to the sheath of the rectus and skin at once, in order to prevent the cone retracting. For this purpose four stitches, one on each side, one at the upper and one at the lower part, are enough. They involve the seromuscular coats of the stomach. The base of the cone is fixed along its exposed right margin to the right-hand margin of the parietal incision, the stitches taking up the serous and muscular coats of the stomach and the peritoneum with the posterior sheath of the rectus and some muscle fibers. Four or five are usually sufficient, and if any opening is left at the upper or lower end of the peritoneal incision this is closed in the usual way, the stomach being also caught up by the stitches if it is thought advisable to do so. In passing the stitches through the wall of the stomach, vessels must be avoided as the bleeding is troublesome. The superficial part of the wound is closed by interrupted stitches, which also unite together the anterior layer of the rectus sheath and the superficial fibers of that muscle. A collodion dressing is applied to the wound and the stomach is opened between the guide stitches, the aperture being made large enough to take a No. 9 or No. 10 red rubber catheter, which is kept in position by a stitch attaching it to the skin.

Legg claims that the important points in this method are: 1, that the cone of stomach is surrounded by muscle, and 2, the length of the cone. The muscle acts as a sphincter and effectually prevents the gastric contents from escaping, and therefore excoriation of the skin is absent. One of the most striking after-effects of the operation is the recovery of the power to swallow with ease and another is the improvement in the general health and condition of the patient. Legg reports a number of cases in which he has performed this operation, with favorable results.

11. **Experiments on Disinfection of the Cholera Vibrio and the Bacillus of Dysentery.**—Sommerville relates some experiments relative to the merits of certain disinfectants when applied directly to infected organisms. Care was taken to preserve uniformity in the conditions, such as time of contact of the disinfectant with the microbe; age of culture of the microbe used; constitution and reaction of the medium; vital resistance of the species of microbe used; quantity of disinfectant added to the culture; temperature of medication, and temperature and time of incubation. The following is the method of procedure:

A virulent culture of *Vibrio choleræ asiaticæ* was procured and sown in bouillon rendered slightly acid to phenolphthalein, but neutral to litmus (acidity equivalent to 15 cubic centimeters normal NaOH per liter). A sample of phenol was standardized by bromin and a series of dilutions in distilled and sterile water was made. Into five sterile test tubes were placed respectively five cubic centimeters of dilutions 1 in 70, 1 in 80, 1 in 90, 1 in 100, and 1 in 110, and into each of these serially at intervals of exactly 30 seconds five drops of a 24-hours bouillon culture of *Vibrio choleræ* incubated at 37 C. were deposited. Continuing the 30 seconds interval a single loopful was removed in turn from each of the medicated cultures after careful shaking and sown in a bouillon tube. The platinum loop was thoroughly sterilized after each inoculation. All vessels, flasks, tubes, pipettes, etc., used in making dilutions were also previously rigorously sterilized. The medicated culture tubes and bouillon tubes during manipulation were held in such oblique position that all extraneous organisms floating in the atmosphere were excluded: 30 bouillon tubes were thus inoculated, each at an interval of 30 seconds later than the previous. The room temperature averaged 16 C. The inoculated tubes were then removed to a 37 C. incubator for 48 hours, at the end of which time in this case nothing had grown. A second series of dilutions of phenol were tried with like result, the inoculated tubes being allowed to remain in the incubator for 72 hours.

Pure phenol in dilution of 1 in 160 killed all the cholera organisms, but a dilution of 1 in 165, applied for two and a half minutes, allowed growth in seventy-two hours. Acidity of the bouillon inhibited the growth of the cholera organisms, but had no effect on the *Bacillus dysenteriæ* (Flexner).

Indian Medical Gazette, Calcutta.

June.

14 *Malaria Prevention in Madras. W. G. King.
15 Theories of Reclination of Cataract. G. Albertotti.
16 Casual Comments. J. R. Roberts.
17 Analogies which Favor Protozoal Hypotheses of Beriberi. C. M. Heanley.

14. **Malaria Prevention in Madras.**—King says that the government, while approving the measures directed against mosquitoes by killing larvæ by means of kerosene and other substances, particularly impresses on local bodies the importance of undertaking minor sanitary works of a nature to prove of permanent benefit in regard to the removal of the breeding places of mosquitoes. He relates at some length the manner of collecting mosquitoes, of improving the ground, by means of irrigating, etc., and relates the work that has been accomplished by these means.

Journal of Tropical Medicine, London.

June 15.

18 *Plague in the British East African Protectorate. Report No. 1. J. A. Haran.
19 *Id. No. 2. Kisumu an Endemic Area. D. Milne.
20 *Plague in Siam. H. C. Highet.
21 Etiology and Pathology of Beriberi. H. Wright.

18. **Plague in the British East African Protectorate.**—Haran states that in Kisumu the disease in most cases has been of the bubonic type, two cases alone being of the septicemic variety. Invasion was marked by a rise of temperature, severe headache, staggering, thickened speech, rapid pulse, hurried breathing, epistaxis. Tender or enlarged glands either simultaneously appeared or very quickly followed. Rapidly ensuing delirium occurred, the tongue becoming dry and brown with the advent of typhoid symptoms. Hemorrhages were frequent with involuntary evacuation of bladder and rectum. Death usually took place within twenty-four hours of the onset. He relates the methods of disinfection used and his ideas of prophylaxis. He also mentions the part played by rats in the transmission of the disease.

19. **Kisumu an Endemic Area.**—Milne states that inquiries as to the previous existence of plague at Kisumu revealed the fact of a common knowledge among the natives of a fatal malady that had attacked the dwellers on the present site long before the advent of the white man. A native gave an interesting account of an epidemic which had occurred many years (probably about fifty) previously.

20.—See abstract in The Journal, July 8, 1905, p. 115.

Bristol Medico-Chirurgical Journal.

June.

22 *Symptoms of Cerebellar Tumors. J. M. Clarke.
23 Causes and Treatment of Baldness. H. Waldo.
24 Acne Vulgaris and Its Treatment. W. K. Wills.
25 Progress of Pharmacy and Pharmaceutical Chemistry. O. C. M. Davis.
26 Joint Swellings Simulating Gout and Rheumatism. R. L. Jones.
27 New Scheme for Infant Milk Depots. J. M. Fortescue-Brickdale.
27½ Sprue. C. Begg.
28 Inebriety and the So-called Cures. J. Stewart.

22. **Symptoms of Cerebellar Tumors.**—Clarke lays emphasis on two symptoms which he thinks are often overlooked as symptoms of cerebellar tumors. These are deafness and tremor. Deafness in these cases generally takes the form of impairment of hearing only and is unilateral, or at least more marked on the side of the lesion. Deafness may also be associated with tinnitus aurium. These auditory symptoms may precede by many months the pathognomonic symptoms of cerebellar tumor. In regard to tremor, he states that the cerebellum is one part of the brain in which a tumor may give rise to an intentional tremor. He gives the history of an interesting case in which there was a peculiar tremor which resembled that of disseminate sclerosis in being absent when the limb was at rest and supported, and becoming very evident on motion.

Dublin Journal of Medical Science.

May.

29 Intramuscular Injection of Mercury in Treatment of Syphilis. H. FitzGibbon.
30 *Suprapubic Cystotomy in Children. C. G. Cumston.
31 Gangrenous Traumatic Hernia. W. Taylor.
32 Case of Syringomyelia. H. T. Bewley.
33 Sequel to Case of Innominate Aneurism Reported in 1898. J. Craig.
34 Earth Temperature and Diarrheal Diseases in Dublin During 1904. J. W. Moore.

30. **Suprapubic Cystotomy in Children.**—Cumston calls attention to the frequency of vesical calculi in children and emphasizes the advantages of the suprapubic operation. He says that in children the anatomic situation of the bladder singularly facilitates this method of operation. The bladder is in direct contact with the abdominal wall and against the posterior aspect of the os pubis, thus partially filling the prevesical space. In children, consequently, the surgeon will hardly be able to wound the peritoneum during this operation.

Annales de l'Institut Pasteur, Paris.

Last indexed XLIV, page 1814.

35 (XIX, No. 5.) *Etude d'une variété d' infection intestinale chez le nourrisson (in infants). H. Tissier.
36 Controle de la valeur des vaccins jennériens par la numération des éléments virulents. C. Guérin.
37 Nature des éléments cellulaires du colostrum et du lait chez la femme (of human milk). V. Wallich and C. Levaditi.
38 Essai d'immunisation par la voie gastro-intestinale contre la toxine botulique. A. Tchitchkine.
39 *Coloration des protozoaires. G. Giemsa (Hamburg). Id. F. Marino.

35. **Treatment of Infantile Intestinal Infection.**—Tissier describes in detail a number of cases of a certain variety of intestinal infection in infants for which he seems to have evolved a successful method of treatment. The microscope revealed the constant presence in the stools of a strictly anaërobic bacterium, a mixed proteolytic ferment, the *Bacillus perfringens*, which has a powerful fermentative action. None of the other bacteria isolated from the stools had a mixed proteolytic action; they were all peptolytic ferments. He endeavored to arrest the proliferation of this *Bacillus perfringens* in the intestine by utilizing the antagonistic action of other bacteria. Mixed ferments, by producing acids, check the simple ferments, and the mixed ferments arrest their own proliferation when the acid production reaches a certain height. He cites as an instance that the putrefaction of meat can be arrested and all microbian action paralyzed by adding a small amount of glucose to the medium. Consequently, he reasoned that the digestive disturbances caused by the proliferation of this proteolytic bacterium could be arrested without injury to the mucosa by favoring the cultivation of the powerful mixed ferments, substituting for the harmful microbian vegetation another, more innocent one. This can be done by modifying the chemical constitution of the medium and by inducing the reappearance of the normal bacterial flora. The chemical composition of the medium can be modified by having nothing pass into the intestines but carbohydrates, with the smallest possible proportion of proteid substances. Sugars, starches and fats should abound, and the albuminoids should be entirely suppressed or substituted by merely enough proteids to sustain life. The simplest way to insure that the flora consists exclusively of mixed peptolytic ferments is to have the patient ingest pure cultures of these species, merely refraining from giving one that induces the formation of gas, indol, phenol, or an irritating acid. The one to be preferred must grow in a medium without oxygen, and must generate more acid than the harmful variety. Among the species which fulfill these conditions the *Bacillus bifidus* and the *Bacillus acidiparalactici* take the lead. He selected the latter for the purpose, as it is an anaërobe very easy of cultivation. It proliferates readily in the human intestine, and favors the reappearance of the *Bacillus bifidus*. This method of treatment consequently aims to transform the flora of the intestine and abandons the vain attempt to realize antisepsis in the intestines. The first step is to modify the food. If the bottle is used, pure cow's milk is stopped for a time, and glucose, saccharose, lactose, starch or other carbohydrates are given instead. At the end of a few days, a small amount of maternalized or peptonized milk is added to the diet. When the infant is on a mixed diet, cow's milk is suppressed and its place filled by carbohydrates. When the child is exclusively breast fed, the mother must aim to modify her milk by living on vegetables and by increasing the amounts of f[illegible] and sugars taken. Before each meal, the child should be given a tablespoonful of a 10 per cent. solution of lactose. By these means the chemical composition of the medium is modified. The second indication is met by giving the infant one or two teaspoonfuls a day of a pure culture of *Bacillus acidiparalactici*, which has been kept in the incubator for five or six days at a temperature of 37 C. (98.5 F.) Gradually all the symptoms subside, and the reappearance of the normal intestinal flora indicates the complete cure. This variety of intestinal infection can be differentiated by its protracted course of one or two months, by the appearance of the stools which are a greenish yellow fluid, holding fine greyish-green lumps in suspension, and foamy from the gas emitted with them. The stools turn olive green on exposure to the air. The children act sick, lose appetite, and the usual measures, calomel, etc., have no influence on the condition. The younger the child the severer the symptoms, as a rule. Bacteriologic examination of the stools enables an early diagnosis. The microscope shows that the *Bacillus bifidus* is absent, while half a dozen or more abnormal species can be detected. They are all of the peptolytic ferment type, except the *Bacillus perfringens*. The details of a number of cases successfully treated on the above principles are given in full. This treatment has been tried also by other physicians, and all confirm its absolute harmlessness and complete success. Prompt bacteriologic differentiation is important, as inappropriate treatment may prolong and aggravate the affection. A change from breast milk to cow's milk is liable to transform a generally benign affection into a fatal illness. In one of his cases the parents insisted on giving calomel. Immediately afterward the symptoms that had been nearly conquered reappeared in their former intensity, and the *Bacillus bifidus*, which had made its appearance again in the stools, vanished anew. The mother of a healthy nursling gave the breast to one of the sick children, with the result that in a week her own child developed the same symptoms.

39. **Stain for Protozoa.**—Giemsa has modified his staining technic (mentioned on page 1879 of the last volume of The Journal). He now uses a mixture made as follows:

℞.	Azure II-eosin	grs. xlv	3	S
	Azure II	gr. xii		
	Glycerin			
	Methyl alcohol, āā	℥viiiss	250	

The glycerin takes up more of the stain than a watery solution, and this excess insures fine coloring, while the preparation keeps well. One drop of this mixture is added to each c.c. of water, and the specimens are left in this fluid for fifteen to thirty minutes. They are then rinsed well, dried in the air and mounted in balsam. If haste is an object, the specimens can be fixed in methyl alcohol for two or three minutes or in a 10 per cent. alcohol solution of formalin for ten seconds. In this case, the fixation and staining can all be done in from ten to fifteen minutes.

Archiv f. Gynäkologie, Berlin.

Last indexed XLIV, page 1968.

40 (LXXV, No. 3.) Vergleichend histologische Untersuchungen über das Vorkommen drüsiger Formationen im interstitiellen Eierstocksgewebe (interstitial gland of the ovary). L. Fraenkel.
41 Ueber hämorrhagische Adeno-Cystome der Ovarien. O. Schaeffer.
42 *Die intra-abdominellen Druckverhältnisse (pressure relations). H. Hörmann.
43 Bildung von Psammom-Körpern im carcinomatösen Uterus. Schütze.
44 *Artificial Premature Delivery for Contracted Pelvis.—Die primären und die Dauer-Erfolge der künstlichen Frühgeburt bei engem Becken. Scheffczyk.
45 *Can Incipient Glandular Carcinoma of Uterus Be Cured by Curetting?—Ist durch die Abraslo eine Dauerheilung des beginnenden glandulären Uteruscarcinoms zu erzielen? W. Vassmer.
46 Spontaneous Laceration of a Pregnant, Septic Infected Diverticulum in Uterus.—Spontane Zerreissung der Gebärmutter in einem schwangeren, septischen inficirten Uterus-Divertikel. H. Hellendall.
47 Instrumental Dilatation Can Be Recommended to the General practitioner. F. Lichtenstein (Leopold's clinic, Dresden). Reply to Dührssen.

42. **Intra-abdominal Pressure.**—A set of tables are appended to Hörmann's extensive article showing the particulars of the various experiments and tests made on a large number of persons and on dogs. The work issues from von Winckel's gynecologic clinic at Munich. It demonstrates that there is no such thing as a single, uniform pressure. The intra-abdominal positive or negative pressure is made up of many factors, all obeying general laws.

44. **Artificial Premature Delivery in Contracted Pelves.**—Scheffczyk reviews the experiences at the Provincial Training School for Midwives at Breslau in 164 cases of narrow pelvis,

in which the patients were treated by artificial premature delivery. The results, both at once and remote, he thinks, amply confirm the advantages of his glycerin-bag method. The birth, as a rule, was spontaneous head presentation, and the after-results, both for mother and child, compare very favorably with those reported by others from Cesarean section, etc. A large number of the women have passed through other pregnancies since with equally excellent outcome. Ordinary sheep's bladders are inflated, dried and sterilized by keeping them in an alcoholic solution of sublimate for four weeks. The bladder is tied with silk on a fine, elastic catheter, just boiled in water and ammonium sulphate. The catheter is connected with a tube and syringe. About 90 c.c. of glycerin are injected into the sheep bladder when it has been pushed high up into the uterus, after the vagina has been rinsed with an antiseptic solution. The bladder acts not only as a foreign body, but also stimulates contractions of the uterus by the chemical effect of the glycerin. The contractions force the head down, and delivery follows under natural conditions. If labor has not commenced in three hours, the glycerin is replaced with fresh. The amount of fluid in the bladder is much larger than at first, as the amniotic fluid diffuses through the walls. The bladder can be filled five to eight times in this way, and no disturbances from absorption of glycerin have ever been noted. Nephritis, he says, is the only contraindication for this glycerin method.

45. **Can Curetting Cure Incipient Cancer?**—Vassmer relates a case in which a tuberculous woman of 45 was curetted on account of uterine hemorrhage, first noticed fourteen days before. The scrapings revealed incipient cancerous degeneration, and hysterectomy was advised. It was attempted soon after, but the hemorrhage was so severe that the attempt was abandoned. The uterine artery was ligated, and the uterus merely curetted again. No trace of malignant disease could be detected in the scrapings from a third curettement a year later. The patient has shown no signs of recurrence of the cancer during the three or four years since, although suffering from her pulmonary affection. Vassmer reviews the few analogous cases on record, and states that it is certainly true that curettement alone, when the malignant disease is restricted to the mucosa, can completely eradicate the malignant tendency.

Archiv f. klinische Chirurgie, Langenbeck's, Berlin.

Last indexed page 77.

48 (LXXVI No. 4.) *Ueber einige unter dem Bilde der Aktinomykose verlaufende Affectionen. G. Kieseritzky and L. Bornhaupt (Riga).
49 *Beitrag zur traumatischen Muskelverknöcherung (ossification of muscles). K. Frank.
50 *Zur Gastrostomie nach Marwedel, nebst Bemerkungen über die Schlussfähigkeit von Magenfisteln (continent fistula). F. Berndt.
51 Mechanismus der Entstehung der Radius-Fracturen an typischer Stelle. N. Wolkowitsch.
52 Zur Casuistik und Aetiologie des Dünndarm-Volvulus (of small intestine). W. Philipowicz.
53 *Spontane Zertrümmerung der Harnsteine in der Blase (disintegration of calculi in bladder). J. Englisch.
54 *Zur Radical-Behandlung der Blasen-Ectopie. G. Muscatello.
55 Harnleiter-Hernia (of ureter). A. Carli.
56 *Endotheliome der Haut (of skin). H. Coenen.
57 *Reflux of Bile After Gastroenterostomy.—Ueber hartnäckigen Gallenruckfluss nach G., bedingt durch offenen Pylorus. M. v. Cackovic.
58 *Zur operativen Therapie des callösen Magengeschwüres (gastric ulcer). J. Bakes.

48. **Affections Simulating Actinomycosis.**—Bornhaupt gives the particulars of ten cases which simulated actinomycosis, but in which the causal agent was either the *Cladothrix liquefaciens* or the bacillus described by Sawtschenko. Radical removal of the focus is the only treatment. The bacteriologic portion of the article is illustrated.

49. **Traumatic Ossification of Muscles.**—Frank's two cases corroborate the experience of others that in early or not too old cases conservative measures are advisable. Massage, superheated air, elastic compression and other measures to promote absorption have rendered good service. In older cases or when there are severe functional disturbances from the osteoma, the new-formed bone should be removed. It usually shells out without much trouble. Only two instances of recurrence are known in about 100 cases on record. The remaining tissues must be spared all irritation during the operation, as far as possible, to insure good functional results.

50. **Continence of Fistula After Gastrostomy.**—Berndt argues that it is physiologically impossible to insure continence in a fistula made by the sphincter-forming method. On the other hand, the Witzel, Kader-Lucke and Marwedel technics accomplish the purpose finely. He has applied the Marwedel technic in two cases, and has been delighted with the continent fistula resulting. Its simplicity commends it, while it takes up but a small piece of the stomach wall. The fistula closes spontaneously and perfectly as soon as the tube is removed, and it retains this closing capacity indefinitely.

53. **Spontaneous Disintegration of Calculi in Bladder.**—Englisch reviews the history of attempts to dissolve or to disintegrate stones in the bladder. He then gives brief summaries of the cases of spontaneous disintegration of such stones, reporting 102 authentic cases and referring briefly to others. He further reviews the material of bladder stones in the museums and private collections at Vienna, and sketches the history of the theories in regard to their origin, development and fate. He adds the description of four cases from his own experience, in which stones in the bladder became disintegrated. His final conclusions are that spontaneous disintegration is a peculiarity of the stones consisting of or containing urates. The arrangement of the crystals is the determining factor, as he shows in several illustrations.

54. **Radical Treatment of Exstrophy of Bladder.**—Muscatello's successfully treated case was chronicled in The Journal on page 334 of the last volume.

56. **Cutaneous Endotheliomata.**—Coenen describes a number of tumors, supposed to be endotheliomata, which proved to be epitheliomata, evidently resulting from congenitally displaced cells of the basilar layer of the rete mucosum.

57. **Obstinate Reflux of Bile After Gastroenterostomy.**—Cackovic's extensive experience has demonstrated that if the pylorus is permeable, it is impossible to arrest the reflux of bile after a gastroenterostomy, when it once becomes established. The pylorus should be examined and closed, if a second intervention becomes necessary. The gastroenterostomy opening should also be inspected, and if there is the slightest disturbance or suspicion of it the anastomosis should be made in the Y shape.

58. **Operative Treatment of Callous Ulcer of Stomach.**—Bakes has resected a tumor of this kind in seven cases during the last year. He gives illustrations of the instruments he has devised to meet the conditions, among them the gastrotriptor and the occlusive clamp. The former instrument divides the stomach into two parts; the sound part is preserved and a gastroenterostomy made, while the diseased portion is resected or excluded. He insists on the necessity for partial or total resection for all chronic ulcers. The details of his technic and cases are given, with several illustrations.

Berliner klinische Wochenschrift.

59 (XLII, No. 22, May 29.) Ueber psychische Infektion (induciertes Irresein). E. Meyer.
60 Ueber Spirochæte pallida bei Syphilis und die Unterschiede dieser Form gegenüber anderen Arten dieser Gattung (differentiation). F. Schaudinn and E. Hoffmann.
61 Experimentelle Arterien-Erkrankungen beim Kaninchen (affections of arteries in rabbits). M. Lissauer.
62 Action of Carbonated Baths.—Wirkung der kohlensauren Bäder. E. Homberger.
63 *Elimination of Indican Through Skin.—Fall von Indikan-Ausscheidung durch die Haut. E. Gans.
64 *Curative Action of Magnetic Field.—Heilwirkung des magnetischen Kraftfeldes. P. Krefft.
65 Zur Kenntnis der Meningitis cerebrospinalis epidemica. F. Göppert. (Concluded.)
66 Die Behandlung der hereditären Syphilis des Säuglings (in infants). B. Salge.
67 (No. 23.) *Relief for Poisonous Trades.—Die Hilfe für Giftarbeiter. J. Lewin.
68 Successful Physical Measures for Treating Gonorrheal Joint Affections.—[illegible] physikalischen Behandlung der gonorrhoischen Gelenkerkrankungen. A. Laqueur.
69 *Principles of Exercise Treatment of Tabes.—Grundsätze der Uebungstherapie bei Tabes. H. S. Frenkel (Heiden).
70 *Die Balneotherapie bei den Erkrankungen der Luftwege (in affections of air passages). G. Spiess.
71 Spirochæte pallida bei Syphilis. E. Hoffmann.
72 Recent Work on Diagnosis of Death from Drowning.—Zur Diagnose des Ertrinkungstodes. H. Marx.

63. **Elimination of Indican Through the Skin.**—Gans reviews four cases from the literature in which patches of a bluish stain on the skin were found to be due to the elimination of indican. In one instance, attention was attracted to the condition by bluish stains on the pillow cases. He reports a case personally observed. The patient was a woman of 35, who noticed, while taking a Carlsbad course for constipation, meteorism and lassitude, that her body linen was covered with fine blue spots immediately after a menstrual period. The linen looked like an example of what is called "spatter work." A few fresh blue spots were found every day for several months, most numerous during the menses. They then vanished for a year until during a time of great anxiety they reappeared, but afterward vanished permanently. During the time when the blue spots were most numerous a proportion of .026 to .035 per thousand of indican was found in the urine. Chemical examination showed the blue spots to be due to indigo.

64. **Curative Action of Magnetic Field.**—Krefft protests against the limitation of the term radiotherapy to Roentgen treatment alone. It should include all measures that utilize rays or lines of energy emanating from any source. He would apply the term also to treatment by exposure to the magnetic field of an electromagnet. He thinks that this offers great prospects of success in treating rebellious neuralgias, rheumatic, gouty and tabic pains, the insomnia of neurasthenia, etc. Irritable conditions in the heart and intestines also respond favorably to the action of the magnetic field. He calls it the "physical morphin." What it lacks in reliability for all cases it makes up by its absolute harmlessness.

67. **Relief for Poisonous Trades.**—Lewin reviews what has been accomplished in various countries in the way of protecting the workmen in poisonous trades. When proprietors and workmen co-operate in preventive measures excellent results have followed, as he shows by statistics from certain mirror factories, the average percentage of days of illness from mercurial poisoning having fallen from 13.52 in 1885 to zero in 1891. He enters into details in regard to the preventive measures advisable for the various trades, and emphasizes especially the importance of adequately instructing the workmen in regard to the dangers of the trade. He believes that the inventive genius of the workmen would soon devise means to do away with some of the dangers if they were fully aware of them. Placards and circulars distributed to the workmen are scarcely heeded by them. Lewin thinks that instruction in these matters should be given in the graded schools, and be specialized in the manual training and technical schools; these measures to be supplemented by warning cards given to the workmen for them to read at leisure. These measures presuppose an expert to impart the necessary information and to write the circulars, etc., and these experts have yet to be provided and trained for the purpose. The success would probably be greater if the state took the matter in charge.

69. **Principles of Physical Re-education in Tabes.**—Frenkel's method of re-educating the muscular system in tabes has been widely adopted and has accomplished wonders in many cases. The prognosis of uncomplicated lumbar ataxia is rendered grave by the rapidly progressive atony of the abdominal musculature and intestines and the severe cystitis from the lack of active exercise of the parts. These serious complications are becoming rarer and rarer now, as also the paraplegic stage of tabes, owing to the advice to exercise the muscles instead of to rest them. Massage of the muscles is not beneficial, as he had at first supposed, and he now warns explicitly against it. The correct application of the "exercise therapy" requires a knowledge of the normal processes of movement in the parts. Its incorrect application is liable to do harm. He gives a comprehensive picture of the physiologic co-ordinated movements, and describes the technic of examining for disturbances in co-ordination and for their various kinds and degrees. The musculature in tabes is characterized by what he calls hypotony. The capacity for co-ordinated movements is primarily acquired by practice, and thus can be reacquired when lost. The pulse is apt to be increased by the exercise, even when it lasts only two or three minutes. It should be normal again before attempting another exercise. Another point to be borne in mind is the lack of the sensation of fatigue. He has had a patient who could hold his arms stretched out horizontally for twenty-two minutes without fatigue, notwithstanding that his arms were so much affected by the tabes that he could hardly feed himself. This lack of the sensation of fatigue imposes extra care on the physician, as he must be the judge of the proper duration of the exercise. As a rule, twice a day and not longer than from five to fifteen minutes at a time, and in the severer cases not longer than two or three minutes, should be the limit. Improvement follows in every case, but the amount depends on the length of treatment rather than on the degree of inco-ordination. Several months are generally necessary or else the patient falls back into his old habits. Even the severest cases, if uncomplicated, give a good prognosis with persevering treatment. Some of his patients, with complete loss of the power of standing or walking, had these faculties entirely restored after six to twelve months of treatment. Extreme hypotony may require orthopedic apparatus. The worst prognosis is afforded by cases complicated by attacks of protracted pain or by gastric or intestinal crises. Total blindness was always hopeless in his experience until recently, but within the last few years he has modified his technic to adapt it to these cases, with surprisingly favorable results. He does not enter into details here, but refers to a communication soon to appear, in which this new technic will be described.

70. **Balneotherapy in Affections of the Air Passages.**—Spiess adds another to the long list of articles on the subject of balneotherapy in its various applications with which our German exchanges have been teeming since the Congress of Balneology at Berlin in March. He remarks that catarrh of the upper air passages is almost inevitable in persons who snore. Such persons are usually corpulent, short-necked and constipated. Exercise, fresh air, a light diet and a course of mineral waters will accomplish wonders, reducing the tendency to snore and healing the catarrh. Incorrect use of the voice is another factor in maintaining a catarrhal condition of these parts. The time at the health resort might be utilized for training the voice in better habits.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

73 (XXXI, No. 22.) *Zur Technik der Kropf-Operation (goiter). Riedel.
74 Ueber einen unter dem Bilde einer Ophthalmoplegia externa verlaufenden Fall von traumatischer Hysterie. A. Westphal.
75 Zur Pathogenese der primären Typhlitis. E. A. Polya.
76 Case of Codein Addiction.—Codeinismus. Pelz.
77 *Zur Kasuistik der Nerven-Krankheiten nach elektrischem Trauma. A. Raebiger.
79 *Epidemic of Edema in Prison.—Ueber die im Gefängnis fern. R. Lenhoff and Levy-Dorn.
79 Epidemic of Edema in Prison.—Ueber die im Gefängnis Düsseldorf beobachteten Hautodeme unbekannten Ursprungs. Eschweiler.
80 Fall von traumatischer Lungengangrän. T. Kulenkamp.
81 Phototherapy with Ultraviolet Rays.—Lichtbehandlung mittels bestimmter Strahlengruppen. Axmann.

73. **Technic of Goiter Operations.**—Riedel's experience with 223 operations for goiter has convinced him that there is all the difference between day and night between local and general anesthesia for these operations. He describes his technic in detail, and urges that in families in which cancer is prevalent a goiter should be operated on very early. No one can protect himself against a sarcoma, he remarks, but a carcinoma in the thyroid usually develops on the basis of strumous degeneration. By prompt removal of such a thyroid, the danger of cancer later is very much reduced. If there is already cancerous degeneration, the patient is inevitably doomed, whether operated on or not.

77. **Nervous Affections After Electric Accidents.**—Raebiger's four patients presented symptoms suggesting hysteria, neurasthenia, hypochondria and a simple psychosis, all combined. They were telegraph operators and had been affected by a lightning stroke in the vicinity of their instrument or by the electric current through the wires. Treatment on the basis that the symptoms were merely nervous functional dis-

turbances resulting from the emotional shock of the accident soon cured one, but the condition persisted unmodified or recurred at intervals in the others.

78. **Observations on Wrestlers.**—The heart was not found enlarged in the wrestlers examined after the wrestling matches, not even after the most strenuous bouts, but slight fever and albuminuria were always noted. The amount of the temperature rise was proportional to the length of the contest and to the strength of the contestants.

79. **Edema in Prison.**—Eschweiler has observed seventeen cases in the last two years in which apparently healthy men, entering the prison, became affected with edema of the feet and legs. The edema gradually extended upward, involving the trunk and face, but diminishing in intensity as it rose. The men's work kept them long seated at small tables.

Münchener medizinische Wochenschrift.

82 (LII, No. 20.) *Ueber Hämolysin-Bildung und Agglutination der Staphylokokken. G. Fraenkel and Baumann.
83 *Explanation of Poisonous Action of Sublimate.—Zur Erklärung der heftigen Giftwirkung von Sublimat. Bokorny.
84 Beobachtungen über Röteln-Epidemien (measles). H. Bahrdt.
85 *The Punch Method of Treating Acne.—Die Heilung der Akne durch ein neues narbenloses Operationsverfahren: das Stanzen. Kromayer.
86 *Roentgen Treatment of Goiter.—Ein neues Feld für die Radiotherapie? (Strumen-Behandlung.) L. Görl.
87 *Treatment of Sweating Feet in the Army.—Zur Behandlung des Schweissfusses in der Armee. Fischer.
88 *Percutaneous Action of a Narcotic.—Ueber perkutane Wirkung eines Schlafmittels (Isopral). R. Foerster.
89 Kasuistischer Beitrag zur Hebotomie (extramedian symphyseotomy). F. Hammer.
90 Ein neues scherenformiges Perforatorium. M. Neu.

82. **Hemolysin Formation and Agglutination of Staphylococci.**—The research reported confirms the assumption that the pathogenic staphylococci form hemolysins and agglutinate readily, while the saprophytic group does neither.

83. **Toxic Action of Sublimate.**—Bokorny found that minute scraps of algæ were killed or injured by corrosive sublimate even in a 1 to 100 or 1,000 million dilution, while a large clump was not much affected by quite strong solutions. The action of sublimate is thus a quantitative chemical reaction. A certain amount of the protoplasm albumin requires a given amount of sublimate to destroy it. This proportion for the spirogyra is about one two-hundredth of its own weight.

85. **Punch Method of Treating Acne.**—Kromayer's rotation instruments or drills were described recently in these columns on page 141. Years of experience have confirmed his conviction that this mode of treating acne is superior to all others to date. It prevents the development of the affection in predisposed follicles, while it aborts and cures the already established disease without leaving a trace. The punch removes a little cylinder of flesh, and this relieves the tension of the parts and promotes absorption so that healing proceeds rapidly. Indolent processes, such as torpid tertiary syphilitic gummata and papules, long rebellious to various measures, can be rapidly stimulated to resorption and healing by the use of the punch.

86. **Roentgen Treatment of Goiter.**—Görl reports eight cases which demonstrate that the abnormal thyroid gland can be influenced by the action of the Roentgen rays. He noticed that the skin in these patients was exceptionally sensitive to the rays, and suggests that persons whose skin is particularly sensitive should be examined for possible struma. In one of his patients, the throat measured 40 cm., but subsided to 35 cm. after four exposures. In another, the throat measured 46.5 cm. and subsided to 45 cm. after four exposures. In a third, the throat subsided from 40.5 cm. to 35 cm. under two exposures. The patients were from 16 to 54 years of age. None of the exposures was longer than ten minutes; the distance was about 10 cm., and the intervals between the sittings were from four days to two or three weeks. [Thirteen more cases were reported by Stegmann of Vienna, in June, with equally favorable outcome. Two of the patients presented the Basedow symptoms.—Ed.]

87. **Treatment of Sweating Feet.**—Fischer's remarks apply especially to military service. The feet should not be bathed, as this softens the skin and undoes the effect of the treatment. This consists in first rubbing off the feet with a 1 per cent. alcoholic solution of salicylic acid, and then dusting them with a powder containing formalin and the "fat powder" recently introduced into dermatologic practice. The feet and socks are dusted with the powder twice a day, and the skin soon dries and hardens. Insoles are not advisable. He adds that a wet boot dries much more rapidly if packed with hay or straw.

88. **Percutaneous Action of a Sedative.**—Foerster has found that it is possible to obtain the sedative action of a narcotic by merely rubbing it on the skin. He uses equal parts of castor oil and alcohol as the vehicle for three parts of the drug and applies it lightly to the skin, covering at once with rubber tissue. The smoothing and narcotic action of the drug was soon apparent.

Therapie der Gegenwart, Berlin.

Last indexed XLIV, page 583.

91 (XLVI, No. 1.) *Treatment of Capillary Bronchitis with Mustard-water Packs.—Behandlung der Kapillär-Bronchitis mit Senfwassereinwicklungen. O. Heubner (Berlin).
92 *Enteroptose und Hängebauch (pendulous abdomen). H. Quincke (Kiel).
93 *Cardiolysis und Pericardio-mediastinal Verwachsungen (adhesions). F. Umber (Altona).
94 Results of Suture of Bone in Fractures of Patella.—Erfolge der Knochennaht bei Kniescheibenbrüchen. F. Trendelenburg.
95 Einiges über die Lupustherapie der Zukunft und der Vergangenheit. (Past and Future of Lupus Treatment.) P. G. Unna (Hamburg).
96 Quecksilberjodid-Jodkalium Lösung bei Syphilis (potassio-mercuric iodid in syphilis). F. Penzoldt (Erlangen).
97 *Pain in Chronic Gastric Catarrh.—Schmerz-Anfälle bei chronischen Magen-Katarrh. I. Boas (Berlin).
98 *Eine weitere Indikation zur lokalen Anesthesie mittels Ethyl-Chlorid und Methyl-Chlorid. H. Fischer.

91. **Treatment of Capillary Bronchitis with Mustard Water Packs.**—Heubner ascribes a life-saving value to this procedure in many cases of capillary bronchitis where pulmonary circulation and the ingress of air is hindered by the swelling of the mucous membrane and the accumulation of inflammatory products in the bronchioles. The remedy acts by drawing the blood to the surface, thus lessening the amount of blood to be moved and diminishing the obstacle due to swelling of the mucous membrane. He describes his technic as follows: Five-tenths of a kilogram or more of mustard flour are stirred into an open dish containing 1.5 liters of warm water at 40 C. until irritating vapors are given off. (This is a little more than a pound of mustard in three pints of water at 104 F.) A linen cloth large enough to envelop the child is soaked in the liquid, wrung out, and spread out on a blanket of the same size. The naked child is laid on the mustard sheet, the upper edge on a level with the neck. It is drawn up, and over it the blanket is rapidly tucked around the neck and wrapped around the feet. This pack is left from 10 to 20 minutes, according to the vitality of the child. When removed from the pack, the whole body is red. The child is quickly placed in a warm bath or sponged with warm water in order to remove the particles of mustard still adhering to the skin. It is then put in a second pack of lukewarm water and left from one to two hours, if possible, in order to maintain as long as possible the hyperemia of the skin which has been secured. In many successful cases, the child looks like a scarlet-fever patient all day. While in the second pack, the temperature is liable to rise, and the child, therefore, should be under constant supervision, in order to interrupt the process if its head and face become red or as soon as it sweats thoroughly. A second warm bath is then given, and, in case the child is very hot, cold water may be quickly poured over it. The child is then wiped dry and left undisturbed for the rest of the day. Sometimes the crisis follows, with rapid convalescence, but more frequently a repetition of the process is required on the second or third day or later. It should not be applied, however, more than once in twenty-four hours. This process, like all others, fails in some cases. Where it is not successful in producing reddening of the whole surface of the skin it is better not to attempt to repeat it.

92. **Enteroptosis and Pendulous Abdomen.**—Quincke recognizes three causes for the displacement of the abdominal viscera: 1. Relaxation or stretching of the abdominal wall. 2.

Change in the form of the cavity. 3. Stretching of one or more of the suspending ligaments. One test of the condition of the abdominal muscles is the change of position of the umbilicus on coughing when standing and when lying down. With a moderate degree of pendulous abdomen the umbilicus rises 1 cm. or more on coughing in the standing position, but not when reclining. This is a reliable index of the amount of the relaxation. The upper half of the rectus being relaxed, the umbilicus sinks. On coughing in the upright position, the upper half of the muscle contracts and raises the umbilicus. The intensity of the symptoms does not correspond to the degree of ptosis present. Very high degrees may exist without any symptoms; on the other hand, slight downward displacement may entail striking symptoms. Often the ptosis is so slight that it is not recognized. This is frequently important, because otherwise ineffectual treatment becomes successful when the abdominal wall is supported and strengthened. In many cases these measures alone are sufficient. To illustrate his statements, Quincke reports a number of cases, emphasizing the fact that in all disturbances dependent on enteroptosis an important point to bear in mind is that they appear pronounced in an upright position and on lying down become much diminished or vanish entirely. Often immediate relief will be obtained by supporting the abdomen below the umbilicus with the hand. Besides the ordinary symptoms, backache, sideache, and dyspepsia may be noted. The backache may be a radiation of the epigastric pain. It then corresponds to the lower thoracic vertebræ. In case of a large, fatty abdomen it may be due to fatigue of the sacrolumbalis muscle, since the displacement of the center of gravity toward the front necessitates correction by constant backward bending of the spine. The pain in the side may likewise be partly muscular, partly due to traction from the splenic flexure of the colon. The disturbances in breathing with pendulous abdomen may be easily overlooked, because the effect of pressure by the intrathoracic fat and the upward pressure of the diaphragm by the intra-abdominal fat attract more attention. Not only is the expiratory power lessened by loss of tone in the abdominal muscles, but the bottom of the thorax is dragged down with the sinking of the viscera, and the elastic pressure exerted by the bowels on the under surface of the diaphragm is still further reduced. The pressure may even be negative, as shown by the occasional sinking in of the epigastrium. The relations between the diaphragm and the ribs are disturbed in many ways, and this is liable to induce disturbances in breathing, from muscular fatigue. Ordinarily, this manifests itself by shortness of breath on exertion or even on standing up, less frequently, by attacks of dyspnea, distress and cardiac oppression. Sometimes a paroxysm of weakness and dizziness accompanies these sensations, and disturbances of the vascular tone from stretching of the splanchnic nerve may also play a part. The conceptions of enteroptosis and pendulous abdomen are not exactly identical, since with normal abdominal walls a single viscus may sink, while, on the other hand, mechanical pendulous abdomen, without the sinking of any viscus, may be occasioned merely by deposits of fat. Most cases of enteroptosis are accompanied by a more or less pendulous abdomen, and this is important for treatment. The insufficient abdominal muscles may be strengthened and the stretched abdominal walls supported with a bandage. Thus by pushing back the small intestine we may indirectly improve the position of the higher abdominal viscera. The abdominal support should be supplemented by doing away with every constricting band, the support for drawers and skirts, being partly or entirely transferred to the shoulders.

93. **Cardiolysis and Pericardio-Mediastinal Adhesion.**—According to Umber, adhesion of the two layers of the pericardium is a frequent complication of heart affections, but may be entirely latent so far as symptoms and effect on the heart action is concerned. Adhesion of the pericardium, as a whole, to the neighboring parts, and especially to the anterior wall of the chest, may be the cause of great impediment to the action of the heart, bringing about a lack of compensation which Brauer has successfully endeavored to remedy by resection of part of the chest wall. He has operated on three patients, to which Beck has added three more. Umber remarks that such an operation, which aims to free the heart from its fetters, is likely to yield good results only if the heart is still capable of function. When advanced degeneration of the heart muscle already exists, this cardiolysis would be useless. On this account, in determining the indications, Brauer laid weight on the circumstance that the systolic retraction of the chest wall must be very marked. Otherwise it would be questionable whether or not the heart, after its release, would be capable of maintaining compensation. Cases which meet fully all the indications for successful cardiolysis are rare. Umber reports an additional patient operated on with brilliant results. He noted a second diastolic sound which was synchronous with the rapid rebound of the chest wall. Since it persisted after removal of the bone, it can not be attributed, as Friedrich thinks, to vibration of the wall, but must be regarded as the work of the heart itself. This phenomenon of diastolic bulging of the chest wall, in connection with its systolic retraction, and the diastolic collapse of the cervical veins, is of the highest import for the recognition of the latent development of pericardio-mediastinal adhesion, in which such brilliant results can be attained by the operation of cardiolysis. The indications for operation should be determined after rest and appropriate treatment have shown that the heart muscle is still sound.

97. **Pain in Chronic Gastric Catarrh.**—Boas called attention long ago to the attacks of pain in chronic gastritis, especially in the atrophic form. These attacks are not so rare as sometimes believed. Boas recognizes two forms. The first, originally described by Einhorn, has exactly the same character as the pain of gastric hyperacidity. So far as the etiology of these gastralgias is concerned, he does not agree with Einhorn that the pain is due to mechanical irritation of the mucous membrane by the coarser particles of food which remain after the fluids have left the stomach. Otherwise it would be difficult to understand why there is not pain in all cases of severe gastritis, although it is well known that the severest forms of achylia gastrica may run their course without the slightest discomfort. He believes that Leo is right in ascribing the pain to the presence of small ulcers in the neighborhood of the pylorus. As evidence of this, he has often found occult blood in the feces and stomach contents. In chronic gastritis and in case of atrophy of the stomach mucosa, occult hemorrhage is one of the rarest phenomena. Another form of gastralgia may be observed which is distinguished by the fact that the pain occurs spasmodically, is more severe, is of a lancinating character, and is entirely independent of the kind of food or the time of taking it. This form, which is often observed in severe achylia gastrica, appears to be of nervous origin. It is probably connected with lesions of Meissner's plexus, the flat layer of nervous masses in the submucosa of the stomach and small intestine.

98. **Local Anesthesia for Suturing Wounds.**—Fischer uses a mixture of ethyl chlorid and methyl chlorid for spraying the raw surfaces and the lips of the cutaneous wound before suturing them.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Ophthalmic Neuromyology, A Study of the Normal and Abnormal Actions of Ocular Muscles from the Brain Side of the Question. By G. C. Savage, M.D., with 51 Illustrations. Cloth. Pp. 221. Published by the author, Nashville, Tenn.

Second Biennial Report, or the Nineteenth and Twentieth Annual Reports of the State Board of Health of the State of Kansas, from Jan. 1, 1903, to December 31, 1904. Cloth. Pp. 181. Topeka, Kansas: George A. Clark, State Printer, 1905.

Surgeon Generals of the Army of the United States of America. By J. E. Pilcher, M.D., Ph.D., L.H.D. Cloth. Pp. 114. Price, $1.50 net. Carlisle, Pa.: Association of Military Surgeons, 1905.

Syllabus of Materia Medica. Compiled by W. Coleman, M.D. Second Edition. Cloth. Pp. 189. New York: William Wood & Co., 1905.

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Original Articles

CARCINOMA OF THE BREAST.

TEN YEARS' EXPERIENCE WITH MY METHOD OF RADICAL OPERATION.*

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NEW YORK.

On November 12th, 1894, I read a paper[1] before the section on surgery of the New York Academy of Medicine, entitled: "An Improved Method of Radical Operation for Carcinoma of the Breast." This paper—announced to the chairman of the section Oct. 10, 1894—gave a report of but one case operated on by the new procedure, (on Sept. 19, 1894), while the operation itself was briefly but fully described. The chief points were that the cancerous breast together with the underlying pectorales muscles as well as axillary glands and surrounding fat, were removed *in one mass,* and that the blood vessels were primarily ligated at their origin. The incision I used at that time began about one inch below the insertion of the pectoralis major muscle onto the humerus, traversed the axilla, surrounded the breast at its base and ended over the sternum, somewhat beyond the middle line of the body. In order fully to expose the structures below the clavicle, the upper skin flap was divided by an incision upward, perpendicular on the first, striking the clavicle at about its middle (Fig. 2). In cases of need this latter incision was carried into the supraclavicular space for the removal of glands in that region.

In the course of the last six years I have changed the direction of the external part of the incision and have also abandoned the additional cut up to the middle of the clavicle.

The principles of this method I have employed in all operations for cancer of the breast that have since come under my care, making such changes in the technic, from time to time, as larger experience seemed to render indicated.

Since the publication of that first article of mine—which, by a strange coincidence, was read simultaneously with the appearance of Halsted's paper on this subject,[2] though conceived entirely independently, I have published no further reports, intending that ample time should elapse to permit of careful observation as to the lasting merits of the operation.[3] On several occasions I have, however, presented patients thus operated on, before the N. Y. Surgical Society, and have, furthermore, given a brief résumé of the operation as carried out by me within the last six or seven years, at the session of the American Medical Association, Atlantic City, 1904, where I had originally planned to read this paper.[4]

I will not here dwell on the details of the changes in the technic that I saw fit to introduce in the course of my experience with the method, but will simply describe the operation as I carry it out to-day.

PREPARATION OF THE PATIENT.

On the day preceding the operation the entire anterior portion of the thorax, the axilla, arm and back of the respective side to the spinal column, as well as the anterior aspect of both thighs are shaven. The latter is done for the sake of having sufficient material for grafting. On the operating table, the patient having been anesthetized, this entire area is once more thoroughly prepared in accordance with aseptic principles. Two long, rectangular horse-hair pillows, covered with rubber-cloth, and wrapped in sterile towels, are placed lengthwise along either side of the spine. In this way the body of the patient is slightly raised from the operating table and hence access to the deeper parts of the axillary cavity is greatly facilitated. (Fig. 1.) The hand and forearm of the respective side, including the elbow joint, are wrapped in sterilized towels and held in place by an aseptic roller bandage. The patient's head is covered with a wet towel, fastened by a bandage around the forehead and occiput or with a rubber cap. A nurse, prepared as to assist at operation, holds the patient's arm (flexed at the elbow to an angle of 90 degrees) slightly raised above a line that would form a right angle with the longitudinal axis of the body. She stands next to the anesthetist, facing the operating field, holding the patient's hand with one hand and supporting the elbow with the other. The patient's arm is put through the cut in the sterile sheet that covers the entire body of the patient.

TECHNIC OF OPERATION.

First Step.—Skin incision, two flaps are formed, a lower and an upper one.

(a) Formation of lower flap: The incision starts at the point of insertion of the pectoralis major muscle on the humerus, passes downward and inward, parallel to and about one and one-half inch above the border of the pectoralis major muscle until the base of the breast is reached, then continues along the lower edge of the latter and ends somewhat beyond the middle line of the body, over the sternum[5] (Fig. 3). With a few cuts the lower flap is loosened and turned downward—as much subcutaneous fat as possible being left attached to the breast—until the border of the latissimus dorsi muscle is exposed in the axillary cavity and, further inward, the chest wall (Fig. 4). The border of the latissimus dorsi is first followed downward to the bundles of the serratus anticus major and then up to the mass of fat that enters the bicipital sulcus of the arms. The fat is bluntly pushed off the anterior border of the muscle with the handle of the knife, and a loose compress of dry aseptic gauze is temporarily packed into the basis of this whole wound.

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* Read before the New York State Medical Association, 1904, and before the Section on Surgery of the New York Academy of Medicine, 1904.

[1] New York Medical Record, Dec. 15, 1894.

[2] Annals of Surgery, 1894, vol. xx, p. 497.

[3] An operation for cancer of the breast, closely resembling mine was described by Z. Rotter of Berlin in the *Berlin klin. Wochen.,* 1896, Nos. 4 and 5, more than a year after the publication of my first article. In 1899 O. Witzel of Bonn emphasized the advantage of the preliminary ligation of the axillary vessels near the trunk, when operating for cancer of the breast. (*Deutsche med. Wochenschr. Vereinsbeilage,* 1899. No. 33.)

[4] THE JOURNAL A. M. A., Aug. 16, 1904.

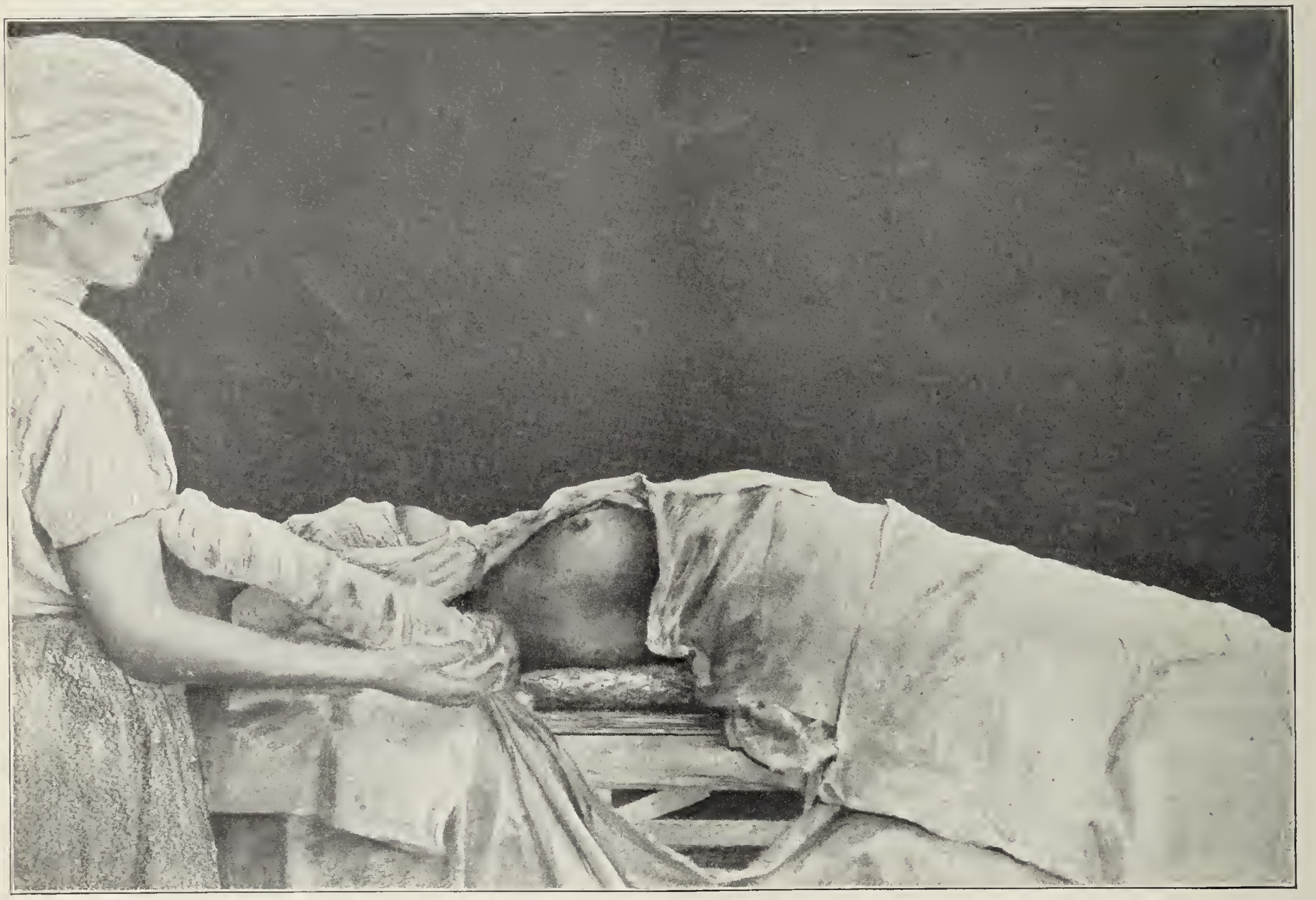

Fig. 1.—Patient on table ready for operation. The sterile sheet is pulled down in order to show pillow raising the patient's back.

(b) Formation of upper flap: The inner and outer parts of the first incision are united by an incision carried along the upper border of the breast, the angles necessarily formed being rounded out as far as this is feasible (Fig. 3). Again, as much fat is left attached to the breast as can be done without endangering the nutrition of the skin; special care is taken not to include the pectoral fascia. By means of sharp retractors, the breast and muscle are then pulled downward by one of the assistants, while the other holds up the upper flap, which is then prepared off by the operator until the cephalic vein is reached and the lower border of the clavicle with the sterno-clavicular articulation exposed. The tissues covering the latter are left undisturbed (Fig. 4).

Second Step.—This consists of exposure of the axillary and subclavian veins after dividing the tendon of the overlying pectorales muscles.

(a) The lower border of the cephalic vein which runs within the groove between the pectoralis major and deltoid muscles, is followed up to the insertion of the tendon of the pectoralis major onto the humerus; the tendon is quickly exposed in its upper as well as in its lower aspect, in the latter place by clearing the lower border of the muscle, near the tendon, so that the axillary fat is fully detached. This having been done, the arm is lowered somewhat by the nurse, in order to relax the pectoralis major. Now, the surgeon, encircling the tendon from below with his forefinger (Fig. 5), cuts it off close to the humerus. By means of sharp retractors the muscle is pulled inward and downward, being loosened at the same time with the knife from the cephalic vein, until the clavicle is reached, when it is cut off close to and alongside the lower border of this bone and of the sternoclavicular articulation. (The vessels crossing the operating field are doubly clamped and divided, and the nerves, entering the belly of the pectoral muscle cut.) The thorax and the intercostal muscles together with the upper part of the pectoralis minor, now come into view.

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[5] The illustrations accompanying this article and showing the various steps of the operation represent drawings from photographs of dissections on the cadaver. As I needed colored illustrations also in connection with the reading of my paper, I did the work twice, first, at the dissecting room of the College of Physicians and Surgeons, through the courtesy of Dr. George Huntington, and then at Cornell University, through the kindness of Dr. John Rogers, Jr. I would here express my sincere thanks to them, and also to Dr. Martin Rehling. former house surgeon of the German Hospital of New York, who, in both instances, assisted me in preparing the various steps of the operation. I am, further, greatly indebted to Dr. Henry Macdonald of Morris Park, L. I., the artist who made the drawings in this perfect manner, from the photographs taken by him.

This step of the operation is greatly facilitated if the surgeon assists in the downward traction exerted by the sharp retractor held by one of the assistants pressing his left index and middle fingers on the bundles of the belly of the muscle. The tendon of the pectoralis minor is bluntly freed from the surrounding tissues and divided from the coracoid process, the left forefinger again encircling it (Fig. 6). Care has to be taken not to injure the subclavian vein which runs just beneath the tendon.

(b) Transverse division of the fascia overlying the axillary vessels: The axillary and subclavian veins are brought into view and their lower border is bluntly exposed.

Third Step.—This consists of extirpation of the axillary and subclavian glands with surrounding fat.

(a) The gauze tampon that was placed inside of and underneath the lower flap, is removed.

(b) The axillary fat covering the upper portion of the latissimus dorsi muscle is split up to the axillary vein, thus dividing it from the mass of fat that enters the sulcus bicipitalis brachii; it is pulled downward by sharp retractors.

There is no danger here of injuring the axillary vein, since this has already been fully freed, and the left forefinger is pushed underneath the fat up to the vein, its nail resting on the same (Fig. 7).

(c) Beginning at this place, the lower border of the axillary and subclavian veins is carefully followed up to the spot where the latter disappears underneath the clavicle. Every vessel, that is come across, is doubly caught and divided between the clamps. In this way little or no blood is lost (Fig. 8). The two superior subscapular nerves are always carefully preserved, but not the third, the one for the latissimus dorsi muscle. It is usually deliberately divided on its way across the axillary cavity close to the main vessels, and again with the bundle of artery and vein at the point of entrance right at the exposed border of the muscle. I do so, because I fear that in attempting to preserve the nerve in its entire course, infected tissues might be left behind. I have never seen any harm resulting from thus sacrificing the nerve with reference to the future use of the arm.

Fourth Step.—This is the formation of a pedicle over the sternum, and the removal of the mass.

(a) The first assistant takes hold with both hands of the tissues so far loosened, without, however, exerting the slightest traction, merely supporting them. If he does pull, he is liable to tear off patches of the periosteum or perichondrium of the rib or their cartilages at places where the latter are firmly attached to the origin of the muscular fibers, and if such bared spots can not be immediately covered by living tissues or grafts, a slowly developing necrosis may be the consequence.

Returning to the exposed subclavicular space, the surgeon, in turning the blade of the knife horizontally, that is to say, perpendicularly toward the thorax, now cuts rapidly down to the chest wall, taking care not to injure the bundles of the serratus anticus major muscle. If he should not thus turn the blade of his knife, but cut perpendicularly downward toward the subscapular muscle, he would enter the fat covering and enveloping the blood vessels and nerves of this region, thus running the risk of unnecessarily causing considerable hemorrhage and of injuring the subscapular nerves. In the general run of cases, this region need not be explored. Only in very far-advanced cases did I find a few infected glands in this area.

(b) With the operator's left hand on the fibers of the pectoralis major muscle to be cut close to the chest wall, pressing from below the mass gently toward the sternum, thus supporting the weight carried by the first assistant, short quick incisions, parallel to and almost on a level with the ribs, cut the fibers of the pectoralis major near their origin. The perforantes arteries and veins, being under tension and, hence, generally easily discernible, are also doubly clamped and divided. If not well discernible they may be cut first and then at once secured with clamps. If proper care is exercised, very little blood is lost. Now the only tissue by which the extirpated growth still remains attached is the pedicle, formed by the muscular fibers at the sternum. The whole mass is then well raised by the first assistant, and the operator, grasping this pedicle with the left hand, divides it close to the sternum, with a few rapid cuts with a pair of large curved scissors or with the knife (Fig. 9). The severed arteries are caught with clamps after each clip with the scissors. The operation, as such, is completed.

The average time consumed in this operation, which I have called "the radical operation for carcinoma of the breast," is from 25 to 30 minutes. I have done it in 12 and 16 minutes and, on the other hand, have used from 50 to 60 minutes and even more in cases in which the glands closely surrounded the axillary and subclavian vein, and supraclavicular infiltration necessitated my cleaning out this space. For the purpose of facilitating the subsequent grafting of the resulting defect, I have—as an experiment—for the last nine months, in patients *who came to operation early,* tried to preserve a small stump of the belly of the pectoralis minor muscle (Fig. 10), which, it is the consensus of opinion among pathologists, is never infected by carcinoma, except in far advanced cases in which the diseased tissue has grown through the muscles toward the ribs and a cure by operative means is out of the question.

Fifth Step.—This consists of ligation, drainage, and suture of wound.

(a) Ligation: I have always made it a point not to lose time by applying ligatures during the operation. The principal blood vessels being cut close to the main vessels, except in the beginning and toward the end of the operation, no appreciable amount of blood is lost. As stated before, all visible arteries and veins, even the smallest ones, are brought to view during the principal part of the operation by blunt preparation with the handle of the knife, forceps, curved scissors or grooved director, then caught by two clamps and divided. Other vessels that have to be cut during the early part of the operation, before having been clamped, are immediately secured. Six dozen artery clamps should be on hand. I have always been able to get along with this number, and have sometimes used less. If this number can not be procured, the surgeon may have to apply ligatures in the course of the cutting part of the operation. If, toward the end of the operation, the supply of artery forceps becomes exhausted, those applied to the smaller vessels in the beginning of the work may now be safely removed without giving rise to further hemorrhage, since the trunk has meanwhile been clamped. After

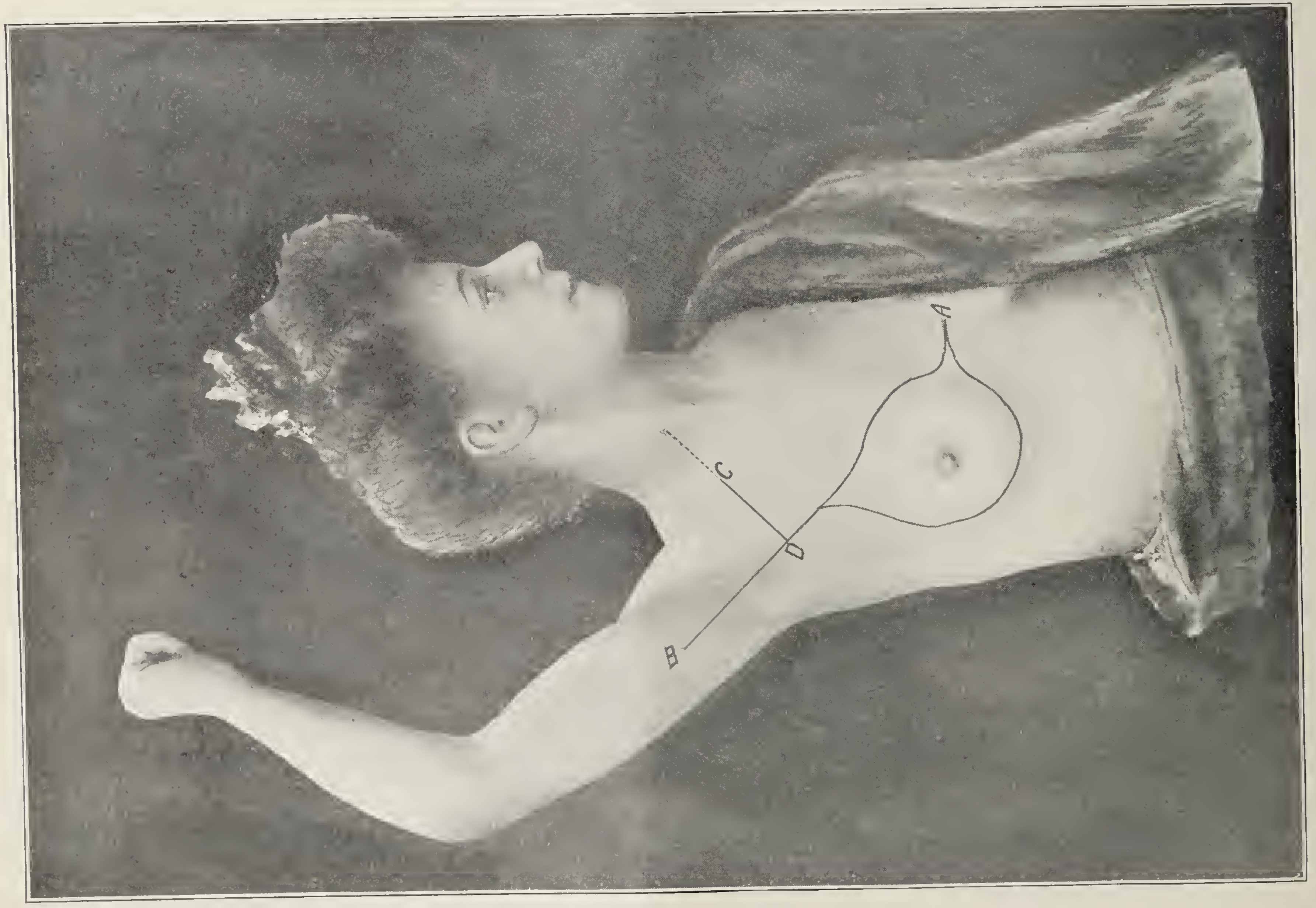

Fig. 2.—Original incision as devised in 1894. The dotted line shows continuation into the supraclavicular space for the removal of infiltrated glands.

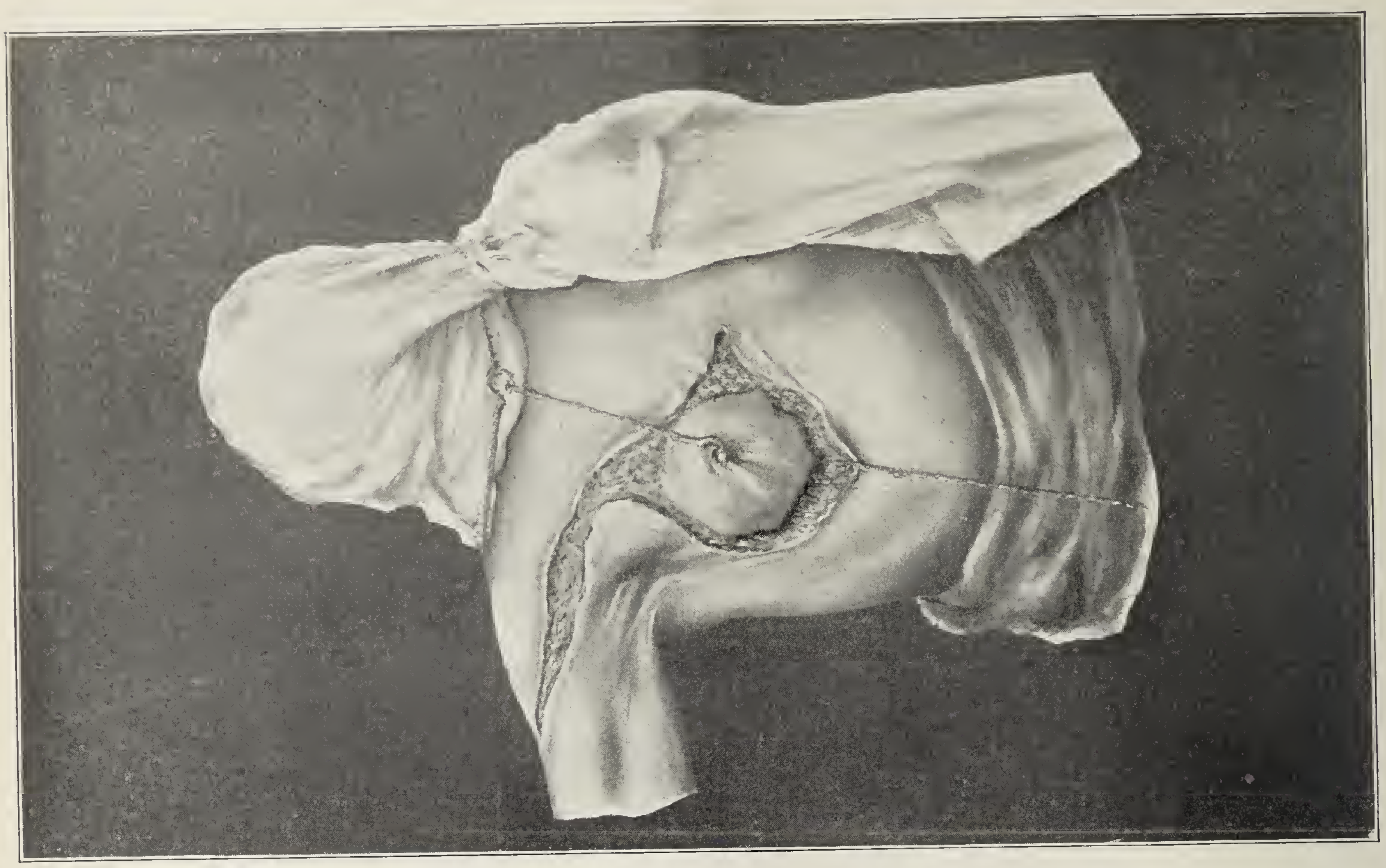

Fig. 3.—Skin incision as practiced since 1898.

the pedicle has been divided and its vessels are caught, usually from 30 to 50 clamps will be found hanging on the surface of the wound. After all vessels are secured, whatever further small bleeding points there may be, are caught and ligated until the wound, after frequent mopping, appears to be perfectly dry. Irrigation is never used, the operation is carried out in the dry, aseptic way, from beginning to end.

(b) Drainage: I invariably drain the axillary cavity and have always found it to facilitate convalescence. The surgeon places the second and third finger of his left hand within the wound at the border of the latissimus dorsi muscle and at the lowest point of the flap respectively, and makes an incision parallel with the border of the flap, from 2 to 3 inches away from it. If the inward pocket seems too deep, the belly of the muscle is sometimes bluntly perforated with the dressing forceps, always, of course, parallel with the direction of its fibers. The two halves of a divided large drainage tube are pulled through the incision, the upper end being made to rest in the groove of the axillary cavity near the chest wall. Each outward end is secured with a small safety pin. When there is fear of the tube being moved, during the subsequent work, the upper end is fastened to the nearest tissues with a stitch of finest catgut which will become absorbed within a few days. A smaller gutter drain is inserted at the upper angle of the wound, running inward to the divided tendon of the pectoralis major muscle. There is usually some parenchymatous oozing in this region, although the bleeding surface of the stump has been doubled up by running catgut suture.

(c) Suture of wound: A small sharp hook is placed in the upper angle of the wound by the assistant standing next to the operator; upper and lower flap are stretched by the first assistant pulling them well towards the sternum; continuous suture, with catgut, as far as possible, pulling the lower flap upward and inward as much as feasible, in order to secure a proper reformation of the axilla (Fig. 11). In case of tension, a few interrupted sutures are added until the preserved stump of the belly of the pectoralis minor is reached. The same manoeuver is carried out at the opposite angle of the wound, except that here interrupted sutures will sometimes have to be employed instead of the continuous suture. A large defect is now visible (Fig. 12).

As mentioned before, I have found, in the course of my work, that by preserving a small stump of the belly of the pectoralis minor muscle, usually two-thirds of the lower defect border can be stitched to this stump by a continuous catgut suture. This, of course, materially reduces the size of the defect, besides improving its surface for the purpose of grafting (Fig. 13). This suture begins at the place where the running suture of the outer part of the wound reaches the chest wall and preserved stump of the belly of the pectoralis minor muscle, respectively. I have tried all kinds of sutures, interrupted, mattress, etc., and have come to the conclusion that an ordinary continuous suture best answers the purpose. When trying to turn the cut surface of the skin of the upper wound border down to the chest wall, sufficient muscular tissue will generally be found to be lacking, in which case a few interrupted stitches grasping some of the tissue of the intercostal muscles will have to be used to bring the cut surface of the skin of the flap border in as close proximity to the chest wall as possible. Of course, the knots must be placed on the skin so as not to interfere with the subsequent grafting (Fig. 13). Careful future observation of patients, thus treated, will show whether this preservation of a small stump of the pectoralis minor muscle in those who come to operation early, is an advisable procedure. I would mention that one can, of course, also get along without preparing the area to be grafted on, in the manner just described. I myself have, for eight years, grafted directly upon the chest, putting special grafts also on the cut surface of the subcutaneous fat all around the wound; but the surface of the depth of the wound is naturally not so even.

Sixth Step.—This consists of grafting the defect. Experience has taught me, that it is best always to graft immediately after operation.[6] Both thighs having been prepared, I never run short of material, no matter how large the area to be covered. I cut the grafts as thin and long and wide as possible, placing them in a line running parallel with the longitudinal axis of the body; the ends are made to rest on the skin, their borders overlapping, as the shingles of a roof (Fig. 14). Great care is needed to press out all bubbles of air and to thoroughly flatten out the borders, which have a tendency to curl. Saline water is, of course, used during the entire procedure, whenever necessary.

Seventh Step.—This is the dressing of the wound. While the assistant covers the superficial thigh wounds with long strips of sterilized rubber tissue, one overlapping the other, to be covered with aseptic gauze and held in place by two long strips of zinc adhesive plaster, surrounding thigh and dressing in serpentine shape and running in opposite directions, the operator covers the grafted breast area, including the adjacent borders of the skin flap, with similar long strips of sterilized rubber tissue,[7] placed in a horizontal direction. A few pieces of shaken gauze are then put on top and held by the assistant; small pieces of divided compress are pushed under the safety pins securing the drainage tubes, just as we are wont to do in other operations, and the entire operating field is covered by plenty of loose gauze, with compresses on top. Meanwhile the patient has been pushed upward, and the headpiece of the operating table having been lowered, the upper half of the body, supported by the anesthetist and the assistants, is well exposed for applying the dressings. The arm is placed across the chest, the axillary cavity having been previously filled with large pads of sterilized cotton batting. The same style of pads are placed on top of the entire arm, and a Desault bandage is applied with ordinary white gauze bandages. Then the patient is put to bed and the elbow supported by a small pillow.

TIME CONSUMED BY THE OPERATION.

The average time required from the beginning of the operation to the completion of the dressing is about two hours. I have, in a number of instances, done the work

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[6] During the first years of this work I grafted skin from eight to ten days after operation. The defect was not curetted, but the grafts were placed on the granulating surface, without the latter having been touched. The grafts took in the majority of the cases, but patients consider skin-grafting a serious operation, and they dread it, so much the more if the first attempt is unsuccessful and the procedure must be repeated. Surely, time, pain and annoyance can be saved our patients by always grafting at once.

[7] After much experimenting, regarding the best dressing for the grafted area, including the celluloid nets of Kuhn (*Centrabl. f. Chir.*, p. 613), I have come back to the imperforated rubber tissue as the best. Open wound treatment, viz., exposing the grafted area to the air, would be still better, but asepsis requires a sterile dressing.

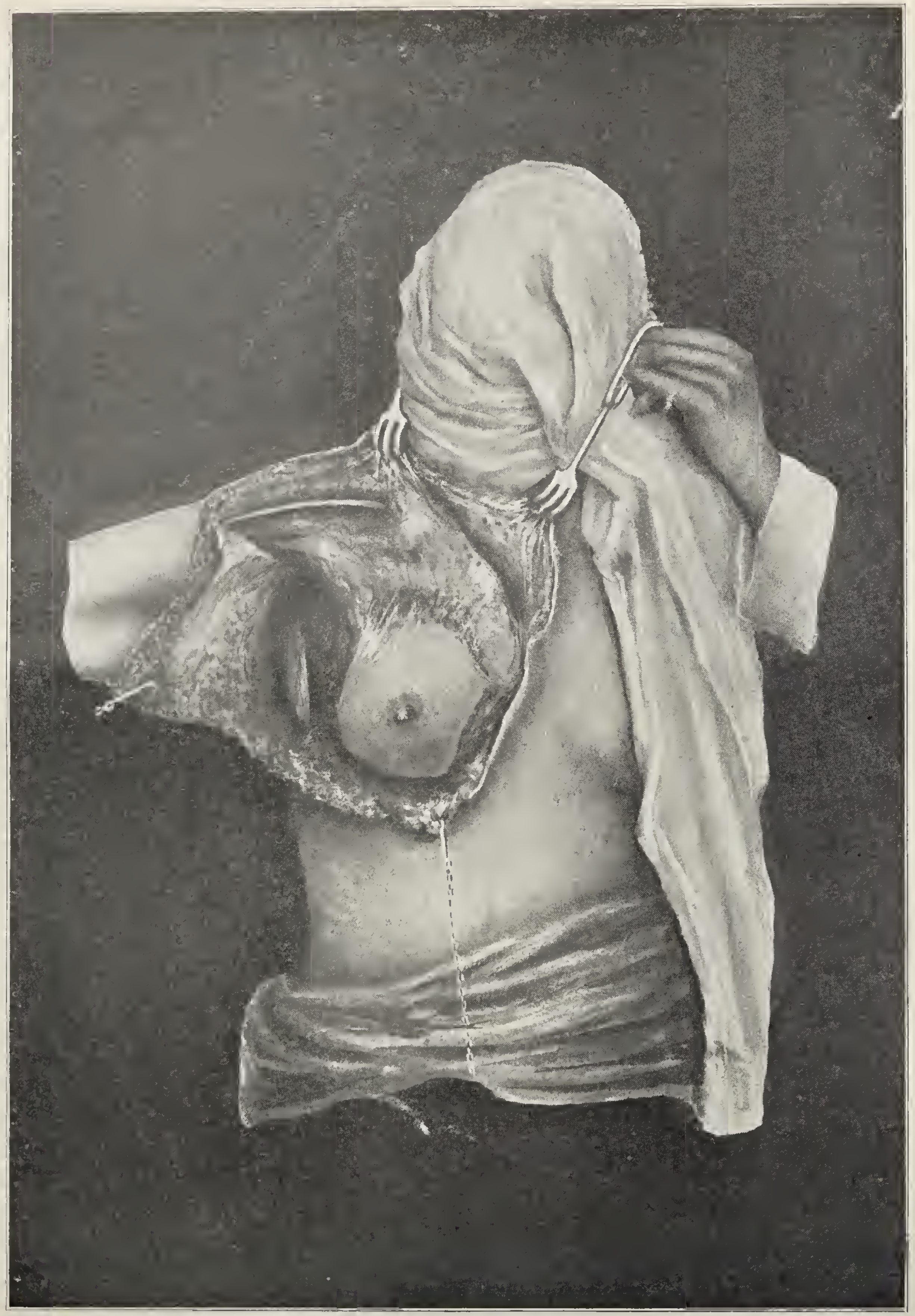

Fig. 4.—The two skin flaps turned back. Border of latissimus dorsi, cephalic vein and clavicle with the sternoclavicular articulation, the landmarks, exposed.

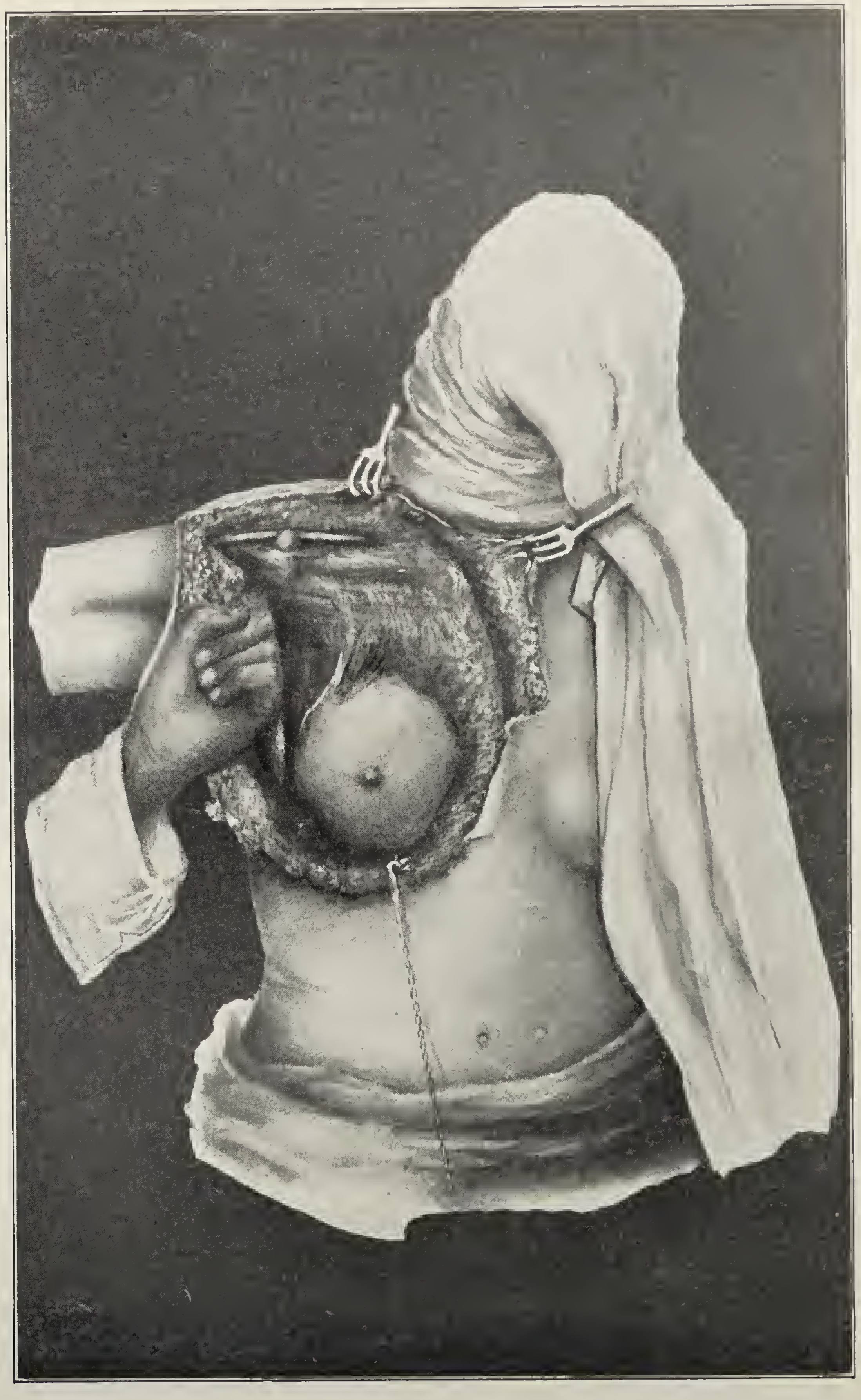

Fig. 5.—Insertion of pectoralis major muscle exposed. Operator's left index finger encircling its tendon.

in from one hour and ten minutes to one hour and thirty minutes, and once, in a very difficult case, necessitating immediate excision of infiltrated supraclavicular glands, required three hours in which to do it. The cutting part of the operation, such as stated above, can usually be accomplished within from twenty-five to thirty minutes. I have done it in twelve, sixteen, eighteen and twenty minutes. I am aware, of course, that in this kind of an operation speed is not a paramount consideration; still, it is an advantage, other points being equal.

AFTER-TREATMENT.

For the first twenty-four hours, the patient is kept flat on her back, with the lower end of the bed slightly raised, if needs be (in anemic patients). From the next day on, the patient may have one or more pillows, according to individual desire. The elbow remains supported by a small pillow. After considerable experimenting as to the best time for changing the first dressing, I have decided on the sixth day, when it will almost invariably be found that the grafts have taken well. One of the long split drainage tubes is removed at the same time; the other, as well as the smaller tube at the upper angle, is materially shortened, and a wet dressing with Thiersch's solution is applied.

The second dressing is changed two days later, when the tubes are removed entirely and the small wound in the arm that gave exit to one of the tubes is covered with borated vaselin on sterile gauze, and which is held in place by two straps of zinc adhesive plaster. The grafted area and posterior drainage wound are covered with aseptic gauze soaked in 1:5000 nitrate of silver solution (to be gradually increased to 1:3000) which is useful in preventing the small, cauliflower-like granulations that so frequently spring up between the edges of the grafts, from becoming too abundant and overhanging.[8] In spite of this precautionary measure, they often appear and need clipping and cauterizing. The arm is left out of the sling after the second dressing; soon the patients are made frequently to move and to raise the arm above the head. After they are up and about, they are taught to stretch the arm with the hand resting against the wall or on anything of sufficient height to enable them, by bending their knees, to give it perfect elevation. Another exercise is to lift the arm, when flexed at the elbow, sufficiently high to form a right angle with the body and then push it horizontally backward. They are always able to dress themselves without assistance when sent home. These exercises are of greatest importance in shortening the time needed to regain normal mobility of the arm.[9]

In cases in which the grafts did not take, or in which they took partially only and in which there was a tendency to border-necrosis of the flaps, I have in recent years resorted to open-wound treatment. As long as the patients are in bed it is, of course, easy to arrange the dressing around the defect so that the sterile gauze stretched over the partially granulating grafted area does not touch the wound. When patients are up and about, however, it is very difficult. In these cases I have found a little contrivance, devised by Dr. E. Hochheimer of this city, very useful. It consists of the one-half of one of the so-called artificial busts as they are sold in our large department stores. This cup-shaped arrangement is tied over the grafted area by means of tape passed through its pierced corners; it will serve as a protection, under the patient's dress, so that open-wound treatment can be safely continued. Under this arrangement, the most sensitive grafts are often seen to continue to spread over the still open surface.

The patients are usually out of bed on the seventh or eighth day and leave the hospital or my immediate care after two weeks. According to the time required for wound healing in the individual case, cicatrization becomes perfected within from three to four weeks after operation. It is a good plan to have the patients spread some lubricant over the grafts and scar every night before retiring later in order to avoid scaling.

RESULTS OF OPERATION.

During the ten years covered by this report, I have operated for primary cancer on seventy patients, the above described method being employed in every instance. It is needless to state that the clinical diagnosis of carcinoma was invariably confirmed by microscopic examination of the specimen after the operation. As to the proportion of scirrhus and adenocarcinoma I am unable to give the exact data, although I know that there were very few of the latter. Of these seventy patients, one died in direct connection with the operation, however, not as a result of it. This was a diabetic, having 8 per cent. of sugar, who passed into coma on the third day after operation, without showing any symptoms of wound complication. I personally had strongly advised against operation, but the family, foreseeing the inevitable suffering the patient would have to go through, if the disease were left to itself, insisted on operative intervention. Another patient, 49 years of age, died shortly after her second operation. Radical operation for carcinoma of the right breast had been performed by me on July 23, 1901. She made a rapid recovery, but nine months later I was called in to operate for a metastatic tumor that had developed in the opposite breast. I again operated radically, and the patient stood the operation as well as she had stood the first. Two days later, however, she commenced vomiting blood in large quantities. Palpation revealed the presence of a well-defined nodular tumor in the gastric wall, evidently a carcinoma. The patient not having complained of stomach symptoms before the operation, I had omitted, contrary to my usual custom, to examine her abdomen. Hematemesis continued for 36 hours, and, in spite of all our efforts to relieve the condition, she died at the end of this time, primary union of the wound meanwhile having taken place. Autopsy was refused, but there can be no doubt that death was due to continuous hemorrhage from a neoplasm within the stomach.

Surely, neither of these deaths can be attributed to the operation as such; besides, the operation in the second case was done for a metastatic tumor, not for primary carcinoma.

Another patient on whom I did the radical operation on both breasts, the second operation twenty-one months after the first, is alive and well to-day. Hence, it appears that in a series of seventy-two operations on seventy patients with carcinoma my mortality has been *nil*; or, counting the diabetic patient who died as a result of coma, 1.4 per cent.[10]

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[8] This kind of after-treatment of the grafted area was proposed a few years ago by Dr. O. Hensel of this city, former house surgeon of the German Hospital.

[9] It is advisable not to commence these exercises before the tenth to twelfth day. If begun too soon the border of the lower flaps may be torn off the outer border of the grafted area, an accident which would retard convalescence.

[10] Besides these 72 operations, done for carcinoma, I have had two patients, one with an encapsulated melano-sarcoma, the other with a large cysto-sarcoma, on whom I also used this radical procedure. Both recovered.

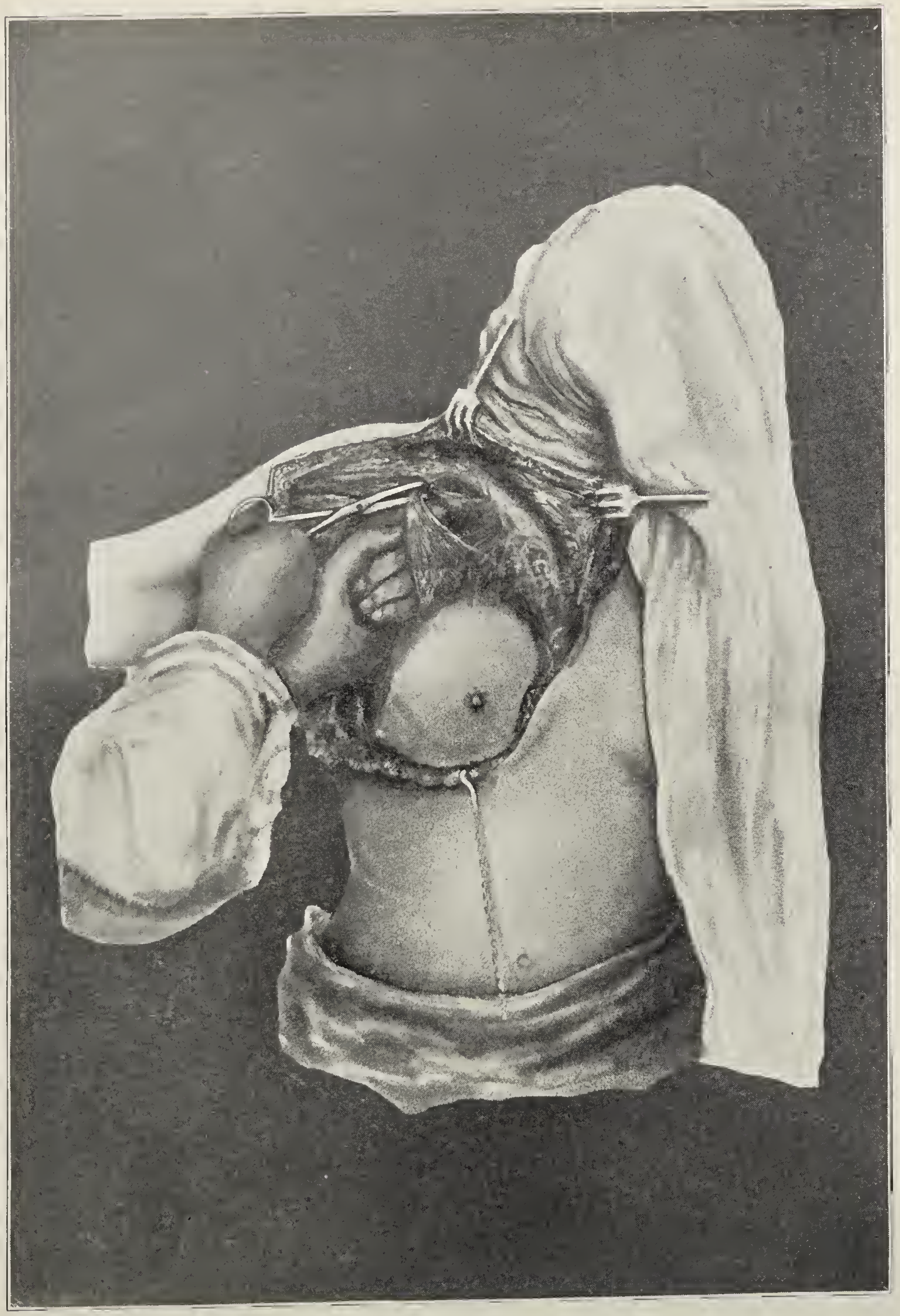

Fig. 6.—Finger under tendon of pectoralis minor muscle. Above, cut surface of clavicular portion of pectoralis major parallel to clavicle is visible. (In the living, the belly of the pectoralis major is not so thoroughly detached from that of the pectoralis minor. It is done here to show the latter's tendon.)

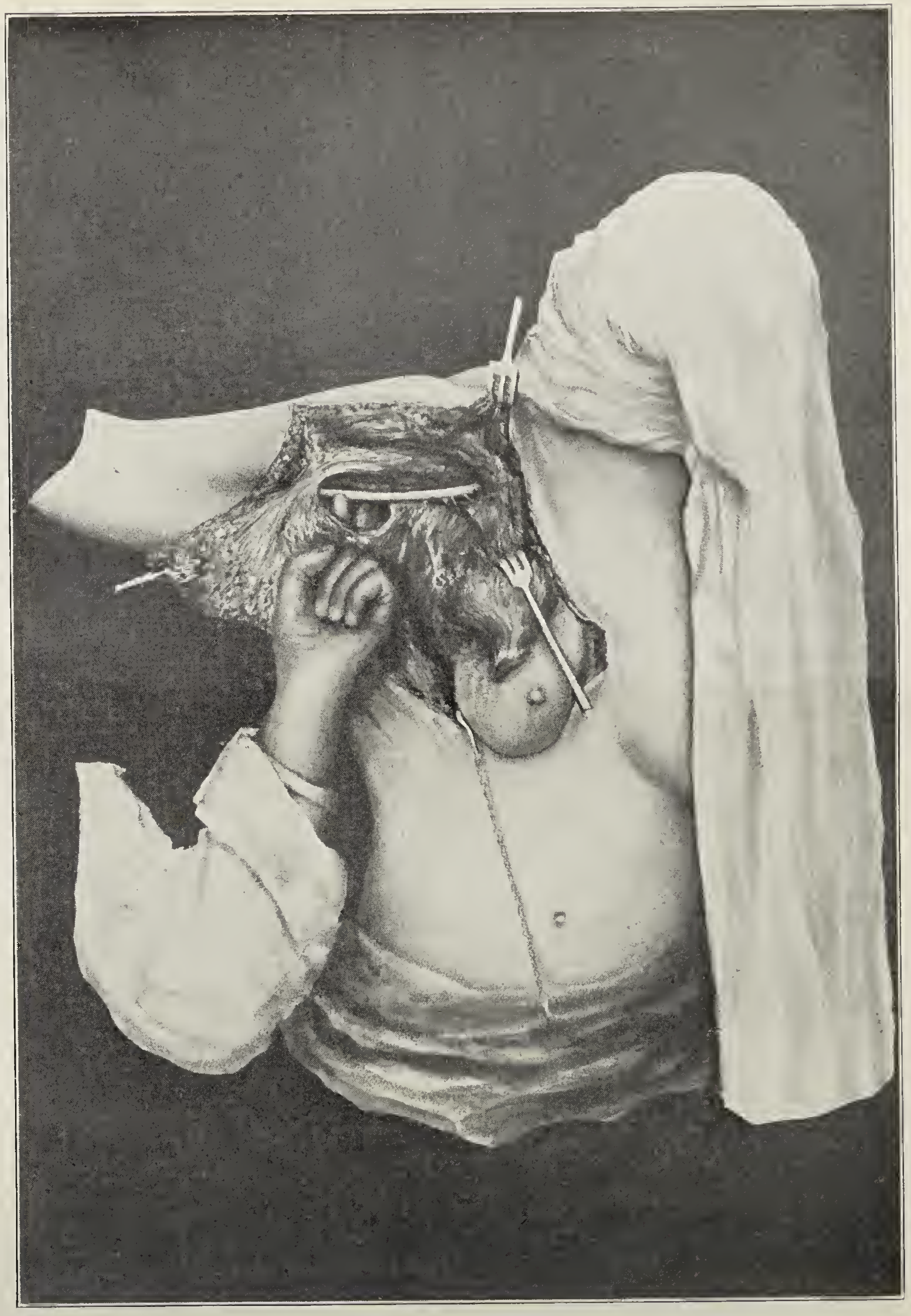

Fig. 7.—Subclavian and axillary veins fully exposed. So far, glands and fat tissue not removed; smaller vessels still in connection with main trunks. Finger under fat toward sulcus bicipitalis, its nail resting on axillary vein.

CHARACTERISTICS OF THE OPERATION.

As will be seen from the description of the technic, in my operation, the surgeon works his way from the axilla downward and inward, i. e., from the insertion of the muscles to their origin, instead of in the opposite direction, as followed by Halsted. This enables the operator, after the formation of the two flaps, primarily to expose and to secure the feeding blood vessels close to their trunk, instead of first encountering their smaller branches, and then re-encountering their larger branches, as is inevitable when working from below and inward toward the axillary cavity.

From an anatomic point of view, therefore, I think the method must be conceded to be superior to those in which the operator works his way in the opposite direction. Besides, it is thorough, simple, safe and bloodless, a typical procedure. The technic does not permit of further improvement, except the future should show it to be a good plan to follow up the chain of glands into the supraclavicular space in every instance, with or without temporary division of the clavicle at the place where the subclavian vein dips underneath it.

I am sure the method will appeal to any one who has seen or done it.[11]

There is no shock. During my ten years' experience, I have found it necessary but once to give an intravenous saline infusion after the operation. This was in a much reduced, elderly patient, with far-advanced glandular involvement around the veins, in whom a supraclavicular operation had to be added at once. In no other case was intravenous infusion or hypodermoclysis required; a rectal saline with whisky and strychnin, usually given immediately after operation, always sufficed for stimulation in weak patients.

FUNCTIONAL RESULTS.

Inasmuch as in this operation the tendon of the pectoralis major muscle is primarily divided close to the humerus, the entire belly of the muscle, i. e., the pectoral plus the clavicular portion has to be excised as a matter of course. The latter having a blood supply of its own and special lymphatics, its preservation as practiced in Halsted's operation would probably have no bearing on local recurrence of the disease. The removal of the clavicular portion, however, does not mean any serious addition, and the clean and thorough removal of the glands and fat alongside of the axillary and subclavian veins is thereby materially simplified.

Time has shown that the *total* removal of the pectoralis major muscle does not mean mutilation, as it was thought by some colleagues ten years ago, when I first brought out this method. On the contrary, my patients have always been much pleased with the free and perfect use of the arm they have obtained. Ability to assume the posture of the Statue of Liberty is the rule, not the exception (Fig. 15). Besides, the arm remains strong and useful. Quite a number of poorer patients scrub and wash without any discomfort.

In a few instances, in which an exceptionally large portion of skin had to be removed with the tumor, patients complained of a feeling of tightness during the first few months. This feeling, however, gradually disappears as the grafted area becomes mobile, generally after from three to six months.

The splendid functional result, i. e., the perfect mobility of the arm, which invariably follows this method, I think, speaks well for the operation. The gymnastic exercises employed as an aid in this direction have been previously described.

As a rule, no edema of the arm is observed; later, in some cases, a slight puffiness on the inner side of the elbow becomes evident, but a swelling of the entire extremity is rarely noted. Many years of careful observation have taught me that if such general edema of the arm sets in, it is not necessarily a sign that deep infected supraclavicular glands are pressing on the subclavian vein. I rather think that the unavoidable tying or cutting of large lymphatic vessels, simultaneously with severing the blood vessels near their trunks, and the broad and deep cicatrix after far-reaching preparation around the vein, often produce sufficient constriction to retard the lymphatic as well as venous current. In some cases, local venous thrombosis and later permanent occlusion of collateral veins are, perhaps, to be blamed. Massage of the arm usually has little effect here.

Flannel or elastic bandages compressing the arm from the wrist up to the shoulder have to be used in pronounced cases which, as stated, fortunately are rare.

SPECIAL OBSERVATIONS.

Under this heading, I would mention a few of the numerous interesting observations I have made in the course of years.

I fully agree with those who claim that cancerous infiltration of the supraclavicular glands means sure death. I have not a single case to record in which the patient was saved by operation after these glands had become involved. Very extensive affection of the glands above the collar bone I, therefore, consider an indication not to urge the operation. If, however, the glands are but moderately infiltrated at the time of the first operation, or if they become evident some time thereafter, they should be removed forthwith, for I think it the surgeon's duty in such cases to remove whatever can be reached with the knife so long as metastases do not forbid an operation.

In regard to the desirability of cleaning out the supraclavicular space at the time of primary operation *in every case*, without clinical evidence of the presence of cancerous glands in this region, my experience does not support the advisability of such procedure. In none of my ten patients who have remained well from four to ten years after operation were the supraclavicular glands removed. For the present, therefore, I consider it best not to invade this region, unless glands are actually palpable at the time of operation, in which case, of course, they have to be removed, and prolonged *x*-ray treatment should be added as a possible preventive against recurrence.

Reviewing my 70 cases in this connection, it appears that in 3 patients supraclavicular involvement was evident at the time of primary operation. The glands were removed with the breast. One of these, a diabetic patient (Case 7), 65 years of age, died, 2 days later, of coma. The other 2 also died within 9 months after operation.

Six of the 70 patients developed infiltration of the supraclavicular glands from 6 months to 3 years after the primary operation (Cases 3, 16, 29, 34, 53, 61);[12] none of the patients had presented symptoms of their

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[11] I was much interested to read that Dr. J. Collins Warren of Boston has also adopted this method of operation during the past year and finds it one that he can recommend as both safe and thorough. Annals of Surgery, December, 1904.

[12] These and following numbers refer to the table attached to this article.

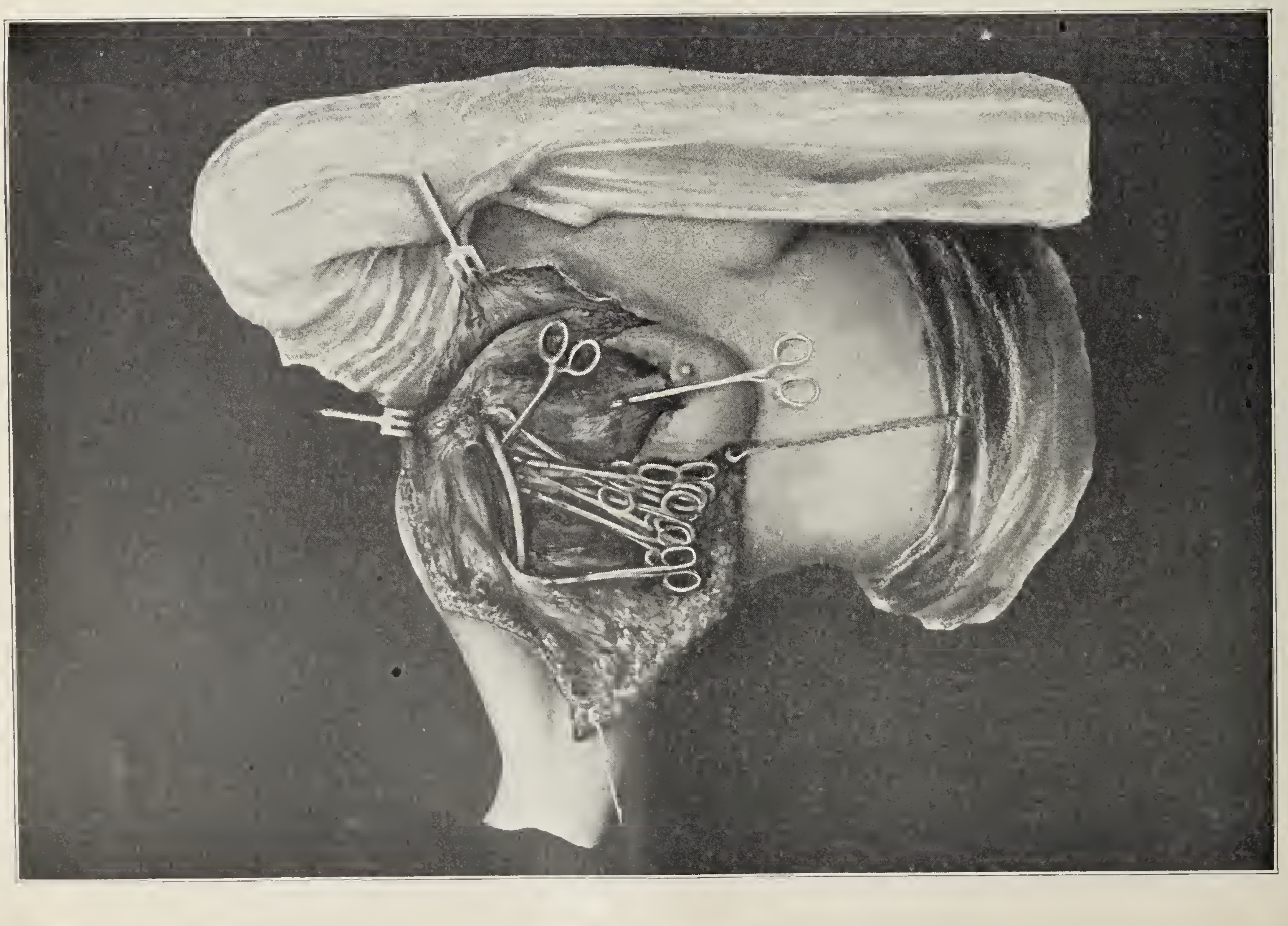

Fig. 8.—Axillary fat and glands stripped from lower surface of vein-trunks. Muscles turned inward and downward; artery forceps in place, inasmuch as ligation is done at completion of operation.

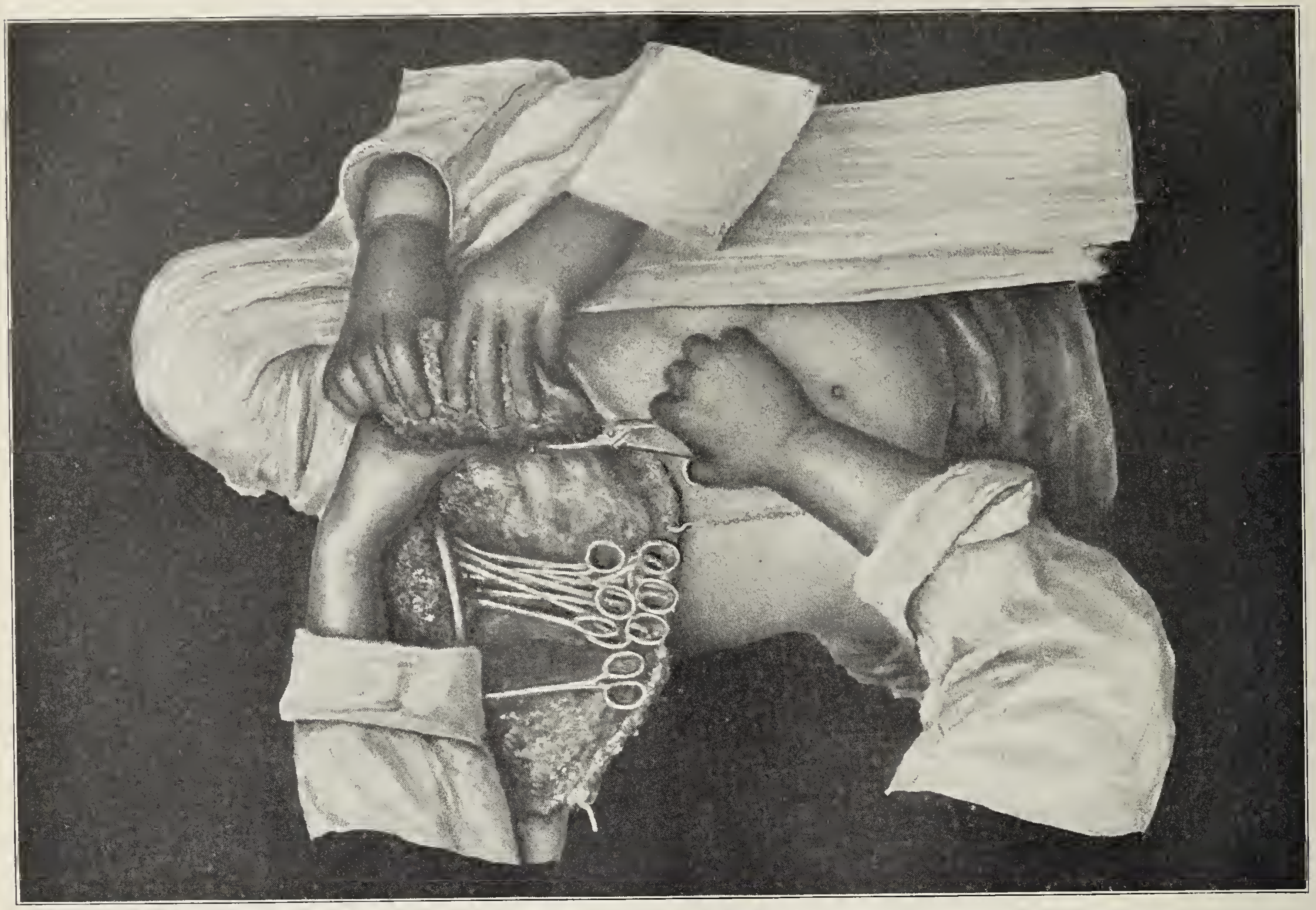

Fig. 9.—Pedicle of mass over sternum, ready to be cut off.

presence at the time of the operation. Five of these were operated on, but every one died from 6 to 9 months after this second operation.

In the new book of Poirier, Cunéo and Delamere, entitled "The Lymphatics," translated by C. H. Leaf, a very excellent account of the lymphatic distribution of the skin and the mammary circulation with reference to the lymphatic glandular drainage is given (p. 215, etc.)

In agreement with what would be suggested by the lymphatic distribution therein described, one would have to expect involvement of the supraclavicular glands only in cases in which the growth is found in the upper two quadrants of the breast, and particularly when it involves the skin and therewith the subcutaneous tissue over this region.

I shall pay strict attention to this important point in the future and excise the supraclavicular glands simultaneously with the mammary carcinoma whenever there exists cutaneous involvement of the upper portion of the breast.

It is interesting to note how sometimes one or more enlarged glands in the neck become seemingly stationary.

I have under observation one patient, operated on two years ago, in whom two small, hard, movable glands, situated in the middle of the posterior border of the respective sternocleido muscle, have remained unchanged in size and appearance for almost a year, which would suggest either that the *x*-ray treatment has brought about this cessation in growth, or that they were not malignant at all, but simply swollen by some irritative process. So far I could not find the indication for their removal.

As regards frequency of recurrence in the opposite breast, my record shows but 4 such cases, or 5.71 per cent. In 3 of these it occurred in conjunction with internal metastases; in the fourth the disease had evidently reached the breast directly by way of the lymphatics (25). This patient is still alive and well, 4 years and 9 months after the second operation.

In one patient with a very painful, recurrent carcinoma of the axillary cavity, treated in 1896, when I still largely used methyl violet in the treatment of inoperable cases,[13] injections with a solution of fuchsin produced great subjective improvement. Within twelve hours after one of the injections, an eruption of miliary nodules, closely resembling acute eczema, appeared and spread over the entire operating field, including the grafted area. At first I looked on the trouble as an acute eczema, but soon found that the small elevations increased in size and each developed into a rapidly growing, disseminated, carcinomatous nodule. I am at a loss to explain this phenomenon, except possibly on basis of the parasitic theory of cancer, assuming that a focus perforated into the artery supplying this part of the body, carrying infectious material into the remote capillary branches as emboli. The experience certainly seems worth recording.

Another case worth noting is that of a patient referred to me for radical operation for a rapidly growing cancer of the breast resembling cystic sarcoma, but being hard and raised. Three sisters, every one married and the mother of children, had died of cancer of the breast, in various parts of the country; there was no hereditary history. The patient's anxious look made it seem cruel to refuse operation, and so I proceeded against my better judgment; of course, informing the husband of the hopelessness of the situation.

In the second week of the after-treatment total thrombosis of the left femoral vein set in, which forced the patient to stay in a horizontal position for eight weeks. Nine months later she died of local recurrence, involving pleura and lungs. Thrombosis of the femoral vein, usually the left, is a rare sequel of amputation of the breast. It is now and then seen following major operations, especially abdominal ones.

In still another case, in which I removed a recurrent cancer of the axillary cavity, the tumor had grown into the wall of the axillary artery. Suture of the resulting defect of the arterial wall being impossible, division of the vessel between two ligatures stopped hemorrhage.[14] The patient retained perfect use of the arm until death, fifteen months later. In this case I had, two years previously, removed a tumor of a supernumerary axillary breast which, on microscopic examination, proved to be carcinoma. The outcome seems to show that radical extirpation of the whole respective breast ought to be added at once in these rare cases.

In a few instances in which the tumor seemed to belong to the benign class, local extirpation was done first. In one of these, a young girl of 19, with a deep-seated, movable tumor, the latter was found to be a melanotic sarcoma. Radical operation was done. The patient was well eight months later, when she returned to Europe. This case, while included in the number of operations done by me, is, of course, eliminated from the statistics.

In another case, an unmarried woman aged 46, the disease presented the characteristic picture of diffuse fibroma and partial extirpation was done. Microscopic examination revealed in one place, beginning unquestionably malignant disease. Radical operation was promptly added.

In one patient (aged 32) I removed a fibroadenoma (local extirpation). She was entirely well for ten years, when the radical extirpation of the same breast for carcinoma became necessary. Eight weeks after the latter operation, exploratory laparotomy revealed cancer of both ovaries with intra-abdominal metastases.

I have found that quite a few patients complain of neuralgic pains in the arm and scapula for some time after the operation, in rare instances also in the supraclavicular region. This is evidently due to traumatic neuritis and can often be overcome by electrical treatment and by the use of the *x*-rays. One patient, in whom scapular pains persisted (two years) after operation on the right breast is afflicted with gallstones.

It has surprised me to note how often the spinal column was the seat of metastases in my recurrent cases. This at first is frequently mistaken by physicians as well as patients, for chronic rheumatism. It is difficult, with our present knowledge of the subject, to explain this phenomenon. Some authors consider minute effusions of blood into the body of the vertebræ

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[13] Annals of Surgery, November, 1893.

[14] During the entire ten years, from September, 1894, to September, 1904, I did not come across a single case in which I had to resect the subclavian or axillary vein; while in course of the last winter I had occasion to do so three times. In every instance the subclavian plus axillary vein was removed together with the mass, from a point just below the entrance of the cephalic to a place corresponding to about the beginning of the bicipital sulcus. This procedure wonderfully facilitated the otherwise particular difficult preparation. No disturbing sequelæ, e. g., edema, embolic processes, etc., were observed. Of course, great care was taken not to tamper with the cephalic vein or with the proximal part of the subclavian beyond the entrance of the former.

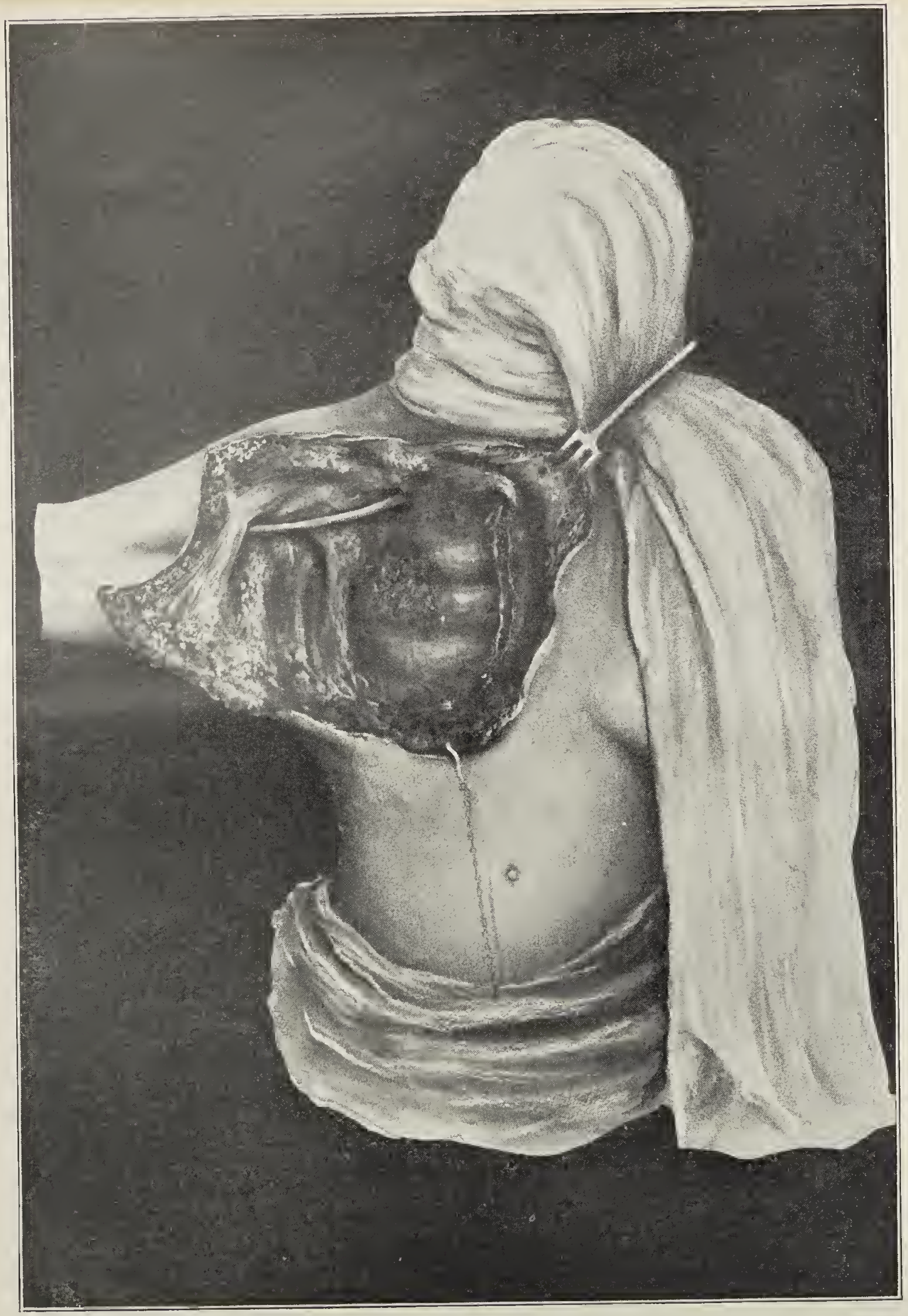

Fig. 10.—Operative field, after removal of the mass. Stump ofpectoralis minor muscle is visible.

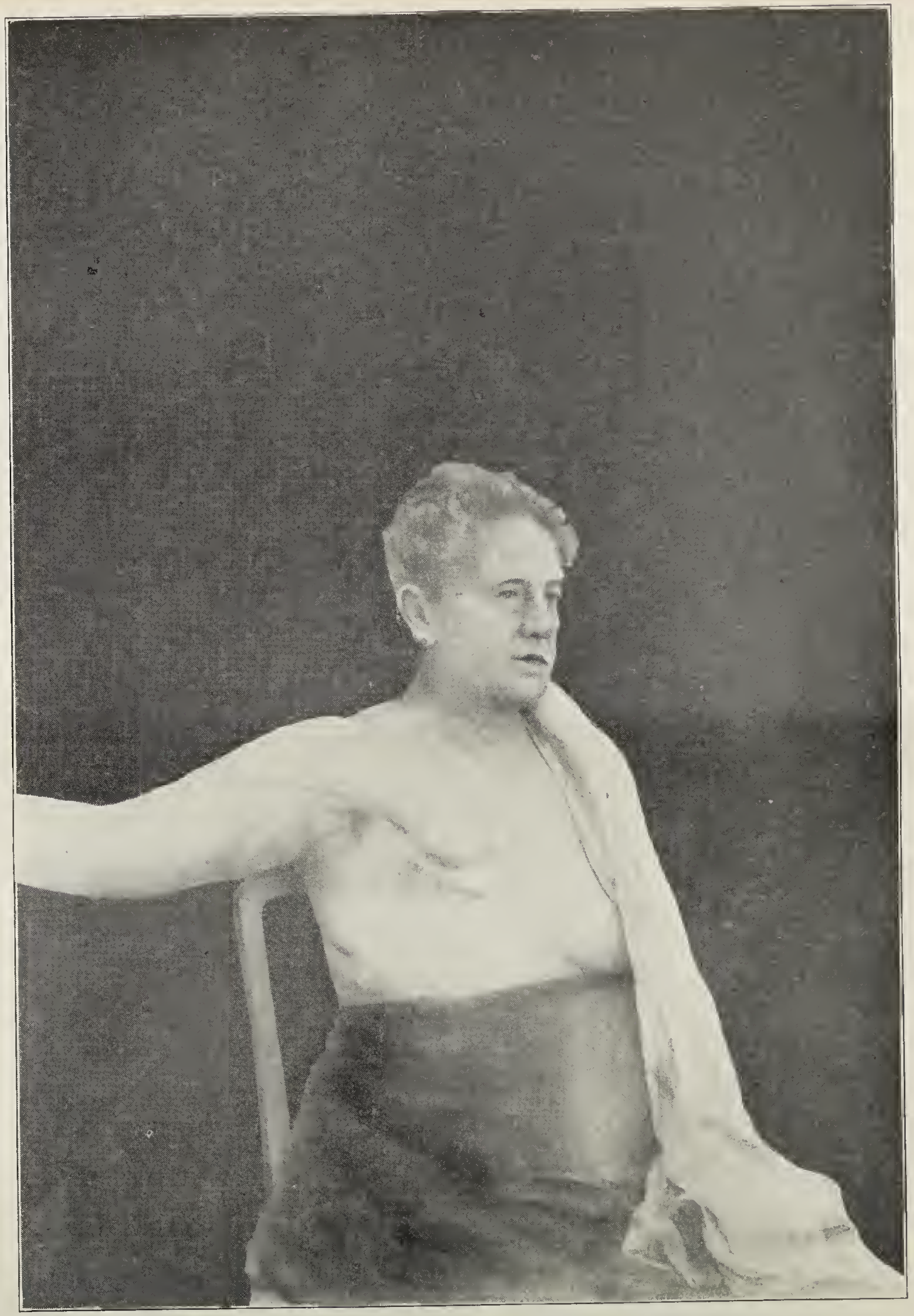

Fig. 11.—Showing reformation of axilla. See case 30 of table, operated on July 30, 1899. The irregularity of the chest wall as it appears in the illustration above the median extremity of the scar is the result of a rather protracted suppurative process over two ribs near the sternum. This was caused by the perichondrium and part of the periosteum having been stripped off the respective costal cartilages and ribs by the first assistant, who had pulled on the mass toward the completion of the operation instead of merely supporting it. Of course, necrosis followed.

as they do occur in our daily life, consecutive to slight traumatisms, a *locus minoris resistentia,* and at the same time a favorable place for the development of metastases.

While it has been my experience, also, that a somewhat retracted nipple, raised above a line drawn horizontally from the opposite nipple constitutes the pathognomonic symptom of malignant involvement in the vast majority of cases (scirrhus), the absence of this sign should not influence the surgeon against the diagnosis of malignant disease, as the tumor may be an adenocarcinoma. At a time when I attributed rather too much weight to this symptom, a clinically doubtful case came under my care. The tumor was comparatively small, freely movable and the skin was not adherent; the nipple was not raised, but on the contrary, rather lower than on the other side, and not retracted. I contented myself with simple extirpation of the breast and axillary glands. Microscopic examination proved the tumor to be an adenocarcinoma. Prompt secondary radical operation was refused. This patient soon developed a rapidly growing local recurrence, evidently springing from the fascia of the pectoralis major muscle.

My cases show clearly that wherever local recurrence has been observed, the grafted area was of small size; in other words, local recurrence has appeared when skin was saved when making the first cutaneous incisions. I have, therefore, made it a rule during the last few years to have the skin incision completely encircle the *very base* of the breast, a step which I consider most essential.

As regards the time limit at which a patient may be considered cured, I would mention the following case which again shows the fallacy of accepting a three or five years' freedom from recurrence as proof of a cure:

This patient (17) was operated on in February, 1897 and while she considers herself well to-day, re-examination in March, 1905, showed a regional recurrence in the shape of a few small, disseminated nodules below and at the inner border of the area grafted on. The patient states she first noticed these a few weeks ago, but attached no importance to them.

Volkman's view that "after two years usually, and after three years almost without exception, one may feel sure of the result" certainly can no longer be accepted as correct.

A very interesting article on the question of what constitutes a cure after operation for cancer, has recently been brought out by Jordan of Heidelberg in an article entitled "Late Recurrences of Carcinoma."[15]

In this he proves that the so-called permanent cures are frequently merely a temporary cure of longer duration. It is true that the greatest number of recurrences occur in the first or second year after extirpation of the growth, and this is the reason that prompted surgeons to the establishment of the "three-year limit" which gynecologists have of late extended to five years. Jordan states: "It seems the great majority of cancerous tumors develop rapidly and, hence, are followed rapidly by recurrence, usually within the first or second year after operation. However, a small percentage grow slowly and in these the recurrence, likewise, appears a longer time after operation, from 4 to 6 to 8, 12 or even 20 years later."

He adds that "in view of such experience it may well seem a question as to whether we are ever justified in pronouncing a patient cured after operation for cancer."

In this latter statement I do not agree with Jordan. I believe in a cure of cancer, provided operation be done at an early stage of the disease.

STATISTICS.

Statistics are not always fair. If the originator of a method of operation selects his cases, the statistical results will of course commend the procedure. If, on the other hand, he employs the method regardless of statistics, the results may be misleading. In cancer of the breast, for example, the virulence of the disease, or the invisible advance made by the neoplasm into the surrounding parts or into remote parts of the body, often mar the result of the most excellent operative procedure.

My cases have been operated on as they came along unless they were absolutely inoperable. This has been my course, because to refuse an operation, would be equal to passing final judgment, or prematurely signing the patient's death certificate. The only case, that of a patient with a rather far advanced scirrhus of several years' growth, in which I advised postponement of operation, on account of good general condition and an intended trip South, called in another surgeon, who promptly amputated the breast. It stands to reason that by operating almost indiscriminately, my statistics have not been improved.

From September 1894, to September 1904, I have done this operation 74 times in 72 patients. One was performed in order to be as radical as possible after a small, movable, encapsulated tumor had been removed, which, on microscopic examination, proved to be a melanosarcoma. Another patient also operated on radically, had a very large cystosarcoma of the breast. Both of these cases will, of course, not be counted in the statistics, which relate to carcinoma only. Thus 70 cases with 72 operations remain to be considered.

Of these, 69 patients were female, and 1 male; the youngest female being 28 years, the oldest 72; the man was 44 years old. Classified into decades, I have had:

1 patient from 20 to 30 years of age.
13 patients from 30 to 40 years of age.
32 patients from 30 to 40 years of age.
14 patients from 40 to 50 years of age.
7 patients from 50 to 60 years of age.
2 patients from 60 to 70 years of age.
1 patient from 70 to 80 years of age.
—
70 cases.

Forty-four cases were private patients; 26 patients were operated on in the wards. Of the former, I have careful records as to their subsequent history; of the latter, three could not be located at the time of my last investigation, from January to March of this year.

In a great city like New York, with its ever-shifting population, it is not an easy task to keep track of one's patients operated on at the wards of the various hospitals. I owe it to the untiring efforts of Dr. Martin Rehling, of this city, that I am in a position to present correct statistics regarding all but three of my ward cases. I gratefully acknowledge this, and thank him once more at this place, for the kind assistance rendered.

Deducting the three patients who could not be traced, 67 remain for consideration here. Thirty of these were operated on from 5 to 10 years ago, i. e., between September 1894 and September 1899, and of this num-

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[15] Deuts. med. Wochft., 1904, June 16, p. 912.

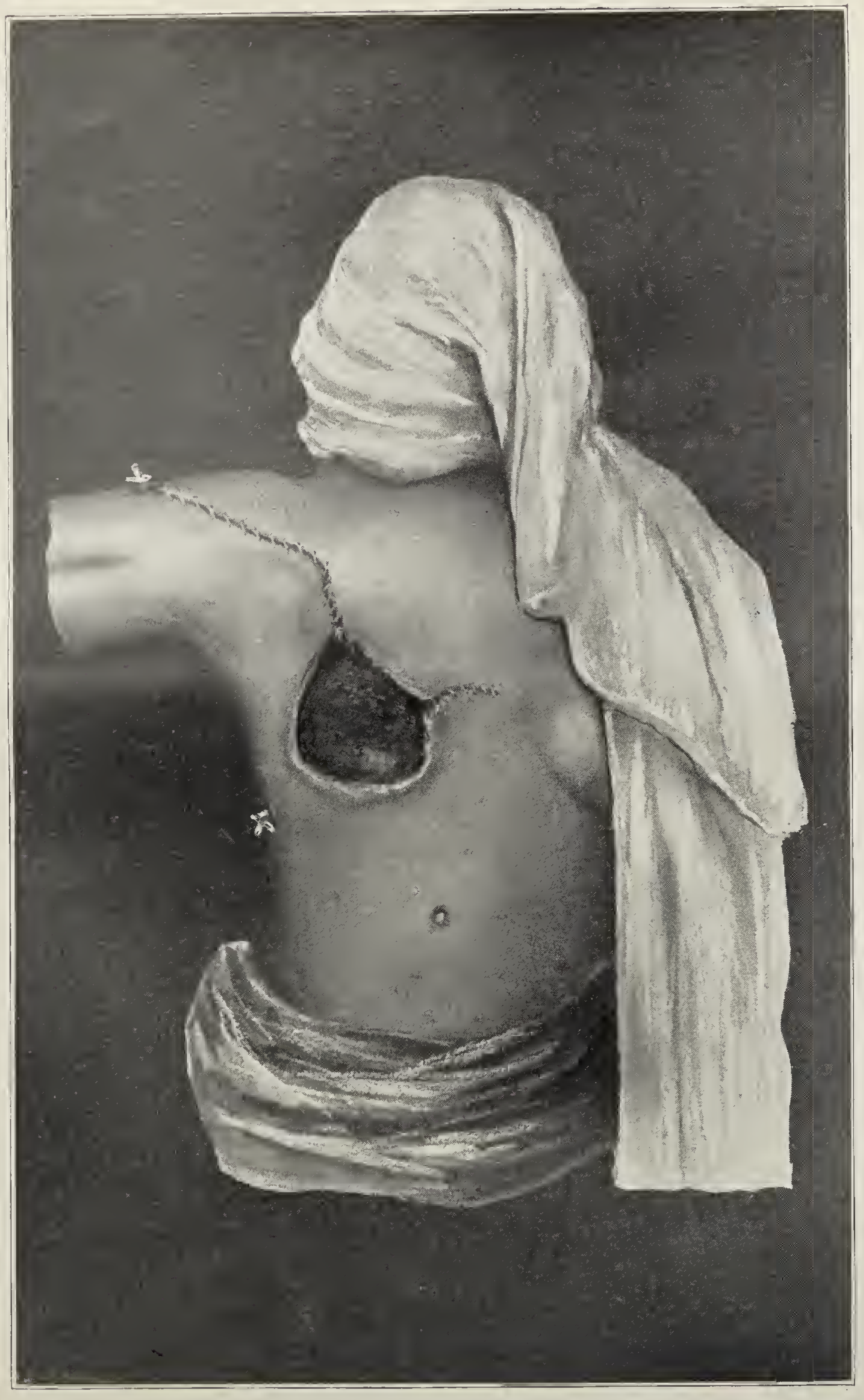

Fig 12.—Drainage tubes inserted, skin sutured. Within the resulting defect which is not yet reduced, the stump of the belly of the pectoralis minor is visible.

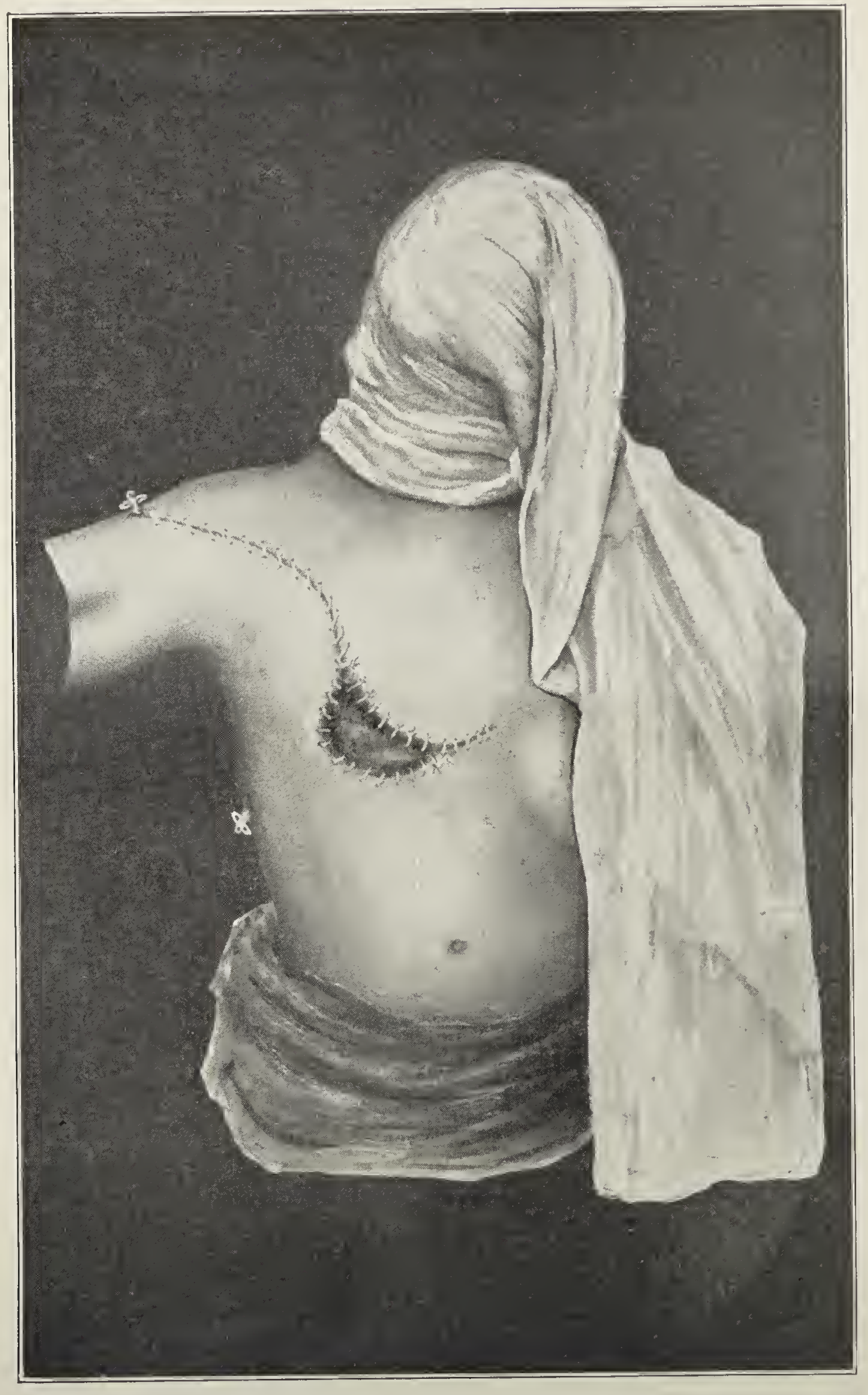

Fig. 13.—Showing the difference in size of the defect after its lower border has been stitched to the stump of the pectoralis minor, by means of continuous catgut suture, and its upper one fastened to the chest wall with a few interrupted stitches.

TABLE OF RADICAL OPERATIONS FOR CARCINOMA OF THE BREAST.

No.	Date of Operation.	Name and Age. Married or Single.	Result.[16]		Remarks.
			Alive, Present Condition.	Died. Cause of Death.	
1	1894, September 19	H. O., 39, m.	Alive and well		
2	1895, March	I. S., 48, s.	Alive and well		
3	October	L. H., 47, s.	....	Died Oct. 1896; regional recurrence (e) disseminated cancer *en cuirasse.*	Extirpation of supraclavicular glands, March 13, 1896; resection of cancer of rib. April 2, disseminated cancer appeared suddenly after parenchymatous injection of fuchsin solution.
4	November	L. D., 55, m.	....	Died July 2, 1902; endocarditis according to postmortem (coroner's case.)	
5	December	A. H., 46, m.	....	Died March, 1896; intestinal metastases, and diabetes.	
6	1896, February	J. W., 60, m.	Alive and well		
7	March	C. R., 65, m.	....	Died 2 days after operation; diabetic coma.	Radical operation plus extirpation of supraclavicular glands.
8	May	P. G., 47, m.	....	Died December, 1898; local recurrence; later metastases.	January 26, 1894, excision of cancer of supernumerary axillary breast, same side; May, 1896, radical operation of breast; Oct., 1897, axillary recurrence; extirpation; ligation of axillary artery.
9	May	A. L., 59, m.	....	Died April, 1897; internal metastases.	
10	May	M. M., 40, s.	Not traced		
11	June	M. C., 69, m.	....	Died Feb. 1900; internal metastases.	
12	July	R. S., 46, m.	....	Died Oct. 1897; internal metastases.	
	September	G. K., 18, s.	....	....	Melanosarcoma; well 9 months later; left for Europe.[17]
13	October	E. A., 48, m.	....	Died Dec. 1897; internal metastases.	
14	October	B. J., 57, m.	....	Died Aug. 1900; internal metastases.	
15	December	I. H., 49, m.	....	Died March, 1899; internal metastases.	
16	1897, January	I. E., 72, m.	....	Died Nov. 1898; internal metastases.	July, 1898, extirpation of supraclavicular glands.
17	February	R. R., 45, m.	Alive	....	Regional recurrence within last three months.
18	September	E. W., 36, m.	....	Died July, 1900; internal metastases.	
19	October	W. F., 38, m.	Alive and well		
20	1898, June	S. S., 44, m.	....	Died Jan. 1899; internal metastases.	
21	December	M. K., 43, m.	Alive and well		
22	1899, January	M. R., 46, m.	Not traced		
23	February	A. S., 37, m.	....	Died Jan. 1900; internal metastases.	Resection of rib at time of operation on account of involvement; temporary pneumothorax.
24	March	J. C., 60, m.	....	Died Nov. 1899; internal metastases.	
25	March	L. L., 44, m.	Alive and well	....	March 24, 1899, radical operation for cancer of right breast; Dec. 7, 1900, radical operation for cancer of left breast. (See unnumbered case following 41).
26	May	S. E., 53, m.	....	Died April, 1901; internal metastases.	
27	May	V. B., 64, m.	....	Died Jan. 1901: internal metastases.	
28	May	F. S., 39, m.	Not traced		
29	June	M. F., 46, m.	....	Died Feb. 1903; internal metastases.	July, 1902, extirpation of supraclavicular glands.
30	July	J. T. S., 56, m.	Alive and well		
31	October	R. G., 45, m.	....	Died July, 1904, internal metastases.	Four weeks before radical operation excision of a portion of tumor for diagnostic purposes, by another surgeon.
2	December	C. R., 36, m.	....	Died Oct. 1900; local recurrence and metastasis.	Far advanced case; father, mother and three sisters died of cancer.
33	December	A. B., 38, m.	....	Died March, 1901; regional recurrence.	
34	1900, February	M. T., 36, m.	....	Died Dec. 1902; internal metastases.	May, 1900, extirpation of supraclavicular glands.
35	March	A. G., 61, m.	Alive and well		
	April	K. H., 47, m.	....	....	Cystosarcoma.
36	May	M. S., 54, m.	...	Died June, 1901: internal metastases.	Diabetis for many years.
37	June	A. L., 70, m.	Alive and well		
38	July	R. G., 59, m.	....	Died Feb. 1901; regional recurrence.	Far advanced case.
39	October	B. E., 43, m.	Alive and well		
40	October	M. T., 57, m.	Alive	....	Regional recurrence and metastases found on examination March, 1905, said to have appeared within last three months.
41	October	J. H., 43, m.	....	Died Nov. 1901; internal metastases.	Two years previous, fibroadenoma diagnosticated, advice to remain under strict observation not heeded; re-examination in October 1901, pronounced carcinoma.
42	December	L. L., 45, m.	Alive and well, Con'f. No. 25	....	Extirpation of left breast now; extirpation of right breast preceding year, March 1899.
	1901, July	H. S., 49, m.	....	Died April, 1902; hematemesis from cancer of stomach.	Death 2 days after radical operation for cancer of second breast; done 9 mos. later. (See unnumbered case following 47). First amputated 9 months previously, July 1901.
43	November	M. N., 40, m.	....	Died June, 1902, internal metastases.	Nine months previously extirpation of breast by another surgeon, without removing glands; soon after, the latter appear simultaneously in axilla and above clavicle. They are extirpated together with the pectoralis muscles.
44	December	D. M., 59, m.	....	Died Nov. 1902; local recurrence and internal metastases.	Far advanced case; patient weighed 380 lbs.
45	December	A. L., 58, m.	Alive and well		
46	December	P. R., 34, m.	....	Died April, 1903; internal metastases.	Four married sisters in various parts of the country, had died of cancer of the breast.
47	1902, April	R. H., 54, m.	....	Died Feb. 1903; regional recurrence.	Radical operation plus extirpation of supraclavicular glands; far advanced case.
	April	H. S., 50, m.	....	Died two days after operation on second breast, of hematemesis from cancer of stomach.	Nine months before operation for cancer of other breast. (See case 42).
48	July	S. B., 42, m.	Alive and well		
49	October	S. L., 31, m.	....	Died Jan. 1904; internal metastases.	
50	October	E. V., 42, m.	Alive and well		
51	November	J. F., 35, m.	Alive	....	Two suspicious glands posterior to sternocleido muscle, stationary for last eighteen months.
52	November	M. E., 64, m.	Alive and well	Died Dec. 1903; internal metastases.	
53	November	L. C., 47, m.	....	Died June, 1903, internal metastases.	Removal of supraclavicular glands December, 1902.
54	1903, January	A. L., 42, m.	....		Ten years before, in 1893, extirpation of adenofibroma of same breast; 10 years later developed cancer on same side; Jan. 1903, radical operation; April 1903, laparotomy for double ovarian carcinoma; inoperable.
55	April	B. S., 45, m.	Alive and well		
56	June	F. M., 43, m.	Alive and well		
57	June	T. B., 38, m.	....	Died March, 1904; local recurrence and internal metastases.	Sister of patient No. 46; far advanced case: rapidly growing tumor of enormous size; post-operative phlebitis of left femoral vein.
58	July	B. W., 58, m.	Alive and well	....	Many small infiltrated glands removed from around axillary and subclavian veins; prolonged x-ray treatment.
59	July	W. H., 45, m, male.	Alive and well		
60	August	P. G., 49, m.	Alive and well		
61	October	J. S., 58, m.	Alive	....	March 1905, infiltration of supraclavicular glands found disease far advanced at time of operation.

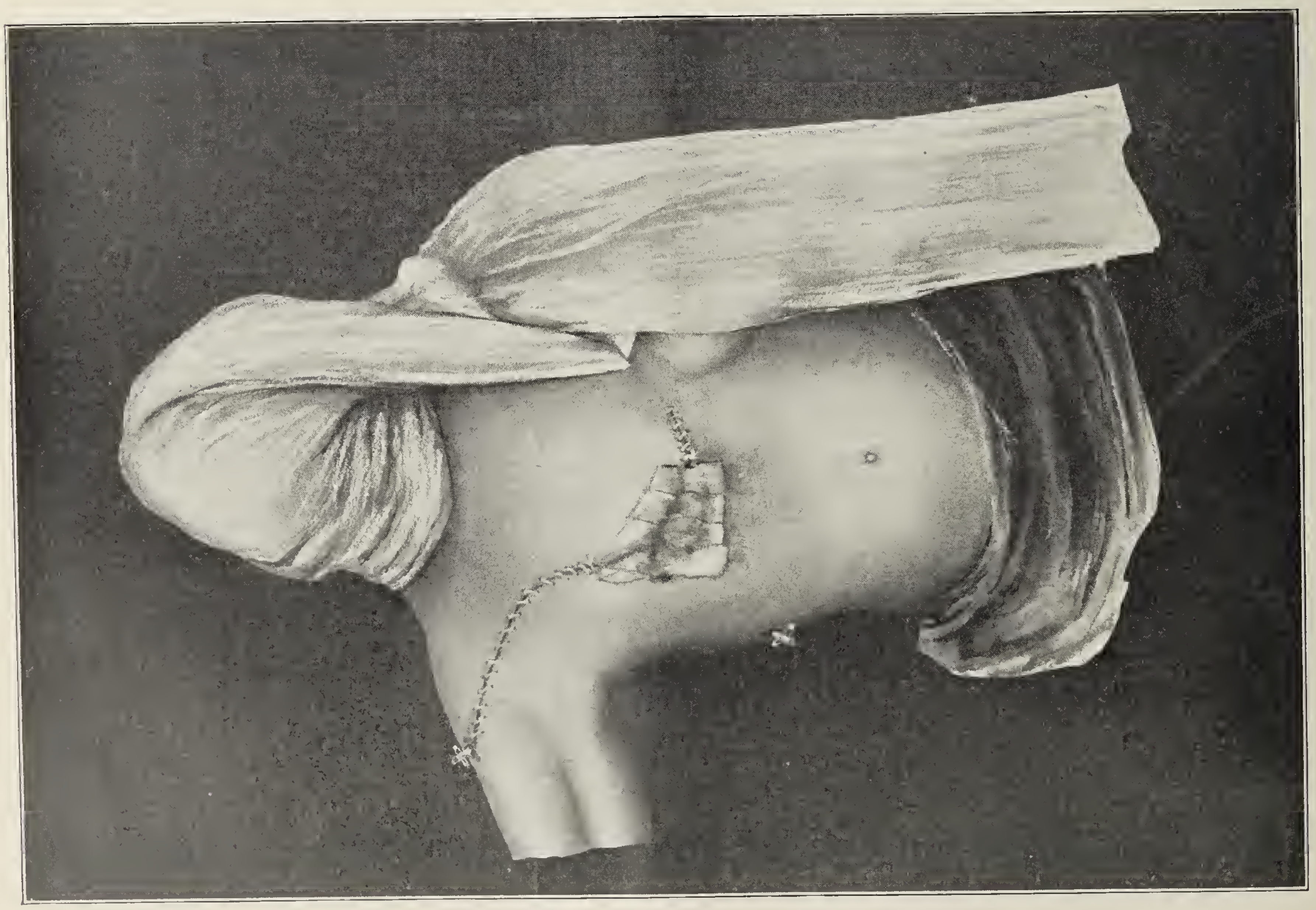

Fig. 14.—Operation completed with skin grafts in place, the latter overlapping defect borders for a short distance.

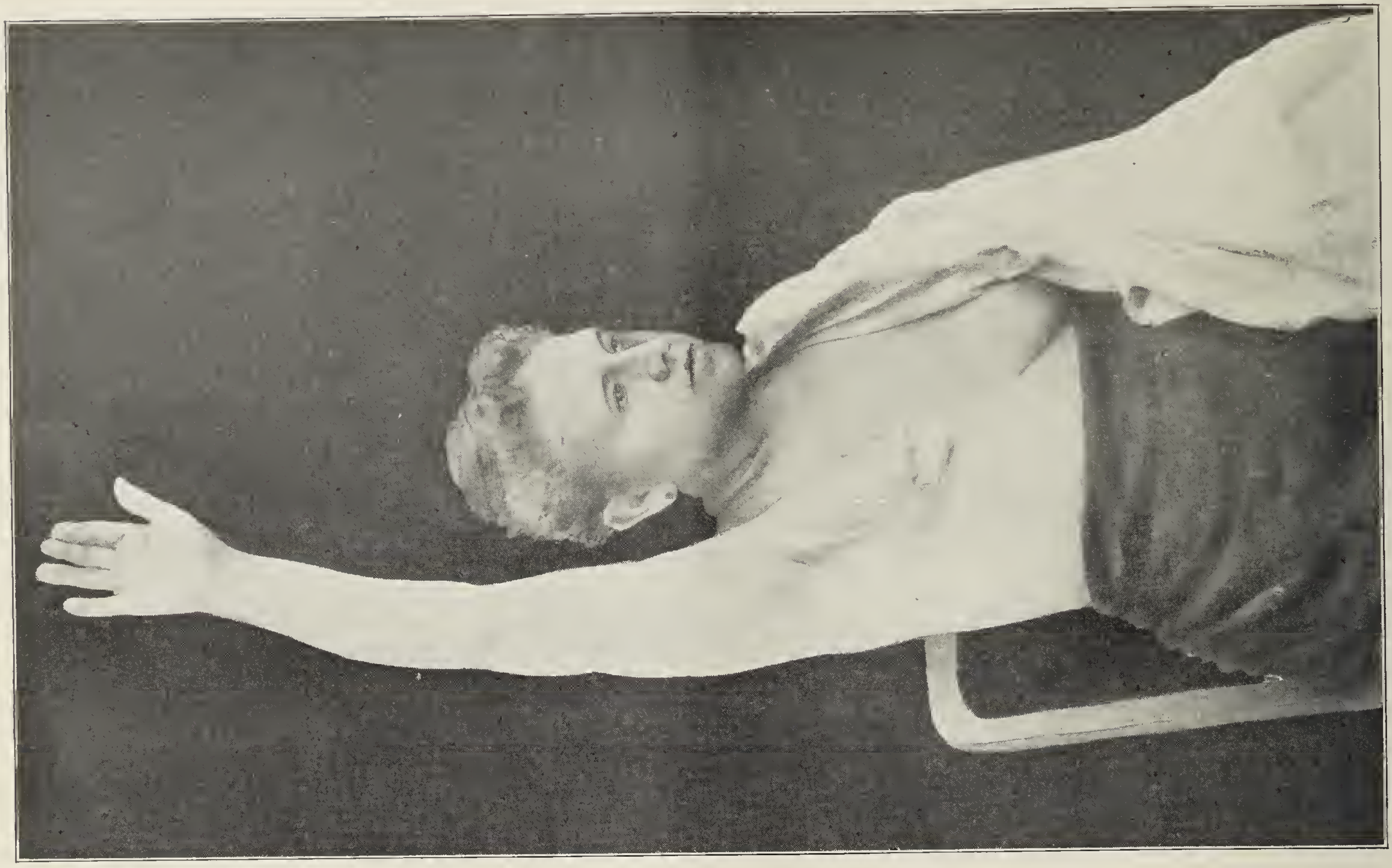

Fig. 15.—Showing posture of Statue of Liberty.

TABLE OF RADICAL OPERATIONS FOR CARCINOMA OF THE BREAST. (Continued.)

No.	Date of Operation.	Name and age. Married or Single.	Result.[16]		Remarks.
			Alive, Present Condition.	Died. Cause of Death.	
62	December. . . .	M. A. L., 54, s.	. . . .	Died Jan. 1905; internal metastases.	Far advanced at time of operation; tumor had grown through both pectoralis muscles.
63	December. . . .	N. E., 44, m....	Alive	. . . .	Internal metastases found in March, 1905.
64	December. . . .	I. W., 45, m....	Alive and well		
65	1904, January... .	J. K., 38, m....	. . . .	Died Aug. 1904; internal metastases.	Death occurred 2 weeks after extirpation of opposite breast for carcinoma, done by another surgeon,
66	January	A. N., 28, s.....	Alive and well	. . . .	Clinically appeared fibroadenoma, small piece excised proved carcinoma on microscopic examination; radical operation done 2 days later.
67	March	R. H., 48, s.....	Alive and well	. . . .	First amputation of breast for seeming adenofibroma; microscopic examination revealed undoubted beginning carcinoma in center; radical operation promptly added.
68	April	O. B., 54, m....	Alive	. . . .	Regional recurrence in March, 1905; also metastases in opposite breast.
69	June	J. B., 69, m....	Alive and well		
70	September.. . .	F. K., 48, m....	Alive and well		

[16] In the nomenclature "local and regional recurrence" I have followed Halsted's interpretation (Annals of Surg. 1894, p. 497): Local recurrence is a return of the disease in the field of operation, in the apparent or buried scar, viz., a return of the disease in any part of the explored regions. Regional recurrence designates skin metastasis at a greater or less distance from the scar.

[17] The four unnumbered cases in this table represent two sarcomata and two in which the disease had recurred in the opposite breast. Of course, the latter are counted once only in giving the number of patients operated on; they are enumerated, however, in order to show the number of times the operation was performed by me.

ber are alive and well to-day 7, or 23.3 per cent.,[18] viz.:

Case No. 1, 1 well 10 years after operation.
Case No. 2, 1 well 9 years after operation.
Case No. 6, 1 well 8 years after operation.
Case No. 19, 1 well 7 years after operation.
Case No. 21, 1 well 6 years after operation.
Cases Nos. 25, 30, 2 well 5 years after operation.

An eighth (Case No. 17), who was operated on eight years ago, has developed a regional recurrence.

Twelve patients were operated on from three to five years ago, i. e., between September, 1899 and September, 1901. Of these, four, or 33.3 per cent., are alive and well to-day, from four to five years after operation, viz., Cases 25, 35, 37, 39.

In Case 25, the patient was operated on by me for cancer of the right breast in March, 1899. In December 1900, she returned to me with a cancer of the left breast, which I then also extirpated by the same method. She has been well and free from recurrence since—surely, an exceptional case.

A fifth patient, operated on in October, 1900, and who never presented herself for re-examination until March 1905, showed a local recurrence as well as a metastatic tumor in the skull which, she claims, developed in the course of the last few months.

From the above figures it appears that of 42 patients operated on 11 (12 operations), or 26.1 per cent., have remained free from recurrence from four to ten years after operation.

Of 28 patients operated on during the last three years, i. e., from September 1901 to September 1904, 14 are alive and well to-day, viz., Nos. 45, 48, 50, 52, 55, 56, 58, 59, 60, 64, 66, 67, 69, 70.

Of these, two were operated on from September 1901 to September 1902; seven from September 1902 to September 1903; the remaining five within the last year.

Four other patients operated on since September 1901, though alive to-day, have developed recurrences. One (51) has two small stationary glands posterior to the middle of the sternocleido mastoid muscle of the same side. Operation, November, 1902.[19] A second patient (61), operated on in October, 1903, has developed supraclavicular glands on the same side; the third (63), operated on in December, 1903, shows metastasis of the spinal column; the fourth (68), operated on in April, 1904, who had carried her scirrhus for more than two years before operation and failed to undergo *x*-ray after treatment, has a local recurrence.

Thus, of the entire 67 patients traced, 24, or 35.8 per cent., are alive and well to-day; 6 others, or 8.9 per per cent., though living, have developed either local, regional or metastatic recurrent growths. Thirty-five, or 52.3 per cent., have since died of the disease, viz., 4, or 5.97 per cent., of regional recurrence; the same number (4) of local recurrence plus metastases, and 27, or 40.3 per cent., of metastases.

Two other patients have died from causes not connected with the disease, i. e., one (Case 7), of diabetic coma, and one (Case 4), after being well and free from recurrence for nearly 7 years, succumbed to endocarditis (coroner's case).

Reviewing my ten years' experience with this method, I am convinced that final results could be further improved only, if we could get patients to come earlier for operation. The important task before us, therefore, is that of educating the public. Patients must be taught to lose their fear of "a surely resulting stiffness of the arm and sure recurrence"; they must be shown the absurdity of carrying a tumor, often for years, without consulting a physician, sometimes hiding its presence even from their nearest of kin.

In view of the excellent results that can be obtained by radical operation—functional as well as otherwise—physicians, too, should advise early operation not only in the plainly recognizable cases, but also in the doubtful ones, rather than keep such patients under observation until the disease has become manifest beyond question, and, perhaps, developed to a stage where it is beyond surgical reach.

Emphysema.—Potter recommends terebene in chronic emphysema. Wood states that the grindelia is of great service when there is accompanying cough. Brunton gives a single large dose of chloral in the sudden, acute form; small doses for long-continued dyspnea. For asthmatic cases Shoemaker prescribes tinct. euphorb. piluli 1 part, fld. ext. quebracho 7 parts, and gives one-half to two teaspoonfuls in water every three or four hours.—*Denver Med. Times.*

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[18] Another patient (No. 4) was well and free from recurrence for nearly seven years, when she died of endocarditis (coroner's report).

[19] See under special observations.

TETANUS.

A PRELIMINARY REPORT OF A STATISTICAL STUDY.*

JAMES M. ANDERS, M.D., LL.D.
AND
ARTHUR C. MORGAN, M. D.
PHILADELPHIA.

The object of these studies has been to demonstrate the incidence of tetanus in the United States and to present a brief review of all collectable cases, with a view to establishing our knowledge of the disease as it occurs in this country, as well as to adduce measures of prophylaxis and treatment.

A study of the literature from 1850 to 1904, covering the reports of cases found in the "Index-Catalogue of the Library of the Surgeon-General" in Washington from 1850 to 1892, and the "Index Medicus" from 1892 to 1904, inclusive, or 949 cases, with a report of 252 original ones collected by us from direct correspondence with hundreds of observers all over the country, giving a total of 1,201 cases, affords convincing proof that every case of the disease is the result of the introduction of the tetanus bacillus through a lesion of the skin, however minute it may be, and that so-called idiopathic or "rheumatic" tetanus does not exist. From our statistics the fact stands clearly forward that the disease is endemic to all large centers of population; that in some localities in which it formerly prevailed with marked severity, notably in Long Island, it has decreased in prevalence; that occasionally there are small epidemics that prevail, which can be definitely traced in their origin, as for instance in hospitals following the use of infected catgut sutures. The same is true of vaccination tetanus and diphtheria tetanus following the use of tetanized vaccine or antitoxin, and tetanus neonatorum (e. g., where cases have developed in the service of the same midwife).

Table 1 indicates many of the leading points concerning the cases collected by us from individual physicians throughout the United States and in subsequent tables aspects will be elaborated separately in detail.

DISTRIBUTION AND PREVALENCE IN THE UNITED STATES.

The sections of this country in which tetanus is most frequent are northern New York, along the Hudson Valley, Brooklyn and the surrounding districts of Long Island, southern Pennsylvania, Virginia, Georgia (at least about Savannah), southern Louisiana, Indiana, Illinois and southern California. Cases of tetanus were plentiful after the battle of Gettysburg and also after the battle of the Wilderness.

In 1,099 cases out of the total of 1,201 collected by us, the location by state was given (Table 2) with Pennsylvania leading, showing 224 cases, while New York stood next, with 190 cases. These figures, however, are misleading as regards the prevalence of the disease owing to the incompleteness of the returns from many quarters, and we refer the reader to the tabulated reports, copied from the census statistics of the United States, accompanying this study. Thus, while we noted but 17 cases from Louisiana, the census report for 1870 and 1890 shows a total of 806 cases, of which 642 were instances of tetanus neonatorum, in this one state alone.

A perusal of Table 3 can not help but impress every reader with the appalling mortality from tetanus of the newborn and herein, indeed, lies a great work in a concentrated endeavor to lessen the fearful ravages of the condition in the newborn.

It is interesting to note that the total number of cases for all the states mentioned in the table for 1870 was 1,627, and the total number of cases for 1900 was 2,259, indicating that while Fourth of July tetanus is vastly on the increase, in general the disease has been on the decrease as compared with the population.

There is a strip of land extending from the village of Oceanic New Jersey on the east, to the west of Red Bank on the west, the said strip being about one mile wide and five miles long, where tetanus is strongly endemic.[1] It is a well-known fact that on the eastern end of Long Island where formerly the disease was prevalent, it is now rare.[2]

The incidence of the disease is more or less influenced by the different seasons of the year, as may be seen from a glance at the subjoined table, which embraces 687 cases in which the seasonal occurrence was recorded.

An analysis of Table 4 shows the following numerical order: July, with 129 cases; October, with 75; September, with 68; June, 61; August, 59. Fourth of July celebration explains the great increase in July cases, but independently of this fact, the statement holds true that tetanus is more prevalent in the hotter as compared with the colder months of the year.

The age of the patient was given in 583 cases, as shown in Table 5.

It will be observed that the greatest number of cases tabulated with reference to the age developed as follows: Between 10 and 15 years there were 130 cases; from 5 to 10 years there were 99. From the 5th to the 15th years of life, therefore, 229 cases occurred, or 39.3 per cent. Between the ages of 15 and 25 there were 145 cases, or 24.9 per cent., while between those of 25 and 35, there were 86 cases, or 14.8 per cent. Beyond 50 years we found only 14 cases. In 981 of the cases the sex of the patient was noted, with the following result: Males, 778; females, 203, the former sex making up 79.3 per cent.

BACTERIOLOGY AND INFECTION ATRIA.

Nicolaier's bacillus is the causal factor in every case, although not always detected; it is easily stained. The germ occurs as a common saprophytic organism in most garden earths, in dust, manure, the intestines, and discharges of animals.

The recent literature as well as our own investigations show that the discovery of the tetanus bacillus in the wounds and also in the earth where infection was known to occur, is a more common event than formerly. Dr. Lefevre of Pittsburg, in a personal letter, referred to three cases in all of which the bacillus of Nicolaier was isolated from the pus found in the wounds. This observer mentions a fourth case, a child, which had fallen from a tree, sustaining a compound fracture of the arm with subsequent development of tetanus. Bacteriologic cultures of the earth from the spot on which the child fell showed the presence of the specific microorganism of this disease.

A non-pathogenic anaërobic organism which resembles the tetanus bacillus has been described, but the latter does not prove pathogenic when injected into the susceptible animals.[3] The germ rarely gains entrance into the alimentary tract by ingestion of food. The usual

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty sixth Annual Session, Portland, Ore., July, 1905.

[1] Dr. J. W. Bennett, Long Branch, N. J., in personal letter.

[2] Osler, Text-book, Practice of Medicine.

[3] Journal of Boston Society of Medical Science, 1901, p. 506.

TABLE I.

Case No.	Name of Reporter.	Year.	Month.	Sex.	Race.	Age.	Infection Atrium.	Incubation Days.	Duration. Days.	Mortality.	Serum Treatment.	Local and General Treatment.
1	Dr. J. M. Mason, Birmingham, Ala . . .	1903	Oct.	M	W	24	Nail in toe	100	17	0	. . . .	Local antisepsis carbolic acid hypo.
2	Dr. L. W. Johnstone, Tuskegee, Ala. . .	1904	April	M	W	5	Splinter in foot. . . .	6	3	1	Yes, amount not stated.	Chloral and bromids.
3	Dr. F. G. Du Bose, Selma, Ala	1898	May	M	C	45	Chronic leg ulcer. . .	. . . .	14	1	4 tubes P. D. & Co. in 48 hrs.	Chloral and bromids.
4	" " " " " "	1900	June	M	W	8	Foot wound.	4	3	1	. . . .	Chloral and bromids morphin hyoscin, antiseptics.
5	" " " " " "	1901	May	F	C	27	Unknown	. . . .	14	1	. . . .	Hyoscin, chloral and bromid morphin antiseptics.
6	" " " " " "	1902	June	M	C	. . . . .	Head wound	10	28	0	. . . .	Carbolic acid local ichthyol sedatives.
7	" " " " " "	1902	June	M	C	50	Foot wound	12	14	1	. . . .	Carbolic acid hypodermically.
8	Dr. J. L. Burns, Jonesboro, Ark.	1901	Sept.	F	W	10	Fracture forearm. . .	5	30 hrs.	1	. . . .	Amputation for septic embolism.
9	Dr. M. S. Dibrell, Van Buren, Ark. . .	1890	. . . .	M	W	10	Nail in foot.	7	7 days	1	. . . .	Excision, sedative carbolic locally.
10	Dr. A. A. Stafford, Alameda, Cal	1904	Jan.	M	W	14	Firecracker on hand. .	10	2	1	50 cc.	Carbolic locally, sedative.
11	Dr. W. M. Lewis, Los Angeles, Cal . . .	. . .	. . . .	F	C	40	Uterus.	8	4	1	. . . .	Douches sedative.
12	Dr. D. C. Barber, Los Angeles, Cal . .	See	notes	bel	ow	on 10	cases.					
13	Dr. C. Van Zualwenburg, Riverside, Cal.	1902	May	M	W	32	Abrased heel from shoe.	14	3	1	10 cc. every 3 hours,	Incision, chloral and bromids, carbolic locally.
14	Dr. W. A. Briggs, Sacramento Cal . . .	1903	. . . .	M	W	27	Face wound healed. .	. . . .	21	0	50 cc	20 mimims carbolic acid hypodermically daily.
15	" " " " " . . .	. . . . .	. . . .	F	C	18	Tooth extraction. . .	. . . .	10	0	. . . .	Chloral and bromids.
16	Dr. Fred Baker, San Diego, Cal.	1886	. . . .	M	W	30	Axe wound of foot . .	5	4	1	. . . .	Toe amputated, antiseptic.
17	" " " " "	1892	. . . .	M	W	50	Herniotomy.	7	5	1	. . . .	Antiseptic.
18	" " " " "	1904	. . . .	M	W	60	Axe wound of foot . .	14	30	0	Amount not stated.	Antiseptic.
19	Dr. W. F. McNutt, Jr., San Francisco Cal.	1904	. . . .	M	W	17	Dental operation on tooth.	4	10	1	Used but not stated.	Chloral and bromids, morphin hyoscin.
20	Dr. W. F. McNutt, Jr., San Francisco Cal.	1904	. . . .	M	W	22	. . . .	5	. . . .	0	Used but not stated.	Chloral and bromids, morphin hyoscin.
21	Dr. W. F. McNutt, Jr., San Francisco Cal.	1904	. . . .	M	W	34	. . . .	7	21	0	Used but not stated.	Chloral and bromids, morphin hyoscin.
22	Dr. Geo. Goodfellow, San Francisco, Cal.	1892	. . . .	M	W	36	Hypodermic needle in arm.	7	14	1	. . . .	Sedative.
23	Dr. Dudley Tait, San Francisco, Cal . .	1900	. . . .	M	W	25	Hand	5	7	1	Intracerebral and intravenous.	Carbolic acid locally.
24	" " " " " " . .	1901	. . . .	M	W	35	Arm	12	19	0	Intravenous and intracerebral.	Chloral.
25	Dr J. Barbat, San Francisco, Cal	1905	Feb.	M	W	12	Sole of foot.	10	5	1	150 cc.	Bichlorid locally chloral and bromids.
26	Dr. J. M. Perkins Dr. C. G. Hickey } Denver, Colo.	1903	July	M	W	14	Leg	10	2	1	Intracerebral amount not stated.	Incision iodoform dressing.
27	Dr. W. T. H. Baker Dr. R. W. Corwin } Pueblo, Colo. . . .	1900	Jan.	M	C	20	. . . .	8	2	1	None	Chloral bromid chloroform.
28	Dr. W. T. H. Baker Dr. R. W. Corwin } Pueblo, Colo . . .	1900	April	M	W	18	. . . .	10	4	1	Intracerebral 40 cc. . .	Chloral bromid choloform.
29	Dr. W. T. H. Baker Dr. R. W. Corwin } Pueblo, Colo. . . .	1902	June	M	W	36	. . . .	11	7	1	Subcutaneously 60 cc.	Chloral bromid chloroform.
30	Dr. J. F. Roe, Salida, Colo.	1902	April	F	W	21	Catgut in appendicectomy.	15	0	0	. . . .	Carbolic acid 5 per cent. hypodermic.
31	Dr. N. E. Wordin, Bridgeport, Conn. . .	. .	. . .	F	W	48	. . . .			1	. . . .	Trephined curare.
32	" " " " "	. . .	. . . .	M	W	28	. . . .	. . . .	. . . .	0	. . . .	Trephined.
33	Dr. F. Burnell, South Norwalk, Conn. .	1903	July	M	W	17	Toy pistol wound. . .	8	6	1	. . . .	Carbolic locally, chloral and bromids.
34	" " " " " " . .	1903	July	M	W	19	Toy pistol wound . .	10	21	0	. . . .	Carbolic locally, chloral and bromids.
35	Dr. L. I. Pons, Roxbury, Conn.	1904	. . . .	F	W	16	Abscess from splinter.	6	21	1	. . . .	Chloral and bromids, passion flowers.
36	Dr. R. B. Hopkins, Milton, Del	. . . . . .	. . . .	M	W	12	Toe crushed by horse.	7	5	1	. . . .	Turpentine bichlorid.
37	" " " " "	. . . . . .	. . . .	M	W	30	Machine hand crushed.	7	7	1	. . . .	Peroxid.
38	" " " " "	. . . . . .	. . . .	M	W	70	Finger tip crushed by wagon.	9	9	1	Amount not stated.	Antiseptic.
39	Dr. W. F. Haines, Seaford, Del	1895	. . . .	M	C	28	Hand injury	7	5	1	. . . .	Amputation.
40	Dr. H. C. Lawton, Norwich, Conn. . . .	1905	March	M	W	5	Puncture of great toe.	12	31	0	10 cc. every 4 hours.	Chloral and bromids, antiseptic.
41	Dr. T. L. Jefferson, W. Palm Beach, Fla.	1903	Sept.	M	C	37	Nail in foot	7	1	1	10 cc.	Carbolic acid locally, chloral and bromids.
42	Dr. W. W. Stewart, Columbus, Ga. . . .	. . . . . .	July	M	W	16	Firecracker on hand. .	2	12	0	Daily injection amount not stated.	Chloral and bromids and morphin.
43	" " " " "	. .	. . . .	F	W	28	Injury to scar of kidney operation.	1	1	1	Daily injection amount not stated.	Chloral and bromids and morphin.
44	Dr. W. D. Travis, Covington, Ga.	. . . .	. . . .	M	C	40	Nail wound of foot. .	8	6	1	. . . .	Antiseptic chloral and bromids.

TABLE I—(Continued.)

Case No.	Name of Reporter.	Year.	Month.	Sex.	Race.	Age.	Infection Atrium.	Incubation-Days.	Duration.—Days.	Mortality.	Serum Treatment.	Local and General Treatment.
45	W. D. Travis, Covington, Ga	. .	. . .	M	C	17	Nail wound of foot.	9	10	1	. . . .	Antiseptic chloral and bromids.
46	J. G. Jarrell, Savannah, Ga	1904	Jan.	M	W	25	Gunshot wound thigh.	18	7	0	. . . .	Antiseptic chloral and bromids.
47	J. A. Crowthers, Savannah, Ga	. .	. . .	. .	. .	. . .	. . . .	. . .	. . . .	1	Intracerebral injection.	
48	Dr. M. F. Dunn Dr. J. G. Jarrell } Savannah, Ga	1894	. .	M	W	30	Comp. dislocation of wrist.	7	10	1	. . . .	Antiseptic chloral and bromids.
49	Dr. J. G. Jarrell, Savannah, Ga	1896	. . .	M	C	19	Lath nail in foot.	12	10	1	. . . .	Antiseptic chloral and bromids.
50	“ “ “ “ “ “	1893	. . .	M	C	20	Nail in great toe	10	7	1	. . . .	Antiseptic chloral and bromids.
51	Dr. E. H. Griswold, Peru, Ind	1903	June	M	Ind	5	Nail in foot	5	5	1	. . . .	Carbolic acid hypo.
52	“ “ “ “ “ “	1903	June	M	W	12	Car injury to foot.	7	10	1	. . . .	Carbolic acid hypo.
53	“ “ “ “ “ “	1904	June	M	W	30	Pistol shot in hand.	10	6	1	. . . .	Carbolic acid hypo.
54	Dr. Etta Charles, Summitville, Ind	1905	May	F	W	. . . . .	Wound on leg.	7	4	1	20 cc. every 4 to six hours.	Chloral and bromids.
55	Dr. C. M. Eisenbeiss, Elkhart, Ind.	1902	Nov.	M	W	20	Index finger.	21	30	0	Large amt. but not stated.	Antiseptic.
56	Dr. W. E. Scott, Adel, Iowa	. .	. . .	M	W	13	Foot	21	28	0	. . . .	Chloral and bromids.
57	Dr. M. J. Keuepick, Algona, Iowa.	1895	. . .	M	W	7	Comp. fract. ulna and radius in runaway.	. . . .	5	1	. . . .	Chloral and Bromids.
58	Dr. H. G. Ristin, Ft. Dodge, Iowa.	1900	Feb.	M	W	35	Wound of thumb joint.	19	12	0	. . . .	10% carb. solutien by mouth in lrg. doses.
59	Dr. C. H. Churchill, Ft. Dodge, Iowa.	1901	Oct.	M	W	45	Finger wound.	7	5	1	. . . .	Large doses of carb. acid hypo.
60	Dr. J. H. McGready, Independence, Ia.	1902	June	M	W	40	Gunshot wound, foot.	5	2	1	50 cc.	Antiseptic.
61	Dr. W. G. Mullarky, Cedar Falls, Iowa.	1902	April	F	W	18	Nail in foot.	4	10	1	Large amount.	Excision, sedative.
62	Dr. A. L. Wright, Carroll, Iowa	. .	. .	M	W	12	Foot wound.	4	3	1	. . . .	Chloral and bromids.
63	“ “ “ “ “ “	. .	. . .	M	W	50	Foot wound.	5	2	1	. . . .	Chloral and bromids.
64	“ “ “ “ “ “	. .	. . .	F	W	18	Foot wound.	5	3	1	. . . .	Chloral and bromids.
65	“ “ “ “ “ “	. .	. . .	F	W	35	Unknown.	. . . .	4	1	. . . .	Chloral and bromids.
66	Dr. T. J. Maxwell, Keokuk, Iowa	. .	. . .	M	W	9	Crushed foot	9	21	0	60 cc.	Heroin.
67	Dr. F. H. Boucher, Marshalltown, Ia.	1887	June	F	W	4	Knife wound.	2	3	1	. . . .	Chloral and bromids.
68	“ “ “ “ “ “	1887	June	F	W	10	Axe wound	5	7	1	. . . .	Chloral and bromids.
69	“ “ “ “ “ “	1892	Oct.	M	W	35	Puncture from safety pin.	7	42	0	. . . .	Chloral and bromids.
70	Dr. T. M. Throckmorton, Dr. A. L. Yocum, } Chariton, Ia.	1890	. . .	M	W	35	Scalp wound in runaway.	5	3	1	. . . .	Chloral and bromids.
71	Dr. J. H. Sams. Clarion, Ia.	1894	July	M	W	5	Chicken bone in heel.	7	3	1	. . . .	Chloral and bromids.
72	“ “ “ “ “ “	1904	Mar.	F	W	8	Wound in finger in barn.	14	28	0	16 drams serum in all.	Chloral and Bromids,
73	Dr. S. L. Ensminger, Crawf'dsville, Ind.	1879	. . .	M	W	22	Hand	7	6	1	. . . .	Poultices, antiseptics and calabar bean.
74	“ “ “ “ “ “	1884	. . .	F	W	16	Leg	2	14	0	. . . .	
75	“ “ “ “ “ “	1898	. . .	F	W	30	Arm	4	4	1	. . . .	
76	Dr. B. H. Breakstone, Chicago, Ill.	1901	. . .	M	W	9	Thigh wound	3	4	1	. . . .	Chloral and bromids.
77	“ “ “ “ “ “	1901	. .	M	W	9	Scalp wound	5	8	1	Small amount.	Chloral and bromids.
78	“ “ “ “ “ “	1901	. . .	M	W	8	Finger wound.	4	5	1	. . . .	Chloral and bromids.
79	“ “ “ “ “ “	1900	. . .	M	W	11	Ingrown toenail.	4	12	1	. . . .	Chloral and bromids.
80	“ “ “ “ “ “	1902	. . .	M	W	42	Hand wound	3	9	1	Small amount.	Chloral and bromids.
81	Dr. G. M. French, Danville, Ill	1995	Mar.	F	W	31	Blank cartridge wound.	5	30 hrs.	1	. . . .	Chloral and bromids.
82	Dr. H. W. Morehouse, Danville, Ill	1904	Oct.	M	W	15	Gunshot wound of leg.	12	6	1	30 cc. ev. 3 hrs.	Bichl. locally.
83	Dr. C. Chenowett, Decatur, Ill	1905	Mar.	M	W	25	Nail in foot.	6	9	1	50 cc.	Chloral and bromids.
84	Dr. I. A. Shirley, Winchester, Ky	1903	May	M	W	6	Splinter wound of foot.	10	. . . .	0	Large amount.	Tonics chlo. and bromids.
85	Dr. I. A. Shirley, Dr. T. H. McKinley, } Winchester, Ky.	. .	. . .	M	W	10	Knee joint	30 hrs.	. . . .	0	10 cc. serum early.	Chloral and bromids.
86	Dr. J. H. Letcher, Henderson, Ky	1902	Dec.	M	W	9	Arm comp. fract	9	6	1	15 cc. late	Amputation, chloral.
87	“ “ “ “ “ “	1903	. . .	. . . .	. .	5 dys.	Navel.	. . . .	. . . .	1	. . . .	Sedative.
88	“ “ “ “ “ “	1902	. . .	. . . .	. .	5 dys.	Navel	. . . .	. . . .	1	. . . .	Sedative.
89	Dr. Arch Dixon, Henderson, Ky	1880	. . .	M	W	7	Hand	1	averg'd 14	1	. . . .	Amputation, antiseptics.
90	“ “ “ “ “	1883	. . .	M	W	18	Foot.	28	14	1	. . . .	
91	“ “ “ “ “	1888	. . .	M	W	30	Foot.	5	14	1	. . . .	
92	“ “ “ “ “	1898	. . .	M	W	24	Foot.	7	14	1	. . . .	
93	“ “ “ “ “	1899	. . .	M	W	35	Wrist.	9	14	1	. . . .	
94	“ “ “ “ “	1901	. . .	F	C	46	Wrist.	6	14	1	. . . .	
95	Dr. G. R. Tolson, Covington, La.	. .	Nov.	M	W	40	Foot.	4	6	1	. . . .	
96	Dr. F. W. Parham, New Orleans, La	1905	Mar.	M	W	27	Forehead.	6	5	1		
97	“ “ “ “ “ “ “	1901	. . .	M	W	11	Wound of leg and thigh.	9	. . .	0	10 cc.	
98	Dr. F. C. Dixon, Lewiston, Me.	1901	. . .	M	W	10	Nail in foot.	. . . .	. . . .	0	Freely used.	Chloral and bromids.
99	Dr. H. H. Brock, Portland, Me	1904	Nov.	F	W	20	After appendectomy.	7	9	1	33 cc. ev. 12 hrs.	Chloral and bromids.
100	Dr. W. V. Hanscom, Portland, Me.	1895	. . .	M	W	7	Compound fracture.	7	4	1	. . . .	Chloral and brom., Cannabis Indica.
101	“ “ “ “ “ “	1898	. . .	M	W	9	Unknown	. . . .	4	1	. . . .	
102	Dr. T. J. Daly, Lawrence Mass	1903	Aug.	M	W	18	Gunshot—hand.	25	42	0	Large amount	Carbolic acid locally.
103	W. E. Webber, Lewiston, Me	1904	Mar.	F	W	32	After ovariotomy.	7	4	1	Large amount.	Chloral and bromids.
104	Dr. C. F. Davidson, Easton, Md.	1904	July	M	W	12	Poison oak on face.	9	65 hrs.	0	300 cc.	
105	Dr. F. B. Smith, Frederick, Md	1893	. . .	M	W	50	Bruised finger	14	42	0	. . . .	Chloral and bromids.
106	“ “ “ “ “	1894	. . .	M	W	10	Lacerated leg.	4	10	1	. . . .	Chloral and bromids.
107	“ “ “ “ “	1899	. . .	M	W	25	Bruised finger	7	21	1	. . . .	Chloral and bromids.
108	“ “ “ “ “	1904	. . .	M	W	30	Gunshot wound—hand.	10	21	0	Large doses.	Calabar bean.
109	Dr. B. W. Goldsborough, Cambridge, Md.	1898	. . .	F	W	10	Wound.	7	8	0	. . . .	Chloral and bromids, chloroform hyoscin.
110	“ “ “ “ “ “	1898	. . .	F	C	8	. . . .	8	10	1	. . . .	
111	“ “ “ “ “ “	1900	. . .	M	W	12	. . . .	5	25	0	Large doses.	
112	“ “ “ “ “ “	1901	. . .	M	C	17	. . . .	3	7	1	Large doses.	
113	“ “ “ “ “ “	1904	. . .	M	W	25	. . . .	8	21	0	Large doses.	
114	Dr. J. C. Hickerson, Independence, Mo.	1903	July	M	W	14	Pistol wound, finger.	10	4	1	4 tubes PD&C.	
115	Dr. C. B. Clapp, Moberly, Mo	1893	July	M	W	33	Gunshot, leg	9	7	1	. . . .	C. and B. local heat and blister to spine and neck.
116	“ “ “ “ “ “	19 0	Nov.	M	W	19	Dog bite, leg.	10	10	1	Large doses.	
117	“ “ “ “ “ “	1902	Sept.	M	W	17	Comp. fracture, arm.	12	14	1	. . . .	
118	Dr. J. R. Williams, White Pigeon, Mich.	1888	. . .	M	W	15	. . . .	7	5	1	. . . .	Blister spine, Chloral and bromids, gelsemium, calabar bean.
119	“ “ “ “ “ “ “	1890	. . .	F	W	15	. . . .	10	12	0	. . . .	
120	“ “ “ “ “ “ “	1903	. . .	M	W	30	. . . .	7	6	1	Amt. not sta'd	
121	“ “ “ “ “ “ “	1901	. . .	M	W	30	. . . .	8	8	0	. . . .	
122	“ “ “ “ “ “ “	1905	May	M	W	28	. . . .	5	4	1	Amt. not sta'd	
133	Dr. East, Constantine, Mich	1905	May	M	W	13	Nail in foot.	7	5	1	Amt. not sta'd	
124	Dr. Rush McNair. Kalamazoo. Mich	1899	Aug.	M	W	13	Splinter in toe	21	30	0	60 cc.	Warm sponge baths.
125	Dr. C. Van Zualwenburg,	1897	May	M	W	28 da.	Navel	Unk'n.	14	0	. . . .	Chloral and bromids.
126	“ “ “ “ “ “	1892	. . .	M	W	5 da.	. . . .	5?	2	1	. . . .	Chloral and bromids.
127	Dr. C. B. Nancrede, Ann Arbor, Mich.	1898	Oct.	M	C	16	Nail in foot.	7	6	1	50 cc. Hypo.	Chloral and bromids.
128	“ “ “ “ “ “ “	1902	July	M	W	15	Firecracker in hand	5	4	1	10 cc. Hypo.	Carbolic locally.

TABLE 1—(Continued.)

Case No.	Name of Reporter.	Year.	Month.	Sex.	Race.	Age.	Infection Atrium.	Incubation —Days.	Duration —Days.	Mortality.	Serum Treatment.	Local and General Treatment.
129	Dr. C. B. Nancrede, Ann Arbor, Mich....	1902	Sept	M	W	17	Hand...	11	41	0	Large amounts hypo.	Amputation of forearm. Carbolic.
130	“ “ “ “ “ “ “	1903	July	M	W	16	Blk. cartridge—hand.	8	1	1	....	Amputation, chlo. and bro. and carbolic.
131	“ “ “ “ “ “ “	1905	...	M	W	19	Shotgun w'nd, left leg	10	21	0	20 c.c. in spinal canal.	Amputation, chloral and bromids.
132	Dr. C. D. Clawson, Montour Falls, N.Y..	..	...	M	W	25	Unknown........	....	....	1	....	Chloral and bromids.
133	Dr. W. H. Park, New York City.....	1903	...	M	W	10	Crushed finger....	12	20	0	30 c.c. intravenous, lrge. doses hypo.	Chloral and bromids, finger amputated.
134	Dr. S. Blume, Riverhead, L. I., N. Y...	1905	April	F	W	8	Unknown.......	6	15 hrs.	1	....	
135	Dr. J. H. Benjamin, Riverhead, L.I., N.Y.	1900	...	M	C	5	Foot wound......	....	5	1	....	C. & B. and opium
136	“ “ “ “ “ “ “	1880	...	M	W	30	Foot wound......	....	6	1	....	C. & B. and opium
137	Dr. H. D. Wey, Elmira, N. Y.......	1894	..	M	W	20	Comp. frac. forearm..	5	5	1	....	C. & B, and chlorofrm.
138	Dr. M. Skidmore, E. Moriches, L. I....	1900	June	M	W	50	Incised wound—nose	2	7	1	....	Warm baths, antispasmodic.
139	“ “ “ “ “ “ .	1895	...	M	W	30	Horse kick in face ..	2	60	0	....	2 qts. whisky every 24 hrs.; warm baths.
140	Dr. H. B. Besemer, Ithaca, N. Y.....	1896	...	F	W	18	Miscarriage.......	....	....	1	....	Curettement.
141	“ “ “ “ “ “	1899	...	M	W	30	Operat'n, herniotomy.	5	6	1	....	
142	“ “ “ “ “ “	1902	..	M	W	12	Splinter in foot....	5	8	1	Lrg. amt. hypo.	
143	“ “ “ “ “ “	1904	July	M	W	14	Pistol—hand......	6	2	1	2 doses in brain, 2 doses hypo.	
144	Dr. P. S. Mallon. Morris Plains, N. Y....	1905	Jan.	M	C	38	Foot	....	10	1	....	Opium.
145	Dr. Geo. Haslam, Fremont, Neb....	1902	Mar.	M	W	21	Lacerated thigh ...	7	2	1	....	Carbolic hypo.
146	“ “ “ “ “	1904	Sept.	M	W	60	Gunshot in chest...	7	3	1	Amt not stated..	
147	“ “ “ “ “	1896	Dec.	M	W	19	Laceration index fing.	16	24	0	50 c c. hypo....	Amputation.
148	Dr. W. T. Johnson, Pawnee City, Neb...	1903	Sept.	M	W	7	Knee	8	12	0	2000 units.....	Chloral and bromids, antiseptics.
149	“ “ “ “ “ “ “ ...	1904	Sept.	F	W	3	Foot	7	42	0	11,000 units....	
150	“ “ “ “ “ “ “ ...	1900	...	M	W	8	Foot..........	8	1	1	....	
151	Dr. H. T. Bahnson, Winston Salem, N. C.	..	....	M	C	27	Cut finger.......	14	....	0	....	Chloral and bromids.
152	“ “ “ “ “ “ “	..	....	M	C	23	Cut toe with hoe....	60	2	1	....	Chloral and bromids.
153	“ “ “ “ “ “ “	..	....	M	W	15	Shotgun in hand....	7	3	1	....	Chloral and bromids.
154	“ “ “ “ “ “ “	..	....	M	W	20	Shotgun in leg.....	10	2	1	....	Chloral and bromids.
155	“ “ “ “ “ “ “	..	....	F	W	25	Orbit from cartridge.	10	7	0	....	Free drainage of pus.
156	Dr. D. E. Stanton, High Point, N. C...	1893	...	M	W	6	Not stated	10	5	1	....	
157	Dr. C. M. Strong, Charlotte, N.C ...	..	....	M	C	40	Comp. frac. tib. and fib.	10	4	1	Small amount...	
158	“ “ “ “ “ “	..	....	M	C	21	Kick on arm by horse.	21	5	1	....	
159	“ “ “ “ “ “	..	....	M	C	12	Nail in foot......	14	3	1	....	
160	Dr. J. H. Gleason, Manchester, N. H ..	1898	July	M	W	14	Firecracker in hand..	12	5	1	Amt. not stated hypo.	
	“ “ “ “ “ “ ..	1902	July	M	W	20	Firecracker in hand..	14	6	1	Amt. not stated, hypo.	
161	Dr. W. T. Smith, Hanover, N. H.....	1903	Sept.	M	W	39	Gunshot—forearm ..	5	3½	1	60 c.c. hypo....	Amputation.
162	“ “ “ “ “ “	1904	July	M	W	27	Comp. frac. forearm..	6	7	1	400 c.c.......	Amputation.
163	“ “ “ “ “ “	1904	Oct.	M	W	12	Gunshot—thigh....	7	2	1	120 c.c........	Drainage.
164	Dr. C. R. Gould, Tilton, N. H	1886	Feb.	M	W	65	Sole of foot......	5	2	1	....	C. & B, opium, hot fomentation.
165	“ “ “ “ “ “	..	....	M	W	50	Comp. frac. at elbow.	7	4	1	....	
166	“ “ “ “ “ “	..	.	F	W	14	Hay fork in foot ...	2	3	1	....	
167	Dr. F. A. Knich, Westfield, N. J.....	1880	Dec.	M	W	40	Frosted feet......	....	7	1	....	
168	“ “ “ “ “ “	1885	April	M	W	45	....	....	30	0	....	
169	Dr. H. C. James, Mays Landing, N. J...	1903	July	F	W	11	Splinter in foot....	8	4	1	280 c.c.......	
170	Dr. B. N. Hoagland, Woodbridge, N. J.	1904	Jan.	F	W	8	Splinter in foot....	5	4	1	20 c.c........	Chloral and bromids.
171	Dr. R. C. Newton, Montclair, N. J....	1895	...	M	W	16	Scalp wound . .	7	7	1	....	
172	“ “ “ “ “ “	1898	...	F	W	60	Nasal mucous memb.	....	3	1	....	Plug. for hemorrhage.
173	“ “ “ “ “ “	1899	...	M	W	12	Toy pistol in hand ..	4	7	1	....	Amputation.
174	“ “ “ “ “ “	1902	...	F	W	20	Finger.........	6	12	0	....	
175	“ “ “ “ “ “		...	F	W	25	Unknown........	3	7	1	....	
176	Dr. F. W. Flagge, Rockaway, N. J....	1890	...	M	W	12	Rusty nail in foot ..	7	6	1	....	Chloral and bromids.
177	Dr. S. T. Day, Port Norris, N. J.....	1893	...	M	W	13	Heel of foot.... ..	10	20	0	....	C. & B. gelsemium; carbolic locally.
178	Dr. C. H. Wintsch, Newark, N. J....	1904	...	M	W	17	Nail in foot	7	....	0	....	Per. oxid echinacea—antiseptics, caut.
179	“ “ “ “ “ “	1904		M	W	32	Not given	10	42	0	....	
180	Dr. J. F. Hurff, Blackwood, N. J....	1903	Oct.	M	W	77	Splinter in hand....	6	10 hrs.	1	....	Poultices.
181	Dr. G. W. Harrison, Albuquerque, N. M.	1882		M	W	12	Wound of foot	....	....	1	....	Chloral and bromids.
182	Dr. W. D. Hancock, Millville, Ohio...	1904	May	M	W	6	Fork tine in foot ...	7	4	1	4000 units....	Chloral and bromids.
183	Dr. C. B. Reid, Van Wert, Ohio. ...	1896	Sept.	M	W	...	Nail in foot	14	53	0	Some used on 16th day.	Chloral and brom.; hyoscin, cannabis indica.
184	“ “ “ “ “ “ “	1903	July	M	W	15	Toy pistol, left hand..	12	30	0	....	
185	Dr. R. W. Elliott, Cleveland, Ohio...	1900	...	M	W	13	Blk. cartridge—hand.	5	1	1	40 c.c. hypo....	
186	Lakeside Hospital, Cleveland, Ohio..	..	...	M	W	11	Blk. cartridge—hand.	8	1	1	30 c.c. hypo....	
187	“ “ “ “ ..	..	...	M	W	12	Rake in foot	6	2	1	....	Chloral and bromids.
188	“ “ “ “ ..	1901	...	M	W	45	Crushed hand.....	10	2	1	10 c.c. hypo ...	Amputation; C. & B.
189	“ “ “ “ ..	1902	..	M	W	8	Blk. cartridge—hand.	8	7	1	180 c.c. hypo...	
190	“ “ “ “ .	1903	..	M	W	25	Blk. cartridge—hand.	7	4	1	25 c.c. in brain..	
191	“ “ “ “ ..	1903	...	F	W	18	Blk. cartridge—hand.	7	1	1	60 c.c. hypo. .	
192	“ “ “ “ ..	1903	...	M	W	8	Blk. cartridge—hand.	7	2	1	80 c.c. hypo. ..	
193	“ “ “ “ ..	1903	...	M	W	8	Blk. cartidge, scrotum	6	2	1	10 c.c. hypo. ..	
194	“ “ “ “ ..	1903	...	M	W	13	Blk. cartridge—hand.	7	4	1	160 c c.	
195	“ “ “ “ ..	1904	...	M	W	84	Small wound—hand .	20	15	0	400 c.c. in spinal canal in 10 dys.	
196	“ “ “ “ ..	..	..	M	W	9	Barefoot, no wound..	....	6	1	180 c.c. in spinal canal.	
197	“ “ “ “ ..	..	...	M	W	14	Nail in foot......	8	2	1	180 c.c. in spinal canal.	Chloral and bromids.
198	Dr. F. H. Bloomhardt, Altoona, Pa...	1903	...	M	W	38	After hemorrhoids operation.	40	17	0	....	Carb. acid hypo.
199	“ “ “ “ “ “ ...	1903	June	M	W	13	Splinter in finger...	7	5	1	....	
200	“ “ “ “ “ “ ...	1904	July	M	W	40	Nail in foot......	5	20	1	....	
201	“ “ “ “ “ “ ...	1904	Dec.	M	W	34	Index finger of hand.	9	90	0	Large doses...	C. & B., calabar bean.
202	Dr. J. M. Beck, Alexandria, Pa......	1903	July	F	W	17	Toy pistol in finger. .	....	....	0	....	
203	Dr. W. J. Hertz, Allentown, Pa......	1902	July	M	W	12	Sole of foot	6	1	1	90 c.c.........	Chloral and bromids.
204	Dr. C. L. Bradford, Austin, Pa......	1905	Feb.	M	W	35	Laccrated arm ...	8	3	1	40 c.c.	C. & B.; carb. and iodin locally.
205	“ “ “ “ “ “	1899	Aug.	M	W	70	Razor wound of toe..	8	3	1	40 c.c........	
206	Dr. J. A. Lynch, Cresson, Pa......	1898	April	M	W	8	Nail in sole of foot..	7	5	1	....	C. & B., carb. locally.
207	Dr. B. B. Levengood, Bellwood, Pa...	1904	July	M	W	13	Cartridge w'nd, thumb	10	6	1	....	C. & B., carb. locally.
208	Dr. F. O. Bryant, Chester, Pa......	1901	...	M	W	38	Gunshot wound.	42	14	0	Large amount..	
209	“ “ “ “ “ “	1900	...	M	W	12	Punctured wound ..	7	4	1	Large amount..	
210	“ “ “ “ “ “	1902	..	M		35	Punctured wound ..	6	7	0	Large amount..	
211	Dr. J. D. Keller, Hanover, Pa	1904	May	M	W	12	....	?	5	1	Amt. not stated.	Chloral and bromids.
215	Dr. W. Leiser, Lewisburg, Pa......	1899	...	M	W	8	Nail in foot ...	7	5	1	....	Chloral and brom.; hot applications, locally.
216	“ “ “ “ “	1899	...	M	W	30	Gunshot wound, hand	6	14	0	....	
217	“ “ “ “ “	1899	...	M	W	32	Nail in foot......	8	15	0	40 c.c	
218	Dr. M. L Davis, Lancaster, Pa......	1905	Feb.	M	W	64	Thumb crushed ...	6	5	1	40 c.c	Chloral and bromids

TABLE 1—(Continued.)

Case No.	Name of Reporter.	Year.	Month.	Sex.	Race.	Age.	Infection Atrium.	Incubation —Days.	Duration —Days.	Mortality.	Serum Treatment	Local and General Treatment.
219	Dr. R. W. Hunter, McKeesport, Pa . . .	1904	July	M	W	11	Pistol wound, finger.	3	15	0	Heroic doses . .	Incision C. and B. Ol Tigli.
220	Dr. W. C. Baird, McKeesport, Pa. . . .	1900	July	M	W	20	Pistol wound, finger..	1	1	1	. . . . .	
221	Dr. L. J. Hammond, Philadelphia, Pa..	1902	. .	F	W	22	Caries of lower jaw . .	21	8	1	Large doses, subcut. and in spinal canal.	C. and B. carbolic locally and subcutaneously, bloodletting and intravenous salt infusion.
222	“ “ “ “ “ “ ..	1903		M	W	24	Brushburn of nose....	15	24	0		
223	“ “ “ “ “ “ ..	1905	May	M	W	62	Dental caries	15	5	1		
224	Dr. J M. Ellzy, Philadelphia, Pa. . . .	1905	April	M	W	38	Arm cut by saw. . . .	4	1	1	60 c.c. hypo . .	Incision. C. and B.
225	Dr. H. A. Lowenburg, Philadelphia, Pa.	1905	April	F	W	27	Great toe.	5	4	1	20 c.c. hypo. . .	Chloral and bromids morphine.
226	Dr. G. H. Woods, Pine Grove Mills, Pa.	1901	. . .	M	W	7	Arm caught in wagon	4	4	1	. . . .	Chloral and bromids.
227	Dr. E. W. Meredith. Pittsburg, Pa . . .	1904	July	M	W	12	Toy pistol—hand.. . .	15	21	0	20 c.c. hypo.. . .	Amputation at elbow, C. and B.
228	Dr. E W Meredith, (Mercy Hospital), Pittsburg Pa.	1904	. . .	M	W	9	Horse kick in face . .	2	2	1	30 c.c. hypo.. . .	Chloral and bromids.
229	Dr. E. W. Meredith, (Mercy Hospital,) Pittsburg Pa.	1904	Feb.	M	W	19	Dynamite explosion, face and eye.	9	5	1	Intracerebral amt. not stat'd	Eye enucleated antistreptoccic serum also used.
230	Dr. E. W. Meredith, (Mercy Hospital), Pittsburg, Pa.	1902	Mar.	M	W	35	Crush o foot	5	2	1	Intracerebral amt. not stat'd	
231	Dr. E. W. Meredith, Pittsburg, Pa. . . .	1898	June	M	W	16	Comp. fracture, leg. .	7	5	1	Hypo amt. not stated.	Chloral and bromids.
232	Dr. J. S. Hammers, Pittsburg, Pa.. . . .	1904	Aug.	M	W	49	Laceration of forearm from wagon.	5	28	0	66 c.c. hypo . . .	12½ cc. of Murphy's fluid hypo.
233	Dr. H. F Gross, York, Pa	1905	May	M	W	13	Foot wound.	5	36 hrs	1	. . . .	Chloral and bromids
234	J. W. Babcock, Columbia, S. C.	1897	Dec.	M	C	35	Foot wound.	4	2	1	. . . .	Chloral and bromids.
235	Dr. S. L. Jepson, Wheeling, W. Va.. . .	1869	. . .	M	W	47	Unknown.	5	1	1	. . . .	Chloral and bromids.
236	“ “ “ “ “ “ . . .	1872	. . .	M	C	13	Nail in foot.	2	2	1	. . . .	Chloral and bromids
237	“ “ “ “ “ “ . . .	1898	July	M	C	8	Toy Pistol—hand. . .	14	14	0	. . . .	Chloral and bromids
238	“ “ “ “ “ “ . . .	1898	July	M	C	7	Toy pistol—hand. . .	14	14	0	. . . .	Chloral and bromids.
239	Dr W. P. Carr. Washington, D. C. . . .	1903	. . .	M	W	12	Vaccination wound. .	10	56	0	Amt. not stated.	Chloral and bromids.
240	“ “ (Emergency Hos'tal) “	1902	. . .	M	W	24	Crushed foot..	. . . .	. . . .	0		
241	“ “ “ “ “	1903	. . .	M	C	40	Crushed foot	. . . .	3	1	Amt. not stated.	Amputation under spinal anesthesia.
242	“ “ “ “ “	1900	. . .	M	C	45	Unknown	. . . .	3	1	Amt. not stated.	
243	“ “ “ “ “	1903	. . .	M	C	45	Hand wound	. . . .	5	1	Amt. not stated.	
244	“ “ “ “ “	1905	. .	M	C	48	Hand wound	. . . .	7	1		
245	Dr. W. H. Ross. Brentwood. N. Y. . . .	1889	Jan.	M	W	40	Splinter, thumb nail.	3	6	1	. . . .	Chloral and bromids.
246	Dr. A. C. Morgan, Philadelphia, Pa. . .	1897	Oct.	M	W	41	Nail in foot.	6	2	1	. . . .	C. and B. morphin, cocain, temp. 106.2.
247	Dr. W. F. Craig, Philadelphia, Pa. . . .	1898	Jan.	M	W	32	Kicked by man on foot and leg.	15	6	1	60 cc. hypo . . .	Chloral and bromids.
248	Dr. A. H. Baker, Elmira, N. Y.	1903	July	M	W	11	Toy pistol—hand. . . .	10	16	0	3 bottles hypo P. D. & Co. serum.	Chloral and bromids.
249	Dr. C. W. V. Brown, Elmira, N. Y.. . . .	1891	. . .	M	W	7	Vaccination	7	6	1	. . . .	Chloral and bromids.
250	Dr. R. H. Spangler, Philadelphia, Pa. .	1902	Nov.	M	W	28	Wound of finger . . .	. . . .	12	1	30 c.c..	Chloral and bromids, carbolic acid.
251	Pennsylvania Hospital, Philadelphia. .	1905	April	F	W	9	Nail in foot.	6	4	1	Amt. not stated.	
252	Dr. B. W. Taylor, Columbia, S. C.. . . .	1902	. . .	M	W	7	. . . .	8	21	0	40 c.c. hypo . . .	Excision C. and B.

portal of entrance is by open wounds of any part of the body, no part, on account of its peculiar tissue formation, however, showing any predilection, but the point of implantation depends entirely on the most common seats of injury in general. Our tables show the extremities to have been the most common sites of infection, notably the hands and feet, although the figures indicate the great susceptibility of all parts of the body to the poison. The infection atria were recorded in 863 cases, with the interesting results shown in Table 6.

Males are more susceptible than females, according to our statistics, and this coincides with the prevailing opinion among writers on the subject, but the discrepancy in the number of cases furnished by the two sexes may be accounted for in part at least by the fact that males are more exposed to the infection than females. The robust are more receptive than the weak, and the nervous than the lymphatic. It is well-known that persons residing in localities in which the disease prevails endemically evince excitation of the nervous functions and that these nervous symptoms are markedly prominent when laboring under fevers and other diseases.[4] A student who developed tetanus from a dissecting wound of the finger reported that he had had a previous attack from a splinter in a finger some years before.[5]

There is much evidence to show that tetanus is directly transmissible and may give rise to epidemics. Kleiner[6] reports a case of tetanus neonatorum in a twin which was immediately isolated from the mother and other child; at the end of four days the sick child was brought back to the mother, who insisted on having it; five days after this occurred the second child became ill of the disease. Another instance is recorded of a case in a boy, whose brother also developed tetanus in ten days.[7] An epidemic of tetanus neonatorum occurred in Baltimore, in which 12 cases occurred in the practice of one midwife, all within a few blocks of each other.

Table 2.—Distribution of Tetanus Cases by States.

Alabama	23	Missouri	77
Arkansas	3	Mississippi	6
Arizona	9	Nebraska	7
California	27	New Hampshire	7
Colorado	11	New Jersey	45
Connecticut	14	New Mexico	1
Delaware	4	New York	190
District of Columbia	14	North Carolina	15
Florida	2	Ohio	56
Georgia	17	Pennsylvania	224
Idaho	1	Rhode Island	15
Illinois	35	South Carolina	8
Indiana	25	South Dakota	1
Iowa	37	Texas	28
Kansas	3	Tennessee	16
Kentucky	23	Vermont	4
Louisiana	17	Virginia	21
Maine	9	West Virginia	4
Maryland	46	Wisconsin	4
Massachusets	30		
Michigan	25	Total	1,099
Minnesota	4		

INTERESTING CLINICAL FEATURES.

In our tabulated cases several interesting clinical features were noted.

In Case 36 the trismus was so great that the teeth were crushed down to their roots.

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[4] Carpenter, Transactions New Jersey Medical Society of 1874.

[5] Boston Medical and Surgical Journal of 1863.

[6] The Gross Medical College Bulletin, 1895.

[7] Boston Medical and Surgical Journal, 1853.

In Case 61 fracture of the spinous processes of the vertebræ resulted from severe convulsions.

In Case 56 of our series during convalescence there was marked desquamation of the skin and enlargement of the lymphatic glands; antitoxin had not been used in this case.

In Case 22, in a morphin fiend, no one puncture could be designated as the site of infection.

In Case 10 the patient had a temperature of 1 degree F. every day during the period of incubation. This occurrence suggests the importance of recording the temperature in suspicious cases to determine whether there is any connection between the slight febrile movement and tetanus.

TABLE III.

Mortality of Tetanus in Census Years as Shown by U. S. Vital Statistics.

	1870.		1880.		1890.		1900.	
	Tetanus Neonatorum.	Total Cases.	Tetanus Neonatorum.	Total Cases.	Tetanus Neonatorum.	Total Cases.	Tetanus Neonatorum.	Total Cases.
Alabama	28	52	86	108	79	96	23	84
Arizona	. .	. .	. .	.	. .	.	. .	3
Arkansas	4	8	16	25	7	15	1	11
California	7	19	.	11	9	29	7	36
Colorado	1	1	1	2	2	6	.	8
Connecticut	1	9	3	20	13	18	9	25
Dakota	. .	. .		1	. .		. .	. .
Delaware	. .	3	. .	3	1	7	. .	2
District of Columbia	2	6	9	10	52	58	9	12
Florida	4	11	26	35	27	33	26	100
Georgia	16	27	38	60	42	62	19	65
Idaho	. .	1	.		.	. .		. .
Illinois	5	26	24	63	63	10[illegible]	36	126
Indiana	4	13	17	40	10	34	11	67
*Iowa	3	8	3	13	10	15	. .	38
Kansas	2	2	3	9	4	9	3	26
Kentucky	14	36	21	51	49	64	11	44
Louisiana	374	507	149	178	268	299	106	291
Maine	. .	2	.	2	. .	6	.	9
Maryland	14	31	15	24	36	46	16	64
Massachusetts	2	18	7	17	6	9	3	31
Michigan	1	6	3	8	13	31	7	33
Minnesota	1	3	8	12	7	13	2	38
Mississippi	34	48	47	61	19	29	2	22
Montana	. .	. .	. .	. .	. .	. .	. .	1
*Indian Territory		. .	. .	. .	. .	. .	. .	3
Missouri	88	166	33	59	180	200	57	100
Nebraska	1	1	. .	4	. .	6	3	16
Nevada	. .	. .	. .	2	. .	.	. .	. .
New Hampshire	. .	1	.	8		1	. .	3
New Jersey	6	19	16	35	68	80	38	94
New Mexico	.	1	. .	3	.	2	. .	. .
New York	58	112	14	50	99	146	57	204
North Carolina	7	13	39	54	12	18	8	46
North Dakota	. .	.	. .	. .	. .	2	1	2
Ohio	7	40	10	43	45	77	10	86
Oklahoma	. .	. .	. .	. .	. .	. .	. .	. .
Oregon	. .	.	. .	2	. .	1	. .	1
Pennsylvania	9	60	21	70	35	74	21	168
Rhode Island	. .	3	3	6	2	5	2	9
South Carolina	29	42	26	31	106	114	67	99
South Dakota	.	. .	.	.	3	3	. .	2
Tennessee	25	46	52	84	35	58	6	47
Texas	183	212	212	256	126	157	11	136
Utah	. .	.			. .	1	1	4
Vermont	1	3	1	3	. .	. .	.	3
Virginia	43	65	43	61	47	65	15	66
Washington	. .	. .	. .	1	. .	.	. .	1
West Virginia	. .	1	2	7	4	9	. .	5
Wisconsin	1	5	6	10	12	21	7	28
Wyoming	. .	. .		.	. .	. .	. .	. .
50 Largest Cities	. .	. .	762	995	. .	. .	. .	. .
Total	975	1627	1716	2537	1491	2019	595	2259

* The figures for 1900 are furnished by the Bureau of the Census, Division of Vital Statistics, Washington, and are incomplete for the non-registration states, which are Alabama, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Indian Territory, Indiana, Iowa, Kansas Kentucky, Louisiana, Maryland, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

In another case the pulse, following an operation, remained above 100 without adequate explanation until tetanus supervened. Here may be mentioned that hyperpyrexia was noted in two cases of our series; this is supposed to be an ominous sign, but both instances ended in recovery.

Dr. D. C. Barber, Los Angeles, Cal., reports 10 cases to us as follows: 2 medical, 8 surgical; ages ranged from 2 to 50 years; 2 female, 8 male; all white; from 1890 to 1905; incubation period averaged 10 days; average duration 3 days; mortality 100 per cent; treatment consisted of opening wound and exposing it to the air; serum used freely in his later cases with no favorable results. Cocain introduced into the spinal canal relieved symptoms for hours in several cases, but without ultimate favorable effect.

In Case 24 Schleich's solution was used for the operation of intracranial injection with good results.

In Case 42, two days after injury, patient showed signs of irritability with unreasonable outbursts of anger, accompanied by jerky, spasmodic movements with a tendency to throw the head back, accompanied by nystagmus; radical operation on the hand was done at once and recovery followed with clearing up of the mental condition.

In Case 62 the patient was supposed to be insane from his remarkable distortions during the convulsions before the proper diagnosis was made.

In Case 74, recovery ensued after removal of a splinter that irritated the tibial nerve.

Dr. Chenoweth, Decatur, Ill., gives a partial record of 5 cases with 4 recoveries; no serum was used.

Dr. A. R. Edwards, Chicago, gives summary of his 8 cases as follows: average age 22 years; males; white; 7 from foot wounds, 1 from a horse kick in face; incubation not definite; average duration 3½ days; 5 recovered; 3 died, including the cephalic case; 5 to 7 bottles of serum were used in each case. The cephalic case had a very violent onset; it was associated with facial paralysis.

Table 4.—Seasonal Occurrence of Tetanus.

January	35	August	59
February	36	September	68
March	41	October	75
April	42	November	47
May	57	December	37
June	61		
July	129	Total	687

Table 5.—Table of Ages of Patients in Tetanus Cases.

3 to 15 days	13	Over 50	14
1 to 5 years	24		
5 to 10 years	99	Total	583
10 to 15 years	130	Unclassified	618
15 to 20 years	70		
20 to 25 years	75	Total	1,201
25 to 30 years	44	SEX OF PATIENTS.	
30 to 35 years	42	Males	778
35 to 40 years	37	Females	203
40 to 45 years	22		
45 to 50 years	13	Total	981

Case 99 of our series was one of several which occurred in the Maine General Hospital in 1904, most of whom died; an investigation showed the source of the epidemic to be catgut ligatures which had been used. When a new supply of catgut was employed the epidemic abated.

Case 103 was one of 6 cases that followed the use of catgut. There is a coincidence between the epidemics of Portland, Me., and Lewistown, Me., and Dr. Weber is preparing a report of the cases.

Dr. O. C. Shickler, New Ulm, Minn., reports 14 cases without details, all of which proved fatal; serum was used in 2 of the cases without benefit.

Dr. P. W. Rowland, Oxford, Miss., reports 2 fatal cases minus details; no serum used.

Case 144 presented marked delusions.

Dr. H. T. Bahnson, Winston-Salem, N. C., reports that during the Civil War he, with other prisoners, was put into a shelter for horses; all of the wounded who were placed therein, who did not succumb directly to their wounds, developed tetanus, and all of them, 17 in number, died.

In Case 172, plugging of the nose was done for epistaxis; tetanus finally developed, and the patient died.

Dr. J. W. Ward, Trenton, N. J., reports one case in a man who had been bitten by a dog; the diagnosis of hydrophobia was maintained in this case for several days.

Case 201 presented the following interesting condition: On the eighth day after starting the antitoxin a marked erythema developed, producing great irritation of patient's skin; with the onset of the rash the temperature went to 105 F., while delirium ensued with a well-marked typhoid state; in 2 days more the erythema changed to purpuric spots all over the body, completely obscuring the normal appearance of the skin; there were three successive groups of these purpuric spots in the next three weeks, the temperature meanwhile ranging from 103 to 105 F.; during this period, however, the tendency to convulsions ceased, but catarrhal nephritis now presented itself. In five weeks from the starting of the disease desquamation took place, the skin coming off in large scales; emaciation was extreme; at this time a slight enlargement of the right parotid gland developed and showed pus on aspiration; a week later a second swelling appeared on the lower jaw, which also yielded pus; this was later followed by suppuration of the sub-maxillary gland, and on this being drained the temperature came down to normal in two weeks. The patient eventually made a good recovery.

In Case 216 marked mental disturbance was noted for two months after recovery from convulsions, with perfect restoration at last.

Table 6.—Table of Infection Atria.

	Total cases.	Death.	Recovery.
Cephalic	53	29	24
Abortion and miscarriage	21	16	5
Confinement	11	8	3
Neonatorum	22	15	7
Hand injury, Fourth of July	60	39	21
Hand fractures and dislocations	10	2	8
Hand crushed by machinery	29	19	10
Hand contused, lacerated or punctured	117	44	73
Hand, splinter in finger or hand	10	5	5
Arm, dislocation or fracture	19	16	3
Arm, contused, lacerated or incised	14	6	8
Arm, gunshot (not Fourth of July)	35	17	18
Foot injury, Fourth of July	9	5	4
Foot, contused, lacerated or incised	126	63	63
Foot, nail	106	54	52
Foot, splinter	36	13	23
Leg, fractures or dislocations	18	15	3
Leg, contused, lacerated or incised	32	15	17
Leg, gunshot (not Fourth of July)	17	8	9
Railroad accidents	6	1	5
Gunshot wounds of trunk	3	2	1
Burns of trunk	5	0	5
Burns of extremities	7	1	6
Bites and kicks	7	2	5
Leg ulcers (chronic)	3	2	1
Following operations. Enucleated eyeball	1	1	0
Following operations on rectum	6	4	2
Following operation. Leg amputation.	3	2	1
Following operations. Breast amputation	1	1	0
Following operations. Frost-bites amputation.	4	2	2
Following operations. Dividing finger tendons.	1	1	0
Following operations. Varicocele	1	1	0
Following operations. Herniotomy	2	2	0
Following operations. Appendectomy	2	1	1
Following operations. Laparotomy	7	6	1
Following operations. Perineorrhaphy	1	1	0
Following operations. Vaccination	33	24	9
Following hypodermics, morphin, quinin	4	4	0
Miscellaneous	21	10	11
Total	863	457	406

Upper extremity 296
Lower 341

In three additional cases marked desquamation similar to that of scarlet fever occurred, but serum had not been employed in these instances. In series of cases other than our own, urticaria and erythema after the use of antitoxin have been reported.

In three cases recorded the first symptom was pain referred to the diaphragm. In one instance 410 convulsions in 24 hours were counted by a competent nurse. Death took place on the second day and toward the close the convulsions were so frequent that an accurate count was impossible.

Case 239 was in a boy of 12, with vaccination sore, who played in a stable and washed the wound and dried it with dirty paper found there; recovery in 8 weeks, but stiffness remained 18 months.

Brown[8] has reported a moderate leucocytosis (14,000 per c.mm.) in one case which he observed. This symptom has not been mentioned by any of our correspondents and is not spoken of as a rule by authors of text-books. The leucocytosis is most probably due to the wounds that serve as infection atria. But the question naturally arises, may not the increase in the number of leucocytes observed be due in part at least to the tetanus infection? If the leucocytosis depends on the traumatic lesions that are premonitory to the tetanus alone, then its degree of severity must vary with the extent of the local inflammatory process.

Finally, most of the cases scrutinized by us presented the usual train of symptoms and all of them showed trismus; this symptom cleared up the diagnosis in several cases that were strongly supposed at the outset to be simple colds, grippe, muscular rheumatism, and the like. Our studies also indicate the high diagnostic importance of the constancy of the tonic contractions in tetanus, since in other conditions, which simulate this disease, as hysteria, uremia, and strychnin poisoning, the contractions are intermittent.

We have analyzed the incubation period of 858 recorded cases, which are here tabulated; this table also shows the relation of incubation to the mortality rate:

Table 7.—Table of Comparison.

Incubation to mortality.	Cases.	Recovery.	Death.
One day or less	23	14	9
Two days	21	13	8
Three days	29	10	19
Four days	39	14	25
Five days	82	29	53
Six days	57	16	41
Seven days	133	33	100
Eight Days	74	25	49
Nine Days	42	15	27
Ten days	88	56	32
Eleven days	23	9	14
Twelve days	35	18	17
Thirteen days	12	8	4
Fourteen days	59	39	20
Fifteen days	19	12	7
Over fifteen days	122	72	50
Totals	858	383	475

According to Table 7, it will be observed that 194, or 22.3 per cent. showed an incubation period of 5 days or less, with a mortality of 58.8 per cent. in these cases; 394 developed in from 5 to 10 days with a mortality of 63 per cent.; 148 gave an incubation of from 10 to 15 days with a death-rate of 42 per cent., and 98 cases developed in from 15 to 25 days with a mortality of 40 per cent.

Estimating the incubation according to the day of that period we found that those of greatest frequency were the fifth, with 82 cases; seventh, with 133 cases; eighth, with 74 cases, and the tenth with 88 cases. The mortality for all the cases that occurred within 10 days was 76.5 per cent., but rapidly decreased after that period had elapsed. In general, these results are in keeping with the incubation period usually given and the death-rate also corroborates previous statistics.

The period of incubation in vaccination tetanus seems to be longer than the above figures indicate, and the mortality is also higher, according to Willson.[9] Thus, "in 45 cases the period of incubation was over 14 days; in 21 it was 20 and over; in 1, 28 days, and in 6, 25 days or over."

DURATION OF THE DISEASE.

The duration of tetanus was given in 870 cases and these were also studied with reference to the mortality-rate, as shown by Table 8.

It will be observed that the highest mortality occurred on the seventh day, or in 86 cases; the second, 71 cases; the third, fourth and fifth days are rather constant, with about 50 deaths. From the tenth day gradually, and the fifteenth rapidly, the mortality decreased. Again of cases lasting 5 days or less, there were 338, with a mortality of 275 or 81.4 per cent.; in those giving a duration from 5 to 10 days, or 231 cases, 144 deaths occurred, or 63 per cent., and those lasting from 10 to 15 days, 91 cases with 27 deaths, or 30 per cent. Acute tetanus or that which developed within 10 days gave a total of 568 cases and a mortality of 74 per cent. On the other hand, 211 cases lasted over 15 days, with only 18 deaths, or 8.5 per cent. mortality.

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[8] Journal Alumni Association, Coll. P. & S., Baltimore, Vol. iv, No. 3.

[9] "An Analysis of Fifty-two Cases of Tetanus Following Vaccinia: With Reference to the Source of Infection," read before the Philadelphia County Medical Society, April 23, 1903; The Journal A. M. A., May 3-10, 1902.

TABLE 8.—TABLE OF COMPARISON.

Duration to Mortality.	Cases.	Recovery	Death.
Less than one day	7	1	6
One day	47	9	38
Two days	79	8	71
Three days	71	13	58
Four days	66	16	50
Five days	68	16	52
Six days	35	8	27
Seven days	86	30	56
Eight days	33	9	24
Nine days	25	9	16
Ten days	51	30	21
Ten to fifteen days	91	64	27
Fifteen to twenty days	46	41	5
Twenty days and over	165	152	13
Totals	870	406	464

TREATMENT.

The measures employed in the treatment of tetanus have been many and varied; they may be considered under two heads: (a) Local, and (b) General.

(a) *Local Measures.*—From our investigations there is uniform agreement that the immediate radical treatment of all wounds, in which there is ground for suspecting that tetanus may develop, is of the highest value. Many of the cases received the local carbolic acid treatment with more or less beneficial effect, and favorable results have been noticed by certain observers from the ice treatment of tetanus, which consists in immersing the part affected in ice with salt, or putting the patient in a very cold room. The most important method is to open freely the wounds in all directions under an anesthetic, as the chief danger is in the poison that occupies the bottom of any wound or part infected. Many of our correspondents have testified to the great efficiency of the dried serum used as a dusting powder after thorough incision and excision of the infected wounds.

(b) *General Measures.*—The serum treatment apart, certain other methods while not curative are decidedly beneficial and comforting to the patient. According to our responses, the chloral and bromid treatment has been used far oftener than any other. Calabar bean has numerous advocates and morphin has been much employed, but theoretically it should be used with caution and reserve on account of its inhibitory effect on the respiratory centers, as death in tetanus is usually by paralysis of respiration. Cocain used intraspinally gave temporary relief from the convulsions in one case but death finally occurred.

Antitoxin Treatment.—Much attention has been given to the serum treatment in recent times and quite as important as the immediate radical treatment of all wounds coupled with the local use of the dried serum, are prophylactic injections of antitoxin, preferably subcutaneously. As a means of prophylaxis, the serum has been fully tested both in America and abroad and there is uniform agreement that "antitoxin does protect" in every case. As a striking example of its efficacy, Scherck[10] gives the following report of results: "In 1903 there were 56 cases of Fourth of July injuries treated, with 16 deaths from tetanus resulting; in 1904, 37 accident cases were treated, every one of which was given prophylactic injections of serum, with the result that no cases of tetanus developed."

On the other hand, the present status of the serum question leaves no room for doubting that when given during a well-developed case of tetanus, antitoxin does not have any appreciable beneficial effect, neither the mortality being reduced nor recovery hastened thereby. Booth,[11] however, has quite recently reported three cases in which the serum was employed, all ending in recovery. Finally, as a prophylactic measure, it is practically perfect and should be used in every case of punctured, lacerated, or other wound in which there has been a suspicion of contact with tetanized matter.

DISCUSSION.

DR. L. L. MCARTHUR, Chicago, said that the diagnosis is made in the last stage usually after the spinal nerve elements have become seriously, if not fatally, invaded. If one waits until the sixth, seventh, eighth or ninth day to make a diagnosis, and then begins to note the cervical muscles stiffening, one is too late to use antitoxin successfully. During the past ten years, since the World's Fair in Chicago, it has been Dr. McArthur's practice to administer on the first, second and third day, prior even to the report of the bacteriologist, three successive inoculations with the antitetanic serum. In the cases in which this has been done tetanus has not developed. Although the cultivation of the tetanus organism is very difficult, the mere use of this serum can not do any harm and in a long series of cases in which tetanus might have been expected, Dr. McArthur said that the use of serum has prevented it.

DR. G. W. MCCASKEY, Fort Wayne, Ind., said that this condition resolves itself into a matter of treatment, as all know the cause, and the treatment should begin with the inspection of the wound. Subjecting a patient who has had a suspicious injury to antitetanic serum is hardly rational, as there is a better treatment, the immediate cleansing of the wound. The opening of the wound is always necessary and no further treatment need be instituted; particularly is antitetanic treatment unnecessary. It is purely a matter of infection and the condition should be treated like any other infection. Dr. McCaskey said that some time ago he used transfusion after depleting the patient pretty well by removing considerable blood, and the treatment proved to be good. Reports regarding therapeutic measures are speculative. Some cases will get well under any sort of treatment.

DR. WALSH, Erie, Pa., said that some one had declared it easy to prevent tetanus by closing the wound shortly after the accident. Dr. Walsh said that in an injury caused by a slight kick on the ankle he thoroughly cleansed the wound within an hour and then used pure carbolic acid. The wound healed within a week, but three weeks later the man developed tetanus and died.

DR. R. A. MCLEAN, San Francisco, said that it has been demonstrated that the tetanus toxin has its effect on the nerve cells of the spinal cord and that it reaches these cells only by way of the axis cylinder of such nerves. The toxin reaches the nerve itself immediately at the site of injury, and then reaches the motor nerves all over the body. The treatment resolves itself into getting the antitoxin in contact with the toxin, and it has very little effect until it is injected into a large vein, it being so quickly destroyed in the tissues. It appears to have been demonstrated that the proper thing to do is to expose the nerve trunk, puncture the medullary sheath with a fine needle, and inject directly into the nerve trunk, using sufficient antitoxin to swell the nerve up to three or four times its normal size; this should be repeated daily, and if necessary several times a day, as the effect is quickly destroyed. It acts as a block to the upward passage of the toxin along the nerve, but has no effect when used just under the skin. The local treatment should come last.

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[10] Therapeutic Gazette, Nov., 1904.

[11] Jour. Amer. Med. Assn., July 1, 1905, p. 42.

The toxin is being absorbed constantly from the wound, so that the nerve passages should be treated first and the wound afterward, as the antitoxin will be working in the meantime. In a bad case the antitoxin should be injected directly into the cord itself, to block the passage up the cord.

Dr. Anders said that the treatment consists in prophylactic injections of the serum and that the value of antitoxin is prophylactic rather than curative. Antitoxin does protect. It should be injected into the nerve trunk above the site of infection. Its value after the disease has developed is very doubtful, and in the majority of instances writers have reported negatively. Few claim recovery has occurred from the antitoxin injection. As the best treatment is prophylactic, it behooves us to endeavor to ascertain whether tetanus is likely to develop or not. In all wounds involving the deeper connective tissues prophylactic inoculations should be made. Dr. Anders repeated that in their paper mention was made of certain symptoms which are followed by attacks of tetanus, such as increased pulse rate, without any other assignable cause; peculiar nerve irritation, etc. These things should be very carefully noted and further investigation made to ascertain whether or not they have assumed diagnostic importance. That tetanus may be prevented but not cured seems to be the present opinion. As to other forms of treatment, the less said the better. The use locally of dried serum has been followed by almost uniformly good results, but surgeons are better acquainted with this matter than physicians.

SPLANCHNOPTOSIS FROM A SURGICAL STANDPOINT.*

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MINNEAPOLIS.

Gynecology sprang into existence as an offshoot from medicine to meet the demands of suffering womankind for more successful treatment of a train of symptoms, presumably due to disturbed conditions of the pelvic organs. Gynecologists first learned that a certain number of these symptoms could be relieved by replacing misplaced pelvic organs and by supporting them through mechanical means, but they soon learned that this relief was only temporary, and that better and more permanent relief could be obtained by repairing the faulty natural supports by means of a surgical operation, which soon led to the abandonment of pessaries. They then learned that many patients referred to them by physicians, who had been cured of all abnormal pelvic conditions, still had a train of grave disabling symptoms unaccounted for. These unfortunate patients were referred back to the physician, who pronounced them hysteric or dyspeptic, and treated them accordingly and with unsatisfactory results; they were next turned over to the neurologists, who said that they were suffering from neurasthenia, which they defined as "a functional morbid condition of the nervous system, of which the underlying characteristics are weakness and excessive irritability."[1] Of the reflex influences believed to cause and keep up neurasthenia, disturbances of the stomach, intestines and liver were considered the most prominent. Their treatment of these cases was successful, so far as they relieved digestive disturbances only. Osler describes neurasthenia as a term invented by Beard to cover an ill-defined, motley group of symptoms which may be general or local, and speaks of it as a physical counterpart of insanity.

Surgeons have learned to cure many cases of chronic dyspepsia by removing gallstones and chronically inflamed appendices, and by curing gastric ulcers, and they are now encroaching on the domain of the neurologist by operating in some cases of neurasthenia. They are shortening up distended abdominal walls, fastening up prolapsed kidneys, livers, spleens, stomachs and intestines; they are, in short, treating splanchnoptosis by surgical means. Neurologists have founded their treatment on the theory that the splanchnoptosis found in these cases is secondary to the nervous condition, while the surgeon who is prone to believe that mechanical conditions can be relieved by mechanical means only is inclined to believe that the nervous condition is secondary to the ptosis.

The confusion and misapplication of terms used to designate ptosis of the abdominal viscera are so great that it is difficult, if not impossible, to give a correct résumé of the literature on this subject. The term splanchnoptosis, meaning as it does falling of viscera, should be used as a general term comprising gastroptosis, enteroptosis, nephroptosis, hepatoptosis and splenoptosis, but in literature it has frequently been applied to some one of these conditions, and, on the other hand, the terms enteroptosis and gastroptosis have frequently been used in a general sense.

Glenard,[2] in 1885, was the first to give a clear and distinct description of neurasthenia, and the term Glenard's disease is very commonly applied to this condition by French and English writers. He says that neurasthenia is a disease in which all organs are involved, and maintains that it never exists without digestive troubles, patent or concealed, and that methodical exploration will disclose the following four important signs: 1, Flaccidity of the abdominal walls with diminution of abdominal tension; 2, prolapse of the intestinal mass, enteroptosis, nephroptosis, hepatoptosis and splenoptosis; 3, enterostenosis; 4, gastroptosis and gastric atony. He says that enteroptosis can not exist without a host of disturbances, among which he mentions atresia of the gastrointestinal lumen at suspensory points, prolapse of the right flexure of the colon where it is poorly suspended, exclusion of the stomach from the rôle of supporting the transverse colon, and the vicious circle. He believes that the cycle of enteroptosis usually begins at the right flexure of the colon, because of its poor support and its location beneath the liver.

The causes of splanchnoptosis are not well understood. Many conflicting theories have been advanced, but no one of these will explain all cases. Steller[3] concludes that it is congenital, due to general congenital relaxation, particularly of ligaments. Tedeschi[4] reports a case of Glenard's disease in a male child 5 years old which was doubtless congenital. Ingalls[5] arrives at the conclusion "by exclusion," that trophic changes cause relaxation of ligaments and abdominal wall. Carion and Hallon[6] prove by experiment on the dog that section of both pneumogastrics cause complete atony and permanent dilatation of the stomach. Pawlow and Katschkowsky[7] show that cutting the vagi produces only temporary disturbance of gastric movements.

Keith,[8] in his Hunterian lectures on the "Nature and Anatomy of Enteroptosis," states that too much impor-

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[*] Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Dana: Text-Book on "Nervous Diseases," 1892.

[2] Glenard: Semaine Med., Paris, 1886, vol. vi, page 211. Bull. et Mem. Soc. Med. de Hop. de Paris. 1886. vol. 3, p. 888, 499-509.

[3] Steller: Archivs f. Verdauungskrankh, vol. ii, p. 185, 1896.

[4] Tedeschi: Arte med. Napole, 1902, vol. iv, pages 930-934.

[5] Ingalls: Annals of Surgery, 1902, vol. xxxv, pages 319-330.

[6] Carion and Hallon: La Semaine Medicale, Paris, Aug. 31, 1895.

[7] Pawlow and Katschokowsky: The Work of Digestive Glands, English translation. London, 1902. p. 175.

[8] Keith: London Lancet, March 7-14, 1903.

tance has been attached to peritoneal support of viscera. He believes that vitiated methods of respiration push the organs down and the weakened abdominal muscles can not get them back. He says that often where but one organ is supposed to be prolapsed, others will be found in this condition if sought for. He believes that ptosis of the liver and stomach are due to relaxation of the abdominal walls which maintain the visceral shelves on which they rest.

Traumatism is mentioned as a probable cause, but the disease is more common in women than in men, and the reverse would be true if traumatism were a frequent cause. The wearing of corsets is mentioned by many as a cause, but the most popular palliative treatment is abdominal supports. We can understand that the wearing of corsets and heavy skirts without shoulder support can act by directly dragging down the organs, and what is probably more important, by constant pressure they weaken the abdominal walls. It is illogical, however, to lay too much stress on this point, because ptosis occurs very frequently in men.

Pregnancy is doubtless a potent causative factor in some cases, but it is common in women who have not borne children. Max Einhorn[9] says that visceral ptosis is most frequently caused by states of inanition, no matter of what origin, and that a high degree of long-continued subnutrition alone is sufficient to cause marked enteroptosis and cardioptosis.

The symptoms of splanchnoptosis vary according to which organ or organs are most affected, but in a general way they are those of neurasthenia. The patient is more or less an invalid, suffering from general ill health, and mental depression. She is comfortable in the recumbent position only. She has a sense of dragging and weight, and suffers from constant weariness. Her stomach burns and vomiting is a frequent symptom. She has pain, anorexia and the full complement of dyspeptic symptoms. She becomes anemic and suffers from obstinate constipation, alternating with diarrhea. Her stomach and bowels are constantly distended with gas, and she is troubled with eructations. She has pressure on the uterus and bladder. Her epigastrium is tender, and she suffers from occasional colics or gastric crises.

A patient suffering from this train of symptoms should never be pronounced dyspeptic, hysteric or neurasthenic, and be sent away with a prescription without having a most careful physical examination made.

The diagnosis of ptosis of the various abdominal organs is usually easily made by percussion and palpation, because they usually occur in thin persons, and the flabby abdominal wall, which is so prominent a feature of this condition, enables the examiner to pass his fingers well down around the various organs. Prolapsed kidneys and stomachs and the means for their detection are so familiar to all that it is only necessary to mention them. The flabby abdominal wall, prominent below and flat above, through which can be felt the prolapsed and distended transverse colon, render a diagnosis of enteroptosis comparatively easy.

Although the liver is the largest and heaviest organ involved in splanchnoptosis, it is the one which has attracted the least attention. Hepatoptosis is doubtless very much more frequently involved than we have heretofore believed, and when the liver does prolapse all the other organs must come with it because of their anatomic relations. Its margin can be readily detected below the costal margin and when normal in shape is easily recognized. Floating or misshapen lobes, which are quite common, may readily lead to mistaken diagnosis. The elongated right lobe may be mistaken for a kidney, distended gall bladder or a new growth. In several instances, when operating for gallstones in women, I have found a thin, sharp-edged right lobe extending well down toward the umbilicus, even when the organ was not prolapsed, which was due either to an abnormal shape or a rotation forward of the organ on its transverse axis. We are so accustomed to think of the liver as a right-sided organ that we are apt to forget that it extends well over to the left side. An enlarged or prolapsed left lobe has been frequently mistaken for a left floating kidney. Glenard called attention to the fact that the lower part of the umbilicus is often hidden in a fold of the skin, due to traction on the suspensory ligament by a prolapsed liver.

A prolapsed or floating spleen is easily detected by its shape and location.

Glenard said that splanchnoptosis is incurable, but he recommended medical treatment and the abdominal binder only. The abdominal binder still holds a prominent place in the treatment of this condition, just as the pessary did in gynecology, and it, like the pessary, is very liable to give way to surgery; not but that it is and always can be useful in some cases, but it is the tendency of our profession to go to extremes. Possibly it is necessary for us to go to extremes in this matter to ascertain just what can and what can not be accomplished by surgery. The fact that this work can be done almost without mortality gives us no license to operate indiscriminately, but it does entitle these sufferers to the help of surgery. It behooves us, however, to be ever on our guard lest we attribute undue importance to certain mechanical defects, because these defects often exist without causing symptoms. We must remember, too, that some well-marked cases of ptosis of various organs can be restored to their normal position by rest, abdominal support and proper feeding. Max Einhorn[10] reports a number of cases demonstrating this fact. He demonstrates that proper feeding, thus increasing the patients weight, is a most important factor. L. W. Atlee[11] reports a number of cases demonstrating that some patients can be entirely relieved by medical treatment even when they have suffered from crises and without the prolapsed organs having been restored to place.

When a patient comes to us with "this motley array of symptoms," we should not pick out some one offending organ and operate on it, but we should make a thorough diagnosis and do a complete operation. The relative frequency and importance of ptosis of the various organs depend entirely on the observer's viewpoint. When the time comes that the internist, the neurologist, the gynecologist, and the surgeon observe these cases from one broad viewpoint, we shall be in a position to accomplish the most good. The surgeon should not recommend operative treatment until intelligent medical treatment has been tried, for without this it is impossible for him to decide in a given case which is the more important, the neurasthenia or the splanchnoptosis, but when medical treatment has failed and mechanical defects obtain, it is his duty to operate regardless of causes. Even then he must not offer surgery as a panacea, because there is a possibility that the neurasthenia may continue after all mechanical defects have been repaired. We should not be discouraged because of the failure following halfway operations on single organs when several were involved. The more complete operations have shown very encouraging results, and until it has been demonstrated that complete operations fail to cure it is our duty to perform them, and halfway work should give place to thorough work.

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[9] Einhorn; New York Med. Journal, April 15, 1905.

[10] Einhorn: New York Med. Journal, April 5, 1905.

[11] Atlee: New York Med. Journal, April 5, 1905.

The surgery of splanchnoptosis must go through a process of evolution just as all other abdominal surgery has, but it is to be hoped that we can profit somewhat by past experiences. It is, perhaps, fortunate that most of the organs involved are vital, so they will not go through the same experiences that the long-suffering ovary has. The prolapsed kidney, because of its location outside the peritoneum and its easy detection, has given us our largest experience, and that experience is far from flattering, but when we remember that it has very commonly been operated on independent of other conditions which usually exist our failures are not to be wondered at.

Glenard[12] says that nephroptosis of the healthy kidney is found only in nervous dyspeptics with intestinal ptosis, and that the syndrome is digestive rather than nervous. He says that the painful gastric or abdominal crises usually attributed to the kidney are caused by the kidney only when it is diseased. They may occur when the kidney is healthy, and even when it is not movable, but they are then duodenal. He says that the left kidney is less frequently prolapsed, because it is bound to the spleen and the spleen to the diaphragm.

The various operations for nephropexy are so familiar to all that it is unnecessary to describe them. It should be remembered that operations on patients suffering from gastric crises due to a diseased, prolapsed kidney are not to be undertaken without most careful preparatory treatment, because they are liable to have suppression of urine after. Dietel's crisis, coming on, as it does, with severe abdominal pain, nausea, vomiting, collapse and sometimes very high temperature, may be mistaken for gallstone colic or other conditions with disastrous results.

A prolapsed or wandering spleen is not nearly so common as a prolapsed right kidney, but may accompany a left kidney in prolapse on account of their attachment. Its shape and intraperitoneal location are sufficient to enable the examiner to differentiate between it and the kidney. Splenectomy has been the usual treatment for splenoptosis, but this is an unwarranted operation if it can be securely anchored. Rydygier was the first to advocate splenopexy, but admitted that the operation was not certainly permanent. Bardenheuer performed a successful splenopexy by passing the spleen out through a slit in the peritoneum, anchoring it to the tenth rib and then closing the peritoneum.

As long as surgeons devote their whole attention to the shortening of suspensory ligaments for prolapsed abdominal organs they are sure to meet with a large percentage of failures, because these slender reduplications to the peritoneum were surely not intended by nature to bear the weight of these organs. The intra-abdominal condition has been aptly compared to hydrostatic pressure, with the liver, stomach and colon floating on top. The comparatively frail ligaments of the liver would not support that heavy organ very long were it not for the supporting air cushion below, but as long as this support from below is normal the ligaments are sufficient, just as the weight of the human body can be supported in water by a cord that would support only a small fraction of its weight in air. Schwerdt estimates that these ligaments support only about one-eighth of the weight of the organs.

Ever since the term neurasthenia has been used the train of dyspeptic symptoms usually referred to the stomach have borne a prominent part. It is a recognized fact that a prolapsed and dilated stomach is a very common condition in neurasthenic patients. Neurasthenia is believed to be sometimes due to absorption of toxic products from a dyspeptic stomach. It is still a moot point as to whether a prolapsed stomach or neurasthenia when found together is the primary condition, because each of these conditions may exist without the other, but this we do know that the cure of the prolapse will ofttimes cure the nervous condition, and this can be done only exceptionally without the aid of surgery.

Duret[13] of Lille, in 1896, was the first to operate for gastroptosis. He stitched the stomach to the abdominal wall.

Davis,[14] in 1897, stitched the lesser omentum to the peritoneum for gastroptosis, and supplemented this by shortening the mesentery for an accompanying enteroptosis.

Rovsing,[15] in 1899, reported three cases in which he stitched the stomach to the anterior abdominal wall with improvement. Nephropexy was also performed in these cases.

Bier,[16] in 1900, reported four successful cases in which he elevated the prolapsed stomach by plicating the gastrohepatic and gastrophrenic ligaments and fastening the pylorus to the abdominal wall.

Coffey,[17] in 1902, reported two cases in which he supported the stomach by sewing the greater omentum to the abdominal wall, and in 1904 he reported[18] additional cases. He attaches the omentum as it comes off from the greater curvature of the stomach to the abdominal wall an inch above the umbilicus. The stitches were of chromic gut and were placed about an inch from the stomach. He reports good results even when the stomach was dilated. In extreme cases of prolapse of the colon he recommends that the omentum be attached to the abdominal wall both above and below the colon.

Beyea,[19] in 1903, gave details of a new operation for gastroptosis, with a report of seven cases that he had had under observation for from seven months to three and one-half years after operation. In all of these patients the improvement had been most remarkable. Their dyspepsia and neurasthenia had been permanently cured. In a later article[20] he reported additional operations by himself and others, with good results. His operation is like Bier's, save that he does not attach the pylorus to the abdominal wall. He plicates the gastrohepatic and gastrophrenic ligaments by repeated transverse rows of chromic gut sutures.

Morris,[21] in 1902, contributed an article on the surgical treatment of ptosis. He recommended that sufficient peritoneum and transversalis fascia be removed to shorten up the relaxed abdominal wall, and that the recti be fastened together. He shortens the falciform and suspensory ligaments of the liver after scarifying them and irritating the opposing surfaces of the liver and diaphragm. In two cases he performed nephropexy at the same time. He attributes the ptosis to the relaxed abdominal wall, and believes his operation superior to Webster's, in which the recti are brought together extraperitoneally. He states that many of these patients have umbilical hernia, and attributes some of the symptoms to dragging on the vena cava. He hesitated to plicate the gastrohepatic omentum on account of the important anatomic structures contained in it.

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[12] Glenard: Bull. et Mem. Soc. Med. de Hop. de Paris, 1893, 3, s. x. 882.

[13] Duret: Rev. de Chirurg., 1896, p. 430.

[14] Davis: Western Med. Review, October, 1897, p. 291.

[15] Rovsing: Archiv. für Chirurg. vol lx, 1899, p. 812.

[16] Bier: Deutsche Zeitschrift für Chirurg., 1900, lvi, p. 374.

[17] Coffey: Philadelphia Med. Journal, Oct. 11, 1902.

[18] Coffey: Transac. Western Surg. and Gyn. Assn., 1904.

[19] Beyea: Philadelphia Med. Journal, Feb. 1903.

[20] Beyea: American Medicine, Oct. 8, 1904, p. 629.

[21] Morris: Medical News, June 28, 1902.

Lambotte,[22] in 1891, contributed a paper on the surgical treatment of enteroptosis, in which he reported four patients operated on successfully by attaching the splenic and hepatic flexures of the colon to the abdominal wall.

As a rule in gastroptosis, the pyloric end only is prolapsed. The fishhook stomach of Killing is due to nondescent of the duodenum and leads to obstruction, dilatation and atony of the organ. Gastroptosis may be accompanied by general dilatation or pyloric dilatation. When dilatation of the stomach exists without pyloric stenosis it is usually due to gastroptosis.

I am inclined to view this part of our subject from Morris' standpoint, because it is in those cases in which gastroptosis and enteroptosis are prominent features that the most relief can be afforded by abdominal bandages or support by adhesive plaster, as recommended by Rose.[23] Any operation in which a direct attachment of the stomach to the abdominal wall is made I believe to be bad surgery, because we have all been obliged to operate for the relief of gastric adhesions. The plication of the gastrohepatic and gastrosplenic omentum is theoretically good, but in my limited experience I have not been so fortunate as Beyea, because these frail tissues have failed to hold. In one case in which I thoroughly plicated the gastrocolic omentum for a prolapsed colon, I was obliged to reoperate in six weeks. In this case the transverse colon was constantly distended like a balloon and dropped to the very bottom of the pelvis. The patient was a confirmed invalid and suffered constant pain from gas in the colon. There was marked stenosis at the splenic flexure, which was held in almost its normal position. At my second operation I performed an anastomosis between the prolapsed colon and the sigmoid, with a most satisfactory result. The patient's gastroptosis and neurasthenia were cured. She gained twenty-five pounds in weight in a few weeks, and again assumed her duties as a farmer's wife.

The best operation for a dilated stomach, whether due primarily to ptosis or to pyloric stenosis is undoubtedly a gastroenterostomy, but when the dilatation is due to atony this operation is contraindicated.

Coffey's operation is open to serious objection theoretically, notwithstanding the author's favorable cases. The attachment of the omentum to the abdominal wall so closely resembles the epigastric omental hernias we have so often been obliged to operate for that I should fear it might produce the same symptoms.

Bilroth performed a partial hepatopexy in 1884, but Marchand performed the first complete operation in 1891.

In 1897 Ramsey[24] reported a case in which he performed fixation of the liver and both kidneys for Glenard's disease. The right and left kidneys were anchored at different times, but the symptoms were not relieved; he then anchored the prolapsed liver by shortening the round ligament with silk sutures and fastening it to the cartilage of the seventh rib. He rubbed the upper surface of the liver with gauze and then passed a double kangaroo-tendon suture through the liver two inches from its right border and fastened it to the parietes. The liver became firmly fixed, and the patient experienced complete relief.

In 1897 Terrier and Avery[25] contributed a valuable article on hepatoptosis, which was reviewed and added to by Binne[26] in 1898. They recommended abdominal support as palliative treatment, and, this failing, they recommend hepatopexy. They advised catgut or silk sutures through the substance of the liver and all layers of the abdominal wall. They conclude that the method of Depage is best. He operated on the relaxed abdominal wall at the same time he performed hepatopexy. They quote Lannelongue's results following complete hepatopexy. Of eleven cases, eight gave satisfactory results, two were uncertain and one died from peritonitis.

In 1902 Jonas[27] reported two cases in which he supported a floating liver successfully by attaching the gall bladder to the upper end of the wound after removing gallstones. Da Costa and Gibbons have also performed this operation.

Eliot,[28] in 1904, recommends that in cases of gastroptosis accompanied by hepatoptosis the liver be anchored firmly in place so that the underlying organs will be relieved of the superincumbent weight. He supports the liver by fastening the round ligament to the abdominal wall with chromic catgut stitches.

The anatomic peculiarities of the liver are such that surgeons have long been deterred from attacking it. Recent experiences, however, have taught us that our fears are groundless. In hepatoptosis the indications are to replace the organ and fix it there, and it has been demonstrated that hepatopexy is a safe and satisfactory operation. Coarse sutures of chromic catgut or kangaroo-tendon should be used, and it is better to use a goodly number of them so they will not cut through. The mattress suture is the best. A round, pointed, slightly curved needle should be passed through the liver about an inch and a half from its margin from below upward, then through a good bite of the soft parts underneath the costal cartilages, and then downward through the liver again so the knots can be tied below when the liver is held in place. All of the sutures should be passed before any are tied. The diaphragm has been perforated in this operation, but no harm has resulted. The slight hemorrhage following the introduction of the sutures stops when they are tied.

These are undesirable patients, because of their extremely stormy convalescence, but the immediate prognosis is good, and, while the sum total of our experience in the surgery of splanchnoptosis is too limited to enable us to draw definite conclusions as to end results, it is so far sufficiently encouraging to justify the belief that we may be able in future to restore to health and usefulness many who have heretofore been condemned to hopeless invalidism.

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[22] Lambotte: Presse Méd., Belge., 1891, Nos. 24, 25, 26.

[23] Rose: New York Med. Journal, May, 1900.

[24] Ramsay: British Med. Journal, May 8, 1897.

[25] Terrier and Avery: Rev. de Chir., August and September, 1897.

[26] Binne: Review and Comments on Terrier and Averys' article, Annals of Surgery, January, 1898.

[27] Jonas: Journal A. M. A., March 29, 1902.

[28] Eliot: Med. News, Nov. 12, 1904, p. 913.

DISCUSSION.

Dr. R. C. Coffey, Portland, Ore., expressed the belief that in the future the surgeon will be able to take many of the neurologist's cases, and to improve some of the nervous wrecks that have been made by the removal of various organs. The important question is as to how much depends on the natural supports of these organs. The general opinion is that there is something in intra-abdominal pressure, but this is a matter of speculation, and one cannot tell much about it. The only possible support is the peritoneal ligament. The connective tissue gives elasticity through the peritoneum. The suspensory ligaments of the liver will hold from five to fifteen times the weight of this organ. Dr. Coffey showed diagrams of the procedures in various cases and described the results. In one the uterus was not displaced but the kidneys were dragged down and the operation was done to anchor both kidneys. There was plication of the broad ligament. Five sutures were passed through the liver and fastened to the abdominal wall. This was two and a half years ago. The patient had been an invalid for six months, but Dr. Coffey reported that she is now a useful member of society. Two months ago the liver was found still in position. Dr. Coffey has had a large number of these cases, and Dr. Clark of Philadelphia has reported a number.

Dr. A. Ernest Gallant, New York, said that all the symptoms of which patients with dilated stomachs complain can be relieved by posture, but if the patient is put on her feet all the symptoms will return in a short time. From an experience covering twelve years he is thoroughly convinced that when these organs are sutured up they do not stay up. The construction of the clothes of the average woman is such that she has to tie them on around her waist, and there is no surgery that will overcome this force. That strain at the waist if anything is to be accomplished with or without surgery. Dr. Gallant takes advantage of posture in restoring the organs to their normal relations, and advises the use of a special corset which will relieve the tension at the waist. There is ample evidence of the success of this method from the fact that the stomach will bulge at the epigastrium.

Dr. B. B. Davis, Omaha, Neb., said that he has done a number of operations of this kind and some of the patients have been relieved and some have not. He knows of no surgical condition that gives him more of a feeling of helplessness than relaxed abdominal muscles and all the organs lower than they should be. If all the conditions under which the patients are laboring could be removed surgery might be successful, but the kidneys are down, the liver is down, the intestines are down, and in addition there is a very weak abdominal wall. These patients have the appearance of a pear; the abdomen is shaped like a pear with the base down. He has found that in some of them when he can anchor the liver and anchor the stomach, by using the lesser omentum and then elevating the mesentery in cases of this kind, in which he did a very extensive operation, he has been pleased with the result. In one case particularly, after the operation the woman was able to do her own housework. This he considers a good result. In addition to anchoring the organs a foreshortening of the abdominal wall should be produced. One must endeavor also to produce a better tone of the muscles.

Dr. Moore recently found it necessary to look up the question of prolapse of the liver due to traumatism. It was in the case of a suit brought against a corporation. He found that there were no cases on record of the liver being torn from its moorings by injury. The experiments on pigs, of course, are of very little value, as human beings do not travel like pigs, but the experiments demonstrate how the adhesions take place.

DUTY OF PHYSICIAN TO PATIENTS WITH PERINEAL LACERATIONS.*

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During my short experience as a practitioner of medicine few things have impressed me more than the great number of perineal lacerations in women, and no impression has been more profound than that made by the untold suffering endured and the physical and nervous wrecks found as a direct result of perineal lacerations, or of some of the numerous pathologic conditions attendant on or resulting from these conditions. Schroeder has shown that in primiparæ the fourchette is torn through in 61 per cent. of all cases; while in 34 per cent. of primiparæ and 9 per cent. of multiparæ the perineum is lacerated to a greater or less degree. The causes of these lacerations are variable, and the percentage of injuries may be somewhat decreased by judicious care in the management of labor, but with all possible care there will still occur a large percentage of injuries. Since we can not always prevent these injuries and because the correct position of a normal uterus, vagina, rectum, bladder and urethra depends greatly on the integrity of the pelvic floor, we should exercise the greatest possible care to restore these parts when lacerated as nearly as possible to the normal condition. The point which I wish to emphasize is the great tendency on the part of physicians in general to neglect the repair of these injuries.

The proper time for the repair of a torn perineum is immediately after delivery. The simple fact of a perineal tear being slight is not sufficient excuse for allowing the damage to go unremedied. When a laceration extends beyond the fourchette, the physician who fails to recognize its existence and to insist on its repair is guilty of gross neglect of duty. The patient and her friends may at first object to this procedure, but, as a rule, all objections can be removed by a simple and brief explanation of the existing condition, the necessary steps to be taken in repair, and the serious results that follow its neglect. The operation is so simple, and the results obtained so uniformly successful, that even the novice in surgery need have no fear of the outcome. The only instruments needed in an ordinary case are a curved needle set on a handle and a few strands of silkworm gut. No anesthetic is necessary, as the parts are already numb from the severe stretching and the pressure to which they have been subjected. If the patient is in an exhausted condition from a prolonged labor, or if the light is poor, the operation may be delayed for a brief period and the primary operation still done any time within the first twenty-four hours. If there is still some contraindication for disturbing the patient, an intermediate operation may be done at the end of five or six days by the use of a 10 per cent. cocain solution. No patient should be allowed to go on until a secondary operation is necessary to remedy the injury, for it is in those cases calling for secondary measures that the ill effects of perineal lacerations are seen, not on the pelvic organs alone, but on the general constitution of the patient.

The first evil effects observed as a result of the removal of perineal support is prolapse of the vagina, which is sometimes followed by prolapse of the rectum, with its resulting constipation and the consequent constitutional derangement. Occasionally inflammation and ulceration of the rectal pouch may be seen as a result of fecal accumulations. Following a rectocele or occuring simultaneously with it there may also be a cystocele, with inability entirely to empty the bladder; the decomposition of the residual urine frequently resulting in a very troublesome cystitis.

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* Read before the Marion County Medical Society, 1905.

The most important result following this injury to the pelvic floor is prolapse of the uterus, which, through dragging on the ovaries and tubes, results in more debilitated and neurasthenic conditions among women than at first would be imagined by a casual observer. What physician has not had patients apply to him for treatment, who complained of that characteristic backache, that indescribable weakness of the legs and feeling of pelvic weight or "bearing down," and that extremely prostrating headache to such a degree that her life is rendered almost useless. On physical examination, the patient is found to present most, or perhaps all, the conditions previously enumerated. When we reflect for a moment that with the expenditure of 15 or 20 minutes' time and a very small amount of trouble on the part of the physician immediately after the completion of labor, the patient might have been spared all these ills and their consequences, and her life instead of being that of a semi-invalid might have been one of health and vigor, it is clearly evident that the profession has not laid enough stress on the importance of the repair of perineal injuries.

Since the trend of modern medicine and surgery seems to be directed more toward the prevention than the cure of human ills, it seems fitting that perineal injuries should receive due consideration as a prophylactic measure against the ills that are sure to follow their neglect.

Special Article

IMMUNITY.

CHAPTER XX.

TETANUS.

In 1884 Carle and Rattone demonstrated the infectiousness of tetanus by inoculating the pus from an infected wound into rabbits; 11 out of the 12 inoculated rabbits died of tetanus. In 1885 the bacillus was discovered by Nicolaier, and Kitasato cultivated it artificially in 1889.

Characteristics of the Micro-organism.

The organism is rather long and slender (2 to 4 microns long, 0.3 to 0.5 microns broad), possesses many flagellæ and has a small amount of motility. It stains readily with the ordinary anilin dyes and by Gram's method. In young cultures isolated cells and threads predominate, but after a few days spore formation begins; eventually all the adult cells degenerate and the culture consists entirely of spores. The spores have a larger diameter than the bacillus, are situated at one end of the cell and give the latter the characteristic "drumstick" form. The organism is a strict anaërobe and is obtained in pure culture with some difficulty. Morphologically it is difficult to distinguish from the bacilli of malignant edema and symptomatic anthrax.

Habitat.

Few organisms are distributed more widely and generously than the bacillus of tetanus. It is most abundant in street dirt and in tilled ground which has been fertilized with manure. Nicolaier found it in twelve out of eighteen samples of earth. It is less abundant in timber land. Such a distribution is easily accounted for, since the bacillus seems normally to be an inhabitant of the intestinal tract of the horse, cow and sheep, and is often found in that of man and other animals. It occurs on dirty clothing and readily gains access to dwellings with dust in which it may be blown and carried about. Tetanus has developed in gunshot wounds in which dirty clothing was carried into the tissue, and several instances of house tetanus have been noted, i. e., cases in which several individuals in the same dwelling have contracted the disease following injury. The organism has been found even in sea water. Certain localities appear to be heavily infected. In certain tropical districts a large percentage of the new born die of tetanus neonatorum, and puerperal tetanus has prevailed alarmingly in Bombay. It has been suggested that the custom of bleaching the linen on the ground may be responsible for the prevalence of the disease in these localities, but the general lack of surgical precautions is probably of greater importance. The disease has decreased in these localities under aseptic practices. Tetanus has resulted from the injection of impure gelatin for hemostatic purposes. The ability of the bacillus to proliferate outside the animal body has not been determined. Some observers hold that it exists as a vegetative organism only in the intestinal tract of animals, but the possibility of proliferation in soil is by no means excluded, particularly since it is so often found in association with organisms which are known to favor its growth. When incrusted in solid material and accompanied by suitable saprophytes it may readily find the anaërobic conditions which are demanded for germination of the spores.

Resistance.

The spores are very resistant. In one instance they remained virulent for eleven years on a splinter of wood. They may be killed in six days by direct sunlight. In comparison with non-spore-forming organisms they are very resistant to antiseptics. Kitasato found that they were killed in five minutes by steam, in fifteen hours by 5 per cent. carbolic acid, in two hours by 5 per cent. carbolic acid to which 0.5 per cent. of hydrochloric acid was added, in three hours by 1/1000 corrosive sublimate and in thirty minutes by the same solution to which 0.5 per cent. hydrochloric acid had been added.

Pathogenesis.

Tetanus is conspicuously a wound infection and that it develops so frequently from wounds which are contaminated with earth is readily understood from the distribution of the organisms as cited above. Considering, however, the great number of such wounds and the prevalence of the bacillus, the rarity of the disease is remarkable. In explanation of this fact investigations have shown that the organism is not a vigorous parasite, that it often demands special conditions for its development in the tissues. According to Vaillard and Rouget, the spores when washed free of toxin do not cause tetanus; they are taken up and destroyed by leucocytes. The bacillus, furthermore, is a strict anaërobe, demanding for its development a wound from which the air is largely excluded. It is well known clinically that penetrating wounds in which infected material is carried beneath the fasciæ, as the rusty nail wounds and those accompanied by deep lacerations such as wounds inflicted with blank cartridges, or those in which dirt and micro-organisms have been ground into the tissues, as in crushing injuries, are prone to be followed by tetanus.

Adjuvant Conditions.

Of equal importance is the presence of foreign matter and particularly of other micro-organisms. Relatively superficial wounds in which there is laceration of the tissue with consequent necrosis, as in wounds by toy pistols, even the paper-cap pistol, are well adapted for the development of tetanus if the germs were on the skin at the time of injury. Necrotic tissue favors the proliferation of the tetanus bacillus in two ways. In the first place it seals up the wound to a certain extent, and thus provides the requisite anaërobic condition; in the second place it would seem to prevent phagocytosis of the bacilli in some obscure way. It has been suggested that the strong, chemotactic relation which exists between necrotic material and leucocytes causes the latter to take up the dead tissue rather than the bacilli. That innocent foreign material may favor the development of tetanus in the presence of the microbes was shown by Vaillard and Rouget; tetanus would develop in the presence of an artificially produced hematoma or a subcutaneous fracture while in the absence of such predisposing factors the bacilli were taken up by phagocytes. It

Mixed Infections.

is probable that saprophytic organisms and the pus-producing cocci which are usually found in wounds contaminated with earth favor the development of tetanus. Some of them increase the virulence of the tetanus bacillus in culture media. Aërobic organisms may facilitate development of the bacilli by consuming local oxygen.

Our great harvest of tetanus following Fourth of July injuries is closely associated in the first place with the warm, dry season in which the bacilli are more readily disseminated with dust, and in the second place with the nature of the wound and mixed infections as described above.

Occasionally tetanus follows the simplest wounds, which may have healed entirely before symptoms develop. There is an advantage in keeping suspicious wounds exposed to the air. In "idiopathic tetanus" the seat of infection can not be determined. In the so-called "tetanus rheumaticus" which follows exposure to cold, the infection atrium is unknown; a latent infection which is stirred into activity by the reduction of resistance which often follows exposure may be present. Avirulent tetanus bacilli (?) were cultivated from the lungs of one such patient. Neither the bacillus nor the toxin penetrates the unbroken skin or mucous membrane. The toxin is digested by the gastric and pancreatic juices. Wounds of the mucous surfaces may constitute infection atria; tetanus has followed diphtheria and typhoid fever.

The pathogenic properties of the tetanus bacillus reside in its soluble toxins, of which two, tetanospasmin and tetanolysin, are known. The characteristic nervous phenomena of the infection depend on the action of the former, whereas the latter, a hemolytic toxin, is of minor importance. As in diphtheria, a systemic distribution of the bacilli is not necessary for the development of the disease, the toxin being produced by the organisms in the wound, whence it is carried to the nervous tissue by way of the lymphatics. Particularly in mixed infections tetanus bacilli may be carried to neighboring lymphatic glands and eventually reach the circulation; pure cultures have been obtained from the heart's blood in experimental work. The blood, on account of its content in oxygen, is thought to be unfavorable for the growth of the organism.

Period of Incubation.

The incubation period varies from two or three days to several weeks. In the statistics of Rose 20 per cent. of the cases showed symptoms in the first week, 45 per cent. in the second, and about 30 per cent. in the third or fourth weeks. The shorter the incubation period the more fatal the disease. In the statistics cited the mortality with short incubation was 91 per cent.; when the incubation period was moderate it was 81.3 per cent., and when prolonged, 52.9 per cent. The nearer the infection atrium is to the central nervous system the shorter is the incubation period; "head tetanus" develops quickly.

Tetanospasmin.

Tetanus toxin (tetanospasmin) has a very strong affinity for the nervous tissue of susceptible animals. This may be demonstrated in test-tube experiments in which the toxin is mixed with an emulsion of the nervous tissue; the nervous tissue neutralizes the toxin more or less completely, as determined by subsequent inoculations of the mixture (Wasserman's experiment). It is held by certain authorities that the toxin attacks only the nervous tissue in man; in some of the lower animals, however, various organs, especially the liver, have an affinity for the toxin.

The method by which tetanus toxin reaches the central nervous system has been the subject of much speculation and experimentation. Recent observations by Marie and Morax and by Ransom and Meyer show with a great degree of probability that it is absorbed by the end organs of the motor nerves and from there passes to the ganglionic cells through the axis cylinders. This absorption takes place very quickly; when the toxin is given intravenously it disappears from the blood in the course of minutes. It has been found in the nerves within an hour and a half after subcutaneous injection. Its further transmission centrally occupies more time and, indeed, the investigators mentioned explain the rather long incubation period of the disease on the basis of the time required for this transmission. The brief incubation period in "head tetanus," accordingly, would depend on the short distance the toxin is obliged to travel to reach the ganglionic cells.

Varieties of Tetanus.

Although the toxin appears not to be taken up by the sensory nerves, a painful form of the disease, tetanus dolorosa (Meyer), may be produced experimentally by injecting the toxin into the posterior roots of the spinal nerves. Roux caused "cerebral tetanus" by introducing the toxin into the cerebral tissue; the condition is characterized by absence of contractures. "Local tetanus," in which the muscles in the vicinity of infection or inoculation are involved in contractures, is the first symptom of tetanus in experiment animals; it rarely occurs in man except in head tetanus. The phenomenon depends on the fact that the toxin, being transmitted through the motor nerves, reaches first the ganglionic cells which correspond to the infected area.

Just before death the toxin has been demonstrated in the blood of man by injecting some of the serum into mice. Its excretion in the urine is questionable. Tetanus produces no characteristic anatomic changes although degenerative lesions in the ganglionic cells occur. Death usually occurs from asphyxia caused by contractions of the diaphragm, or muscles of the glottis, or from cardiac failure. In some instances the blood has been found more or less laked because of the action of the tetanolysin.

Natural Immunity in Man.

According to Metchnikoff, the only natural immunity which man possesses to tetanus is leucocytic and this may be sufficient to protect under favorable conditions. The observations of Vaillard and Rouget support this claim. Susceptibility depends not only on the presence of suitable receptors in the nervous tissue, but also on the degree of affinity which exists between these receptors and the toxin. In man and some animals this affinity is very great, whereas in fowls it is weak and an enormous amount of toxin is required to cause tetanus. A further proof of this weak affinity in non-susceptible animals rests in the fact that the toxin when injected into the blood remains unabsorbed for a long time, whereas in susceptible animals it disappears very quickly. As indicated in Chapter XVIII, the presence of suitable receptors in less vital organs may be a cause of natural resistance. Acquired immunity depends on the presence of antitoxin in the circulation.

Value of Antitoxin.

Tetanus antitoxin is a thorough prophylactic. This fact has been heralded so extensively in recent years that there can be little excuse for ignorance on the part of any physician. At the same time, the returns from the "Fourth" show that the principle is not yet deeply imbedded in the medical mind. It is quite certain that a large percentage of these fatalities could be prevented by two injections of antitetanic serum, one at the time of injury and a second from five to eight days later. An epidemic of puerperal tetanus in an obstetric ward in Prague was checked by prophylactic injections of the antitoxin. In a certain section of France 4,000 horses, with injuries commonly followed by tetanus, received antitoxin and none developed the disease.

No degree of efficacy on the part of the antitoxin, however, justifies disregard of the surgical care which the wound demands. From the facts cited it is clear that thorough and frequent disinfection of the wound, free drainage, the removal of all foreign and necrotic material, and the access of air are measures of eminent importance. Punctured wounds should be opened up. Antitoxin, preferably as a powder, may be used in the wound, and the serum infiltrated into the adjacent tissue.

The principles which apparently underly the ill success of the antitoxin as a curative agent were treated of in Chapter XVIII. Its administration as early as possible after symptoms have appeared is demanded. After symptoms have existed more than thirty hours Behring maintains that there is no hope of cure by the subcutaneous route. Inasmuch as forty hours or more are required for complete absorption from the subcutaneous tissue, intravascular injection of at least the first dose would seem to be indicated. Yet by neither of these methods is the most essential end accomplished, for the antitoxin does not reach the nerves nor can it be recognized in the cerebrospinal fluid in conspicuous quantities. The most that such injections accomplish is the neutralization of the circulating toxin, that which is not yet on its way to the central nervous system through the motor nerves. It is, of course, important to neutralize the circulating toxin and it must be done quickly, for in the course of a few hours the fatal quantity of toxin may have been absorbed; "a dose of antitoxin which would save in the morning may be without effect in the evening."

Method of Using the Antitoxin.

At the same time it is of greater immediate importance to neutralize that which has been already taken up by the nervous tissue, and if possible to tear away some of the toxin already bound by the ganglionic cells. To accomplish this object, or to attempt it, special procedures are demanded. We may then consider the antitoxic treatment as follows:

First: The neutralization of the toxin which has already been absorbed by the peripheral nerves and spinal cord at a point as near the vital centers as possible. This involves surgical exposure of the large nerves of the part as near the trunk as possible and their infiltration with antitoxin (Ransom and Meyer), and in desperate cases the infiltration of the antitoxin into the spinal cord in the vicinity of the medullary centers. From five to fifteen minims may be injected into the nerve trunks at a sitting, and the operation may be repeated on subsequent days; the needle should be partially withdrawn and reinserted in different directions during the injection. Rogers[1] recommends tying loose ligatures around the nerves after the operation so that they may be readily drawn up and identified for further injections. In order to reach the medulla the intracerebral method of Roux or that of Rogers may be utilized. Kocher has devised a technic for the intracerebral injections. Anterior to the parieto-frontal suture and to one side of the median line the scalp is prepared, and a hole drilled through the skin and skull, having its direction toward the foramen magnum. By means of a long needle, the ventricle is penetrated and the serum, after injection, finds its way to the fourth ventricle to the imperiled respiratory and cardiac centers; 10 c.c. may be injected. Rogers seeks to accomplish the same end by a different technic. He introduces the needle between the sixth and seventh cervical vertebræ, punctures the cord deeply, and injects from 20 to 30 minims at a sitting. Although there is danger of intraspinal hemorrhage in the procedure, no ill effects were noted. It has been recommended also that the cerebrospinal fluid be withdrawn by means of lumbar puncture and substituted by antitoxin. Some physicians who have used this method report favorable results.

Second: The neutralization of all toxin which is not yet bound by the nervous tissue or absorbed by the motor nerves. This demands the infiltration of the wound and surrounding tissue with the antitoxin, and injection of a sufficient amount of the serum into the circulation in order that circulating toxin may be neutralized. The intraneural, intraspinal or intracerebral injections should always be supplemented by subcutaneous or intravascular injections. The first dose should be given intravenously, whereas subsequent injections may be given subcutaneously. The injections should always be repeated.

Standardization of Antitoxin.

Unfortunately, tetanus antitoxin is not standardized by American manufacturers and dosage can not be controlled with any accuracy. Although standardization can not be accomplished with the same degree of accuracy as in the case of diphtheria antitoxin, its approximate value can be determined (within 5 or 6 per cent.), which is sufficient for practical purposes. The antitetanic serums of Behring, Tizzoni and the Pasteur Institute are all standardized, but on somewhat different bases. Behring advises the administration of 20 units of his serum for prophylactic purposes, and 100 units as the "simple" curative dose when given soon after the development of symptoms.

Not less than 10 c.c. of American serum should be given for prophylaxis, and the dose should be repeated. No definite limits can be given as to the amount which may reasonably be given for curative purposes. Ten cubic centimeters given intravenously at once, and an equal amount subcutaneously on subsequent days, would seem to be sufficient to neutralize the unbound toxin if the serum has reasonable strength. Standardized serums certainly are to be preferred.

Agglutination has no practical significance for diagnostic purposes. An agglutinating power has been noted in the serum on the eighth day. Agglutinins may be produced by immunizing animals (rabbits) either with the bacilli or the toxin. In the latter case the formation of the agglutinin is due to the presence of agglutinogenic receptors in the toxin solution.

New Instrument

AN IMPROVED NEEDLE HOLDER.

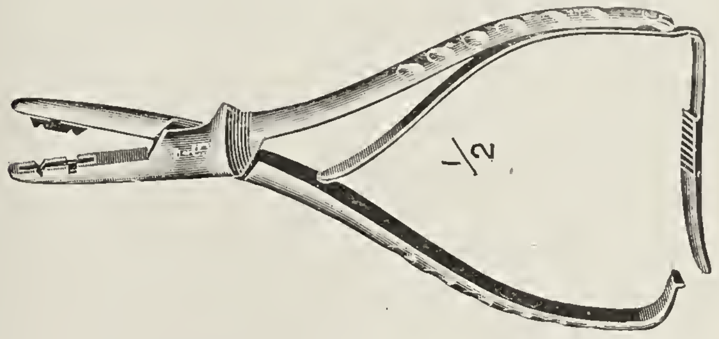
NORMAN BARNESBY, M.D.

NEW YORK CITY.

The needle holders now on the market are by no means perfect and, while I understand fully that my new device will be criticised, I feel that some members of the profession will appreciate its advantages and use it in preference to any previous instruments.

A matter of common complaint is that the holders known as the "Harris," "Emmett," "improved Russian," "Ferguson," "Halstead," "Hagedorn," "Byford," "Henchett," "Whiting," "Rhenier," "Abbe," do not come up to expectations and that great annoyance is caused during their use. Some of the above holders are useful for certain needles, but not one can be relied on to hold properly every kind of needle.

The needle holders which lock with a firm grasp and unlock when more pressure is used are very poor. I have a number of times broken needles, while they were in the tissues, by trying to unlock the holders, which is very unpleasant.



The accompanying cut shows my holder. Its advantages are:

1. It can be used with or without the clasp.
2. The fine ratchet-like clasp assures gradual pressure on needles, absolutely preventing them, no matter how fine, from breaking.
3. Hagedorn or any other kind of needle can be used in the V and square notch, while the two V notches are perfectly adapted to Hagedorn's.
4. Near the top of the handle there is a flange which is used as a support for thumb or finger. During the insertion of a needle, if the instrument and hand are wet, this flange will be found of great assistance in preventing the holder from slipping and will insure a firm hold.

Medicine and morals are inextricably intertwined. The immoral physician is foredoomed to failure. Let this axiom be clearly sounded from every chair in every medical college in the country. Whoever would be a successful physician must be a teacher and practitioner of morality—not necessarily by word of mouth—there are already too many such moralists—but by influence and conduct. He must persistently and consistently frown on immorality, because immorality *per se* is a powerful—perhaps, the most powerful—etiologic factor in a pathologic condition of mind and body which is pledged to combat and uproot.—*Medical Standard.*

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[1] "The Treatment of Tetatnus by Intraneural and Intraspinal Injections of Antitoxin," Rogers. The Journal, July 1, 1905.

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SATURDAY, JULY 29, 1905.

ACTION OF COPPER AND ITS SALTS ON ORGANISMS.

Last year Drs. Moore and Kellerman[1] of the Bureau of Plant Industry, U. S. Department of Agriculture, made the important discovery that copper and its salts in very high dilutions are very efficient in killing green algæ and also various kinds of bacteria. Since that time a large amount of work has been done, especially in relation to water supplies, in order to test the accuracy of their claims and in practically every instance their results have been substantiated. Last summer in New York City, the ponds in the parks were treated with copper sulphate by rowing a boat from which bags of the salt were suspended in the water. The small amount of copper thus passing into solution was found very efficient in removing the foul smelling green scum which collects in the ponds, without interefering in any way with the growth of the higher desirable plants.

It has also been shown that certain kinds of bacteria, particularly those of the intestinal tract, are especially sensitive to copper and its salts. This fact indicates the significance of this discovery to sanitary science and to engineering problems concerned with water supplies.

Recently Pennington, Gildersleeve and Stewart[2] of Philadelphia have published reports of their investigations on the bactericidal action of copper and its compounds, especially with reference to the typhoid-colon group. From these studies, we learn that typhoid bacilli are very sensitive to extremely small amounts of copper, 1 part of the sulphate in 2,000,000 parts of water being sufficient to kill them in 10 hours. The *B. coli communis* and *B. dysenteriæ* are slightly more resistant. Of the copper salts, the sulphate has the greatest bactericidal action, this being due probably to its higher degree of dissociation. Solutions of colloidal copper, by which is meant copper dissolved from a bright copper surface when placed in water, are also found to be very efficient, even more so than the salts. Stewart found, for instance, that in a one-liter copper vessel 1 part of copper to 4,000,000 parts of water was dissolved in three hours and this amount of copper was sufficient to kill the added typhoid organisms in from one and three-quarters to two and one-half hours. Therefore, in a typhoid epidemic it would seem that water could be made safe by allowing it to stand for three hours in a copper vessel whose inner surface was polished. There is no evidence to indicate that copper in such amounts would have any effect whatever when taken into the human system.

Water in reservoirs easily can be made safe by such treatment with copper. As Jackson[3] reported before the New York section of the American Chemical Society, the sulphate in dilution 1-8,000,000 administered once or twice a year is sufficient to prevent all trouble from microscopic growths, and this dilution is so great that in order to obtain a medicinal dose it would be necessary to drink 40 gallons a day. If this method can be applied successfully to the sources of water supply certainly a very desirable result would be obtained.

Attention should be called to the fact, as Gildersleeve has pointed out, that sanitarians who are interested in this work do not advocate its use to the exclusion of other methods, such as filtration; but it may be a valuable method to use in conjunction with these if for any reason they may at any time become inefficient. Or the methods may be combined during periods of typhoid epidemics.

Perhaps a word should be said about the possibility of chronic poisoning from copper used in this way. Apparently at present insufficient evidence exists from which to draw any reliable conclusions with respect to this point, and it may require careful observations extending over a long period of time to settle this question. In the meantime the possibility should be kept in mind and proper precautions taken.

PRESIDENT ROOSEVELT ON THE PHYSICIAN.

President Roosevelt's address before the Associated Physicians of Long Island will bear more detailed comment than we gave to it last week. What he said of the medical profession is a decided tribute. He said that "the condition precedent on success in digging the Panama canal is having the proper type of medical work as a preliminary." He spoke of the physician's character in a most appreciative way. He said among other things: "The doctor has on the one hand to be the most thoroughly educated man in applied science that there is in the country, and on the other hand the doctor gradually becomes the closest friend to more different people than would be possible in any other profession." At considerable length, the President showed that he appreciates the duties, difficulties and opportunities of the scientific physician.

Referring to the task at Panama, he indicated the dependence that must be placed on medical science to make the conditions of work such that the engineers can accomplish their task. We echo his confidence that the conditions hostile to health are going to be controlled by the sanitary authorities. The alarmist stories brought by a few panic stricken individuals must be received at their true value. The fact is that the rainy season is never a favorable one for sanitary work in the tropics and, further, we are still suffering to some extent, it is probable, from the dilatory and red tape methods which were denounced by Dr. Reed. If Dr. Gorgas could have had full swing from the first we may safely assume that matters would be better now, as we feel sure they will be soon. There will be difficulty, especially on the Atlantic side of the isthmus, in controlling the mosquito pest, but what has been done in other tropical countries, the confederated Malay states for example, can be accomplished even there. We feel satisfied that the sanitary authorities on the isthmus will do their full duty if untrammelled and that the health results will be commensurate.

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[1] Bull. No. 64, Bureau of Plant Industry.

[2] Amer. Jour. Med. Sciences, May, 1905.

[3] Science, Dec. 9, 1904.

In expressing his confidence in the ultimate results at Panama, the President recalled the splendid example of Cuba, and paid a well-earned tribute to the effective work there of Leonard Wood. In this connection his words of resentment at the criticism to which Wood has been subjected were keen. "There has been no meaner and more unpleasant manifestation in all our public history than the feelings of envy and jealousy manifested toward Wood." And then came a sentence pregnant with sad thought for the men of medicine—"and the foul assaults and attacks made on him, gentlemen, were largely because they grudged the fact that this admirable military officer should have been a doctor." It is to be feared that there is herein too much truth. Why a physician should be grudged military or civil success it is not easy to reason out, but the fact seems real. Perhaps it is a popular inheritance from past ages, when medicine was not a science and when physicians were enmeshed in superstition. To what else can such prejudice be laid? Certainly the educated medical man of the present affords no excuse for such a view of his efforts. However, we need not heed it. Constantly, as we improve ourselves in education and fitness, our position is advancing. The physician of the future again will be, in a rational way, the arbiter of men's fortunes. The very words of the President are a step forward and we should be grateful to him, not for seeing our plight, but for speaking loudly his dissent from the too-prevalent anti-medical prejudice. Surely, though slowly, we are moving forward, and for every aid are grateful. Not least among our friends and appreciators stands Theodore Roosevelt.

PREMONITORY STAGE OF BRIGHT'S DISEASE.

One of the most interesting developments in the modern knowledge of disease has been the recognition of the fact that many affections formerly considered local are really general affections, with local manifestations. While typhoid fever to a certain extent deserves the old name of enteric fever, because of the frequency with which ulcers are found in the intestines, a febrile affection due to the presence of the typhoid bacillus in the human system may run its course without any intestinal manifestations at all. This is particularly true in certain cases in which there seems to be a true typhoid process in the gall bladder without intestinal lesions. This same set of events may occur with the pneumococcus, which usually produces definite pulmonary pathologic conditions, but may cause only other organic symptoms. Even pneumonia itself does not depend for its prognosis so much on the pathologic condition in the lungs as on the effect produced on the rest of the system by the presence of the toxins of the pneumococcus in the circulation.

It is not surprising, then, to find that there is coming to be a definite acceptance of the idea that the nephritis of Bright's disease by no means constitutes the essence of the affection described by the great English clinician at the beginning of the nineteenth century, but that the kidney affection is only a local manifestation of a systemic condition which has existed for some time previously until an involvement of the kidneys has been produced. At the present time the diagnosis of tuberculosis has advanced to a stage where the presence of a pulmonary affection would scarcely have been suspected a few years ago. The so-called pre-tuberculous stage of the older writers is now recognized to have been really the incipiency of the lung affection. In recent years not a few clinicians have insisted that a preliminary stage of Bright's disease, in which a high-tension pulse and an overacting heart with emphasized second sounds are the principal symptoms, has been possible of recognition by the careful observer. There seems to be a growing persuasion that this so-called preliminary stage is really the initial condition of Bright's disease, in which, though there are no symptoms of nephritis, the stage of preparation for the kidney degeneration so sure to ensue, is already well under way.

This definite acceptance of the possibility of recognizing very early stages of serious affections constitutes the most hopeful element for their favorable treatment. When tuberculosis was recognized only at advanced stages, treatment was practically hopeless, and the disease came to be considered as almost inevitably fatal. If Bright's disease be recognized only when there are serious signs of kidney degeneration to be found in the urine, then the disease necessarily runs a fatal course. If, as is claimed, it can be definitely diagnosed or at least reasonably suspected at a much earlier stage, then treatment, as in the case of tuberculosis, will doubtless prove much more helpful. There is no doubt that the toxic materials which produce the condition of irritation that leads to the contraction of arterioles, and to the consequent raising of blood pressure, find their way into the system from the digestive tract. It is not surprising that it is particularly the organs which have terminal end arteries, the kidneys and the brain, together with the retina, which is after all practically a portion of the brain, that suffer most from this increased blood pressure and from the presence of toxins.

Absolute intestinal antisepsis is impossible, but there is no doubt but that great improvement in the matter of obnoxious intestinal flora can be brought about by attention to diet. In cases in which there is a distinct tendency to increase of blood pressure, and in which the patient complains of a tendency to palpitation evidently something more than nervous in origin, the suspicion of this preliminary stage of Bright's disease should be entertained and treatment undertaken with the definite idea of decreasing the irritative factors that are at work. It has been evident for some time that the kidney symptoms are ordinarily not the most important, especially in the beginning of the disease. Hence the mystery that has surrounded the prognosis of these cases. Men refused life insurance because of kidney symptoms, that apparently pointed to Bright's disease, live for twenty-five or thirty years in excellent health. On the other hand, men with no kidney symptoms, or with symptoms so slight that there is question at most of a little physiologic albuminuria, are accepted and die within a few years. It is evident that there is great possibility of very practical increase in our knowledge of Bright's disease in the study of these initial cases. The watchword of our generation in all the chronic affections must be the recognition and treatment of the preliminary stage of the affection.

MEDICAL DEFENSE AND MALPRACTICE INSURANCE.

It is stated in *The Western Underwriter* that the attorney-general of Minnesota has received from the Physicians' Defense Association of Minnesota a complaint against those casualty companies that write a defense policy which includes in its benefits reimbursement for damages, as well as for costs of defense. This point recently has been mentioned several times in our columns.[1] In opposition to the more liberal contracts, it is alleged that they in reality nullify all laws providing a penalty for malpractice, and that they enable those so inclined to conduct an illegal practice without fear of punishment. The question is of some importance, and a decision in the Minnesota case will be awaited with interest.

DO WE CODDLE THE HEART?

A London doctor has recently been giving a warning against coddling the heart. If properly quoted in the press dispatches, Dr. Goodhart (auspicious name) says that he knows of no symptoms of a weak heart and that the use of the term leads to a nervous dread from which recovery is difficult or to an enervating, luxurious life of idleness which causes results tending toward the end that it was intended to prevent. The idea of cardiac muscular deficiencies has been pretty well preached during the past few years. Although there is no doubt that the weak heart notion has been sometimes carried too far and that the expression may be occasionally misleading, it would require the testimony of many good authorities to oust it from the medical mind at the present time.

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[1] In this connection, see also a letter on the subject in the Correspondence Department of this issue.

THE DOSAGE OF DIPHTHERIA ANTITOXIN.

One who has followed the literature bearing on the use of diphtheria antitoxin must be struck by the divergence of opinion and practice characterizing the American and European authorities. In the United States great weight is attached to the potency of antidiphtheritic serum measured in specific antitoxin units, and among the producers of this remedial agent a sharp rivalry exists, with the object of obtaining the greatest possible potency in the least possible quantity of serum. This commercial strife for the production of extra-potent antitoxin, for which only an occasional horse can be found adaptable after a laborious and expensive process, and the premium placed on the antitoxin unit *per se*, have resulted in relatively high prices for the diphtheria remedy as prepared and marketed in the United States, and corresponding misunderstanding and dissatisfaction on the part of physicians, particularly those preferring to employ quantitatively larger doses of the serum. In Europe less stress is laid on the attainment of a superlative degree of concentration, and, while approximately the same number of antitoxin units are prescribed, a larger quantity of serum is administered. Whether the practice of our foreign confrères is sanctioned by scientific knowledge is difficult to determine, but it is certain that a reaction in favor of more massive doses of the diphtheria curative serum has begun in this country, seemingly based on the clinical experience of good observers. This tendency was strikingly in evidence during a lively discussion on the treatment of diphtheria at the meeting of the Ohio State Pediatric Society, in Columbus, May 9, 1905. More recently Louis Fischer[1] has recorded a similar opinion, based on his personal observation and on a study of the statistics of the Willard Parker Hospital. He recommends a dose of from 10 to 20 c.c. of serum, and uses one of medium potency. With these larger doses of antitoxin Fischer claims that the mortality is always lower than when smaller amounts are employed. At the bedside, therefore, the clinician has apparently learned what certain laboratory workers have long believed, viz., that there resides in the serum of the diphtheria-immunized horse, besides the specific antibody of diphtheria, some substance important from the curative standpoint; and for the proper effect of this substance, which apparently does not attain a high degree of concentration even in the antitoxic sera richest in the specific diphtheria antibody, a bulk of serum larger than that customarily employed in this country is required.

THE FATE OF PATHOGENIC BACTERIA IN BURIED CADAVERS.

In the prebacterial periods, more or less fear of infection from graveyards existed. Even to this day one occasionally hears the opinion expressed by medical men that burial underground as ordinarily performed is an insanitary method of disposal of the dead. While no disinfectant is equal to fire in prompt destruction of infectious material, yet all experimental and other investigations show conclusively that pathogenic microbes rapidly disappear as cadavers undergo decomposition after burial; furthermore, no evidence has been obtained to show that the numerous infectious organisms contained in dead bodies, human and animal, pass into the soil surrounding properly made graves in reasonably dry soil. Cholera and pest bacteria are not demonstrable after from seven to thirty days at the outside after burial in cadavers of patients who have died from either of these diseases. Typhoid bacilli are not found in bodies of typhoid fever patients buried for three months.[1] Tubercle bacilli may persist somewhat longer, and Schottelius claims to have demonstrated virulent tubercle bacilli in bodies buried between one and two years. Diphtheria bacilli, pyogenic organisms, tetanus and anthrax bacilli all have been found to disappear in from a few days to two months or so. The remains of rabid animals lose their infectious powers in from two to five weeks after burial. The only organisms that possibly might infect the adjacent earth in case of improper burial are anthrax bacilli and tetanus bacilli, which then would assume the spore forms. In this country, in which it is becoming more and more customary to inject dead human bodies with formalin solutions, it is probable that considerable direct destruction of bacteria is accomplished through the action of the formalin. As decomposition advances in cadavers, the pathogenic forms are crowded out by the saprophytes. Proper burial in ground suitable for the purpose, i. e., not swampy and draining directly into water supply, consequently can not be regarded as a procedure that merits condemnation because grossly insanitary.

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[1] New York Med. Jour., June 17, 1905.

YELLOW JACK ON AMERICAN SOIL.

An outbreak of yellow fever has occurred in New Orleans, chiefly among some Italian fruit handlers. Up to July 26 there had been 154 cases, with 34 deaths. It is with pleasure we record the fact that the local authorities and the United States Public Health and Marine-Hospital Service are working in perfect accord in their energetic efforts to stamp out the focus of infection, which appears to have slipped in quite unobserved from some Central American fruit steamer. At first all the cases were among Italians in the French quarter of the city, though on July 25 new cases were reported outside of the limits of the original outbreak. Of course the usual crop of quarantines has appeared among the gulf communities, but it is hoped that the rigors of former epidemics will not become necessary. An odd and wholly unprecedented feature of this outbreak is that Havana—once the fountain of all our yellow fever troubles—has instituted a quarantine against our own port of New Orleans. For the first time yellow fever on American soil will be fought on the basis of mosquito conveyance, and it is agreeable to learn that all the authorities concerned have harmoniously decided on this course. Windows, cisterns and wells are to be screened, and at every point the villainous stegomyia will meet unexpected difficulties in the struggle for existence. We hope that this epidemic may show that yellow fever in America, when it occasionally sneaks in, can be made a matter of houses, or at most of blocks, and that hereafter it will not be necessary to restrict travel and to create discomfort and suffering by interurban and interstate quarantines. Should this prove to be the case, this little epidemic will not be without good result. Finally, it is the devout wish of every physician that all medical men concerned in exterminating or in keeping out the disease will present a unanimous front to this enemy of humanity. In some former epidemics the more or less rancorous discussions among our fellow physicians have been of no service to medicine. Now that exact scientific knowledge of the etiology of yellow fever has been attained, there is less excuse for differences of opinion while the disease is present. Fortunately, too, the spirit of professional harmony has made itself felt during late years. We may therefore, in some professional pride, anticipate a prompt extermination of the disease without any waste of effort in detrimental discussion.

TRAINING NURSES BY MAIL.

Our attention has been called to an advertisement in the latest issue of a very respectable publication, the *Review of Reviews,* of the Chicago Correspondence School of Nursing. It is headed "Be a nurse. You can if you will"—that is, of course, by instruction by mail. If there is any occupation requiring careful practical teaching and daily experience with the exigencies that arise as the main part of the instruction, it is that of nursing. The practical part of the training is the main thing. No amount of merely theoretical knowledge can properly fit a person for such an occupation. It seems to us very much like a money-making scheme on the part of its promoters designed to capture the dollars of unsuspicious females. The diploma of a correspondence nursing school would be a very unsatisfactory credential to a physician seeking the aid of a trained nurse in the many exacting and perilous emergencies that arise in medical and surgical practice, and if this fact was generally appreciated the advertisement ought to bring very little business. We hope this will be the case.

Medical News

ILLINOIS.

Hospital Out of Debt.—A subscription of $1,925, made on July 2, together with other donations, has placed the Canton Public Hospital free from debt.

Lawn Fete for Hospital.—The lawn fete given July 20 by the auxiliary association of St. Francis Hospital, Evanston, netted more than $1,000 for the charity fund of the institution.

Post Hospital Enlarged.—Work has commenced on an addition to the post hospital at Fort Sheridan, which will cost $19,000 and will contain two wards for contagious diseases with a capacity of 36 beds.

Personal.—Dr. Frank H. Kimball, Rockford, was badly bruised in a runaway accident July 13.——Dr. Charles H. Starkel, Belleville, has been appointed chief surgeon of the Southern Railway Company's line between Louisville and St. Louis.——Dr. Edward C. Park, Flora, was knocked down by a carriage July 7 and slightly injured.

Chicago.

Personal.—Drs. Alfred Murray, Harry Kahn and Frederick C. Eggert sailed for Europe July 25.——Dr. Louis J. Pritzker has returned from abroad.——Dr. Gustave J. Bergener has returned from Paris.——Dr. Truman W. Brophy sailed for

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[1] Petri, Klein.

Europe July 25.——Dr. and Mrs. T. J. Robeson are spending a part of the summer at Fort Assinniboine, Mont.

Heat Causes Many Deaths.—As a result of the excessive heat of the first three days of last week the death rate for that period was the highest on record, equivalent to an annual mortality of 32.56 per 1,000.

Deaths of the Week.—During the week ending July 22 627 deaths were reported, 180 more than for the previous week and 89 more than for the corresponding week of 1904. Of these 188 were of infants less than a year old. Acute internal diseases caused 150 deaths; consumption 73; heat diseases, 57; violence, 47; pneumonia and Brights' disease, each 35, and sunstroke, 22.

Sanitaria for Babies.—Jackson Park Sanitarium for babies opened for the season July 14.——The Northwestern University Settlement at Augusta and Noble streets has opened accommodation for sick babies in the large, airy basement of the building, and in a tent pitched in front of the building, a trained nurse is in attendance, and the hospital is under the charge of Dr. William Butler.

INDIANA.

Incorporate Hospital.—The Joseph Eastman Hospital has been incorporated at Indianapolis, with a capital stock of $10,000, by Thomas B., Joseph Rilus, and Mary K. Eastman.

Hospital Dedicated.—The Reid Memorial Hospital, Richmond, erected at a cost of $80,000, of which Daniel G. Reid contributed $50,000 in memory of his wife and son, was dedicated July 27.

License Revoked.—The State Board of Medical Registration and Examination has revoked the license issued to Marie Sticler, Evansville, who is now serving a term of imprisonment for performing a criminal operation.

Conform to Standard.—The Fort Wayne College of Medicine has extended the term from seven to eight months to conform to the requirements of the American Medical College Association. Edward Mertz was elected professor of pharmacology; Dr. George W. McCaskey, professor of electrotherapeutics, and Dr. Alpheus P. Buchanan professor of dietetics.

Personal.—Dr. Irvin Lindenberger, resident physician at French Lick Springs, will move to Louisville about August 1. ——The office building and barn of Dr. John T. Freeland, Bedford, were damaged by fire to the extent of $600, July 11.—— Dr. John H. Hurty, secretary of the State Board of Health, has been awarded a medal and diploma for his exhibit at the Louisiana Purchase Exposition.——Dr. William C. Prough, Goodland, has been adjudged insane and committed to Longcliffe asylum.

LOUISIANA.

Sanitarium Opened.—The Baton Rouge Sanitarium, erected by local physicians, was opened July 12.

Personal.—Dr. George A. B. Hays, superintendent of the Louisiana State Insane Asylum, Jackson, has been tendered the superintendency of the Pineville Asylum near Alexandria.

Hospital Fund Grows.—The building fund of the New Orleans Eye, Ear, Nose and Throat Hospital has now passed the $50,000-mark. On July 9 the subscriptions amounted to $50,744.09.

Increase Subscription.—On behalf of his mother, sisters, brothers and himself. Charles Godchaux has increased his subscription of $50,000 for the building fund of the new Touro Infirmary. It has been decided to name the central pavilion the Leon Godchaux Memorial Pavilion.

The Yellow Fever Situation.—On July 25 at 10 p. m., it was officially announced by the Louisiana State Board of Health, that there had been 154 suspected cases of yellow fever and 34 deaths reported up to that time.——Mississippi has declared a rigid quarantine against Louisiana.——Texas denies passengers from New Orleans the privilege of passing through the state under any conditions.——New Orleans is being cleaned and disinfected and made mosquito-proof.—— Alabama has quarantined against Louisiana.——No fruit steamers less than six days out from Central American ports are to be allowed to land at New Orleans.——The state board has issued instructions that each suspicious case be reported and the isolated patient screened.——New Orleans has been quarantined from the rest of the state and business as well as travel is seriously interrupted. (See editorial.)

MARYLAND.

Baltimore.

Moale Left Large Estate.—The late Dr. William A. Moale left a personal estate of $250,000 besides a very large real estate amounting to several hundred thousand more. The whole is left in trust, the net income to be paid annually to his daughter.

Faculty Appointments.—The following appointments have been made at the University of Maryland School of Medicine: Daniel Base, Ph.D., professor of analytical chemistry; Arthur M. Shipley, M.D., associate professor of surgery; Summerfield B. Bond, M.D., clinical professor of genito-urinary diseases; James M. Craighill, M.D., Joseph E. Gichner, M.D., and A. Duvall Atkinson, M. D., clinical professors of medicine; Gordon Wilson, M.D., associate professor of clinical medicine; Richard Johnston, M.D., lecturer on diseases of nose and throat; Page Edmunds, M.D., instructor in genito-urinary diseases; Irving J. Spear, M.D., instructor in psychiatry; W. B. S. Levy, M.D., resident pathologist to the University Hospital.

Personal.—Dr. William S. Halstead received the honorary degree of Doctor of Laws at a special ceremony held at the University of Edinburgh July 22.——Dr. William Hewson Baltzell was received in audience by the Pope July 9. He will spend August in Switzerland.——E. B. Quillen has resigned the position of pathologist at University Hospital to accept an appointment as assistant surgeon in charge of the Atlantic Coast Line R. R. Hospital at Rocky Mount, N. C.——Dr. L. Wardlaw Miles has been appointed instructor in English in Princeton University.——Dr. C. W. McElfresh has returned from a visit to Rochester, Minn.——Dr. J. Williams Lord will spend the remainder of the summer at Lake George.——Dr. Guy L. Hunner is at Fisk Cottage, Chesterfield, N. H.——Dr. William S. Love is at Atlantic City.——Dr. Thomas Sudler, coroner of the Eastern district, who was overcome by the heat last week, is recovering.——Dr. I. R. Trimble is at Cape May.——Dr. William E. Moseley sailed for Bremen July 19. ——Dr. H. Clinton McSherry has lately returned to Baltimore after a prolonged residence in Switzerland and Southern France. He was operated on successfully for glaucoma before leaving Europe.

MINNESOTA.

Honor President-elect Mayo.—The physicians of Rochester, Minn., and the business men and other prominent citizens of that city and vicinity were highly gratified at the honor shown their fellow citizen, Dr. William J. Mayo, in his election as president-elect of the American Medical Association at the Portland session, July 11-14, 1905. A portrait of Dr. Mayo and a brief sketch of his life appeared in The Journal July 22, page 247. At a banquet in Rochester, Minn., tendered by the Commercial Club and the Merchants' Exchange on the evening of July 24, Dr. Mayo was the recipient of a handsome loving cup, a testimonial from neighbors and friends. The visiting physicians who happened at the time to be in attendance on the clinic, realizing the close association of Dr. Charles H. Mayo with his brother, took advantage of the occasion to present the former an elegant cut glass vase. Addresses were made by Dr. W. D. Haggard, Nashville, Tenn.; Dr. R. T. Edwards, Oakland City; Dr. C. M. Rosser, Dallas, Texas; Governor Johnson, St. Paul; United States Senator M. E. Clapp, Chief Justice C. M. Stuart, Hon. E. M. Weston, president of the Great Western R.R., and others. Dr. Rosser said in part:

> In relation to society the science of human healing stands supreme, and the profession throughout the world looks to America for leadership. To be President of the American Medical Association involves, therefore, the very highest personal honor, and reflects a credit on this community and commonwealth, otherwise impossible. Those familiar with the advanced character of work done by the Mayos found no surprise in the announcement that the elder brother had been accorded his recent distinction, which I take to be intended as a tribute to the worthiness of both.
>
> Nothing is more engaging than fraternal devotion, and nowhere has it been more beautifully exemplified than here in Rochester. As playmate brothers, as schoolboy chums without a quarrel, here on your streets, and in the country home near by, with equal ambition to excel in doing good, yet prone to self effacement, they have through patient labor as scientific twins, achieved a joint distinction, great as gratifying.
>
> But, my friends, the created is always at least sentimentally second to the creator, and if praise was the portion of him who could cause "two blades of grass to grow where only one had grown before," who shall set the limit of gratitude toward the now venerable father, whose early sacrifice and whose sagacity made the present happy condition a necessary following, and who retiring from the activity of a useful life, leaves in his stead two such sons.
>
> I propose the continued health and happiness of Dr. W. W. Mayo, the illustrious sire. May he exchange the terrestrial for the celestial some sweet day, but let him be a long time about it.

MISSOURI.

Sanitarium Locaters.—The commission to locate the state sanitarium for tuberculosis met at Jefferson City for organization, July 10, and elected the following officers: William Bayliss, Clarence, president; J. L. Eaton, Bismarck, vice-president; Dr. L. Claude McElwee, treasurer, and W. D. Craig, Galena, secretary.

Personal.—Dr. George B. Thompson, Kansas City, coroner of Jackson County, while asleep, was robbed of $60 and a gold watch.——Dr. Vincil O. Williams, Bunceton, will succeed Dr. Charles B. Simcoe as assistant physician at the Nevada State Hospital, October 1.——Dr. Henry A. Schroeder, Braymer has been appointed surgeon for the Kansas City Laredo division of the St. Paul System.

St. Louis Health Commissioner Removed from Office.—Mayor Wells announced July 22 that he had sustained the charges filed against Health Commissioner Dr. John H. Simon. In accordance with these findings he removed him from office, and immediately appointed City Bacteriologist Dr. Charles A. Snodgras to act until September when the permanent appointment will be made by the city council. The temporary appointee, Dr. Snodgras, has been city bacteriologist during the past two years. In the trial of the charges against Dr. Simon, Dr. Snodgras was one of the principal witnesses against Simon, alleging, that in the municipal assembly he had hampered legislation of interest to the bacteriologic department, such as the passage of an appropriation for paying the wages of the stenographer and janitor of the bacteriologic laboratory. Dr. Simon denied this in rebuttal, showing by testimony of the speaker of the house of delegates that he had worked hard to have this legislation passed. Dr. Simon will resist the mayor's decision by appealing to the courts for an order of restraint to prevent his successor from taking office.

Skin and Cancer Hospital Opens.—On July 1 the St. Louis Skin and Cancer Hospital opened its doors for the reception of patients. This institution consists of a completely equipped hospital of forty beds, and an out-patient or dispensary service. Only skin and cancerous diseases are treated. The institution is founded on the research idea for cancer and allied types of malignant diseases. A pathologist has been appointed, who will conduct such scientific investigations as the opportunities of the hospital and clinic will permit. The medical staff of the institution will also, especially, direct their efforts to scientific endeavor. A training school for nurses, partaking of the character of a post-graduate school, has been established in connection with the hospital. Daily clinics for out-patients will be held. The institution is free of charge to all patients. Inoperable and incurable cancer cases, as well as operable cases, will be admitted to the hospital; the society hopes, in the near future, to have a home in the suburbs of the city, for the former cases. The following medical staff has been appointed: Drs. Gustav Baumgarten, Norman B. Carson, James R. Clemens, Martin F. Engman, Arthur E. Ewing, Edwin C. Burnett, Washington E. Fischel, Frank R. Fry, George Gellhorn, John Green, John B. Keber, Frank J. Lutz, Guthrie McConnell, Harvey G. Mudd, Greenfield Sluder, John B. Shapleigh, Elsworth Smith, Jr., Justin Steer, and Fred J. Taussig.

NEW YORK.

New York City.

Gifts to Hospitals.—Under the will of Margeretta A. Jones, her estate, which is appraised at more than $900.000, will be divided in equal shares among St. Luke's, Presbyterian and the Post Graduate hospitals. The incomes from these funds are to be used in providing free beds.

Bubonic Plague Aboard Ship.—The captain of the *Indrani*, which recently arrived from China and Japan, reported that one of the crew had died about a month before from bubonic plague and another, evidently suffering from the plague, had been put ashore. The crew was detained at quarantine and the vessel disinfected.

Going and Coming.—Dr. John A. Bodine sailed on the *Cedric* July 19.——Dr. William M. Ford arrived on the *Grosser Kurfuerst* July 19.——Dr. W. A. Bartlett sailed on the *Deutschland* July 20.——Dr. John W. Brannan sailed on *La Bretagne* July 20.——Dr. and Mrs. Francis J. Quinlan sailed on the *Deutschland* July 20.

Contagious Diseases.—There were reported to the Sanitary Bureau for the week ended July 15, 458 cases of measles, with 17 deaths; 371 cases of tuberculosis, with 136 deaths; 187 cases of diphtheria, with 27 deaths; 94 cases of typhoid fever, with 12 deaths; 50 cases of scarlet fever, with 5 deaths; 34 cases of cerebro-spinal meningitis, with 32 deaths and 34 cases of varicella.

Would Reduce Infant Death-Rate.—The Health Board is exerting every possible effort to cut down the death-rate among the babies of the tenements, and to this end, 110 men who are employed during the winter as school inspectors have been appointed to inspect the milk sold to the poor, to visit tenement houses and to instruct mothers in the proper manner of caring for milk.

At Work on Food Adulteration.—The officials of the Health Department announce that they are doing their utmost to protect the people of this city from food adulteration. The chief of the analytical laboratory, James P. Atkinson, says more money is needed to carry on the work as extensively as is needed. He has only two assistants who are available for food analysis. He believes that many of the deaths reported as ptomain poisoning have been due to other imprudent mixtures. In cases of suspected poisoning a fresh, unopened can of the brand supposed to be adulterated should be sent to the department.

Results of Hot Spell.—From July 9 to May 21 there were 193 deaths due to the heat and hundreds of prostrations. On July 18 there were 266 ambulance calls registered at police headquarters up to 9:30 p. m. Two physicians on the staff of St. Vincent's Hospital were prostrated by heat and overwork and the staffs and nurses of all hospitals were kept very busy. The death rate for the week was 23, at the annual rate of 23.01 per 1,000, as compared with 21.04 per 1,000 for the same period last year. The deaths recorded for the week ending July 15 showed 479 from diarrheal diseases, 435 of which were in children. The number of deaths in the tenement districts was 826, and of these 636 were children under one year.

Typhoid in Queens.—Typhoid fever is spreading in the borough of Queens. There are many cases at College Point and local physicians attribute it to the sewage flowing out in the mud flats of Flushing Bay and remaining there. St. John's Hospital, Long Island City and Long Island City itself have also many cases. Statistics at the Health Department show that the number of typhoid cases reported each year is decreasing with each annual report. Only two other cities in the United States have as low a death rate due to typhoid fever as New York. In 1903 there were 314 deaths due to typhoid out of 2.334 cases reported, while in 1904 there were 281 deaths and only 1.786 cases reported. Up to the present month there have been 85 deaths out of 478 cases reported, as against 115 deaths out of 818 cases reported in the same period of 1903.

PENNSYLVANIA.

Philadelphia.

Dr. Keen Honored.—Dr. William W. Keen, who is attending the celebration of the quarter-century of the Royal College of Surgeons, had the honorary degree of doctor of laws conferred on him by Edinburg University July 22.

Personal.—Among the physicians who sailed for Europe on the *Noordland*, July 15, were Drs. W. Wayne Babcock, Edgar W. Tully, and Samuel Wolfe.——Dr. Charles Weber is spending the summer in Europe.——Dr. William Krause sailed for Europe, July 18.——Dr. and Mrs. G. Hudson Makuen sailed for Hamburg on the *Pennsylvania* July 22.——Dr. and Mrs. Henry W. Stelwagon are spending the summer in Belgium and Holland.

Physician Committed.—Dr. Walter A. Van Voorhis was committed to prison, July 21, by the coroner, charged with the death of a woman resulting from a criminal operation. Dr. Van Voorhis denied being implicated in the woman's death, and said that he had treated her, but in a legal manner. The coroner's physician, who made the autopsy, testified that the cause of death was due to septicemia following the administration of drugs.

Health Report.—The total number of deaths reported for the week was 608, as compared with 548 for last week, and 482 for the corresponding period last year. The great increase is attributable to the extremely hot weather, as the increased mortality was due almost entirely to disease of infants and aged persons. During the week 233 infants died. The actual deaths from sunstroke reported were 19. The principal causes of death were: typhoid fever, 18; tuberculosis, 53; diphtheria, 4; cancer, 24; meningitis, 6; apoplexy, 28; convulsions, 7; heart disease, 47; acute respiratory disease, 24; enteritis, 138; Bright's disease, 31; inanition, 12, and marasmus, 23. There were 142 cases of contagious disease reported, with 22 deaths, as compared with 163 cases and 14 deaths reported last week. There were 108 cases of typhoid fever, with 18 deaths.

GENERAL.

Quarantine Against Panama.—The government of Costa Rica has declared Panama plague infected, though only one fatal case has been reported, and has prohibited the entrance of vessels from any port on the Isthmus to any port of the republic.

Yellow Fever in Panama.—Cable reports from Panama are still discouraging. At present seven patients with yellow fever are under treatment. Governor Magoon reported the death of an American employe July 15. The man was taken sick July 8.

Prompt Supply for the Isthmus.—A recent requisition by cable was filled at New York and the supplies reached the Isthmus in two weeks, a marked difference from the months that have sometimes elapsed while an order was only being approved. This requisition included thirty-eight tons of insect powder and revealed the fact that only twenty tons were to be had in New York City. Other items were twenty tons of sulphur, one hundred iron pots in which to burn it, fifteen tons of newspapers for making tight enclosures in the open buildings in connection with fumigation and seven tons of flour to make paste.

Progress in Temperance.—The American Medical Society for the Study of Alcohol and Other Narcotics held a successful meeting at Portland, Oregon, July 12, 1905. Papers were read and discussed and resolutions were adopted commenting on various evidences of progress in this very important field of medicine. Resolutions congratulating the people of this country on having made the study of physiology and hygiene, including the nature and effects of alcoholic drinks and other narcotics, compulsive for her 22,000,000 children of school age and also Great Britain on the fact that, through the efforts of practically the entire registered medical profession of the United Kingdom, public school study of the same subject is on the way to accomplishment, thus laying the foundation for a future of intelligent sobriety, strength and efficiency for the whole English speaking race. These resolutions also expressed joy in the evidence that the public school teaching in America of physiology and hygiene, including the nature and effects of alcoholic drinks and other narcotics, is resulting in better obedience to the laws of health, in a growing sentiment in favor of public sanitation and total abstinence, despite our enormous foreign immigration, and in the rapidly increasing prohibition of alcohol in industrial employments.

CANADA.

Street Cleaning Under a Health Department.—The street cleaning of Toronto has been placed under the charge of the city's medical health officer, Dr. Charles Sheard. This is a distinct advance in sanitary science in this city.

Personal.—Dr. Swale Vincent, Winnipeg, Man., professor of physiology in the medical faculty of the University of Manitoba. has been invited by the University of London, Eng., to deliver a course of lectures on "The Ductless Glands."

Winnipeg General Hospital.—For the week ending Saturday, July 8, the total number of patients treated in the Winnipeg General Hospital numbered 310. 188 men, 88 women and 34 children. In the outdoor departments the number treated was 136.

Lodge Practice Condemned in a Canadian City.—The Medical Society of Peterboro, Ont., has resolved that after Jan. 1, 1906, there will be no more lodge practice in that city. Twenty-six out of the twenty-eight practitioners, most of whom have been associated with lodge practice during the past five or ten years, have agreed to dispense with it altogether after the above named date.

British Medical Association.—The profession of Toronto met on the afternoon of July 13 for the purpose of extending a formal invitation to the British Medical Association to meet in Toronto in 1906, thereby indorsing the action of the Canadian Medical Association, which had dispatched an invitation in 1903. It was unanimously agreed that the profession in Toronto should commission Mr. I. H. Cameron, at present in England, to extend this invitation on behalf of the profession of Toronto.

Mental Wards in General Hospitals.—There are a certain class of cases often immediately adjudged insane and confined in so-called insane asylums, which would be far better cared for in mental wards in general hospitals. Toward this end in the province of Ontario, a deputation of medical men waited on the premier, the Hon. Mr. Whitney, on July 14. The deputation comprised members of both the Toronto Clinical Society and the Ontario Medical Association, and because it was a large one the proof is apparent that the profession of this province would like to see facilities for caring for these cases such as is done in Albany, N. Y., and other places, before commitment is made to an ordinary asylum for the insane. Dr. D. Campbell Meyers was the chief spokesman. The premier promised that the subject would have the immediate and careful consideration of his government.

FOREIGN.

Yellow Fever in Venezuela.—No improvement is reported in the yellow fever situation in Maracaibo. On the contrary, the disease seems to spread.

Plague in Great Britain.—A fatal case of plague occurred in Manchester, England, on June 12. The patient had been employed as cook on the steamer *Hylas*, from the Argentine Republic, via Hamburg.

Gift to Bergen, Norway, of a Laboratory for Pathologic Anatomy.—Dr. E. G. Gade has presented his native city of Bergen with $30,000 to equip and support a laboratory for pathologic anatomy. Bergen has long been wishing for a university or at least a medical institute of some kind.

Organization of the Profession in Germany.—The official board in charge of the construction of the canal at Kiel, Germany, wishes to have its medical officers sign a contract binding them to report to headquarters any patient who voluntarily retards his recovery. The local and district medical societies are protesting against this clause as degrading to the profession, and hope that no physicians will be found to accept the positions on these terms.

Endowment For Home For the Local Medical Societies of Nuremberg.—A liberal-minded citizen of Nuremberg, Germany, has endowed a fund of $80,000 for the erection and maintenance of a building to serve as a museum, library and gathering hall for local physicians. It is similar to the Pettenkofer House which Munich has long planned as a memorial to Pettenkofer and for which subscriptions have been laboriously collected, but which is yet far from approaching realization.

Postponement of International Congress of Gynecology.—The local committee in charge of the arrangements for the Fifth International Congress of Obstetrics and Gynecology, appointed for September, 1905, at St. Petersburg, announce that so many communications have been received from physicians and medical societies at home and abroad, expressing doubts whether the congress could prove a success under existing conditions, that it has been decided to cancel all dates for this year and postpone the gathering until September of 1906. The themes, programs, etc., already announced will be adhered to, modified as circumstances developing during the year may demand.

Yellow Fever in Africa.—In *Public Health Reports* it is stated that a death from yellow fever has occurred at Dakar in the French colony of Senegal on the west coast of Africa. A frightful epidemic of this disease occurred there in 1900 and the authorities, warned by their experience at that time, are taking every possible precaution to prevent the spread of the disease. The patient's family has been isolated and the house and furniture burned, the government assuming the loss. The hospital authorities have purchased wire cages, each of which will hold a bed, table and chair, in which to care for other yellow fever cases, should such occur, in order to prevent mosquitoes biting them and then infesting others.

Medical Study Trip to the Health Resorts of France.—The seventh annual trip of physicians and medical students to the health resorts of France will commence this year September 1, and continue till the 14th. The spas to be visited are those in the southwest of the country, including Luchon, Barbazan, Pau, Biarritz and Arcachon. The organizer of these instructive trips is Dr. Carron de la Carrière, rue Lincoln 2, Paris, France, from whom further details may be learned. The Chatel-Guyon Company, the Vichy Company, Professor Henrot of Rheims and two local medical societies have each endowed a membership in these study trips, the recipients to be an interne or recent medical graduate or member of one of the local societies interested.

Plague in Japan.—According to the report of Passed Assistant Surgeon Moore, in *Public Health Reports*, up to June 8, eleven cases of plague have been reported in Tokyo. All these cases have occurred in a section of the city inhabited by the poorer class of Japanese and not much frequented by foreign visitors. The disease has appeared in Kogawa Ken, a prefecture in the northern part of the island of Shikoku. Shiga, the bacteriologist, of Tokyo, investigated the outbreak and reported that during the period from May 30 to June 8, there occurred in one village 15 cases of plague with 8 deaths. Speaking generally, Dr. Moore states that the plague situation in Japan shows no signs of amelioration and that this infection has never manifested itself in a more threatening manner in that country.

Advance of Cholera on Europe.—Chantemesse spread before the Paris Académie de Médecine at a recent meeting the details of the onward march of cholera toward western Europe. He regards it as extremely significant that at present the disease is installed in four different menacing foci, at Merv in the Trans-Caspian district, at Tiflis, Baku and Batoum in the Trans-Caucasian district, at Van in Anatolia, and along the banks of the Volga, in Astrakhan, Saratov and Samara. At these points the cholera hibernated but resumed its aggressions on the appearance of warm weather. It is now thoroughly established at Bagdad, which is a new and powerful center for its further spread. He thinks that the fear of its reaching western Europe is well founded.

International Congress on Tuberculosis.—The official announcement of this congress, to be held at Paris, October 2-7, states that there are to be four sections, medical pathology, surgical pathology, preservation and assistance of infants and the same for adults. "The New Methods of Early Diagnosis of Tuberculosis" will be the subject of a report by Achard of Paris, Mariani of Genoa, and C. T. Williams of London. "Treatment of Lupus by the New Methods" will be presented by Forchhammer, chief of the Copenhagen Light Institute, by Lesser of Berlin and by Jeanselme and Chatin of Paris in the medical section. A copy of the official circular in English will be sent on demand to Dr. M. Letulle, 21 rue de l' Ecole de Médecine, Paris, with any information desired. The circular contains the entire list of subjects and communications to be presented, with the list of subjects suggested by the committee of organization.

Merkel's Seventieth Birthday.—The friends of Prof. G. Merkel gathered at Nuremberg June 29 to celebrate his seventieth birthday and present him with a *Festschrift* in the form of the eighty-fourth volume of the *Deutsches Archiv f. klinische Medizin*, with which he has been connected since 1871. A subscription of $2,000 had also been raised and was presented in his name to the endowment fund for the relief of physicians' widows. The city authorities conferred honorary citizenship on him for his achievements in promoting sanitation and hygiene, in the construction of the new model city hospital, etc. One of the interesting features of the festivities was the address to his wife made by the burgemeister. He presented her with a wreath in the name of the city, for her predominant share in maintaining the "Leistungsfähigkeit" of her husband. that is, for the keeping of her husband in such good health and spirits that he is able to do such good work in these various lines. A portrait bust, tablets, etc., were also presented to Merkel from the Erlangen medical faculty and others, and the day closed with a lunch at the Merkel home, followed next day by a banquet tendered by the local medical society.

Program of International Congress.—The next International Medical Congress, to be held in Lisbon April 19 to 26, 1906, is expected to be one of great importance, in spite of its being held in what has always been considered as an out of the way country. Some of the most distinguished men of the medical profession have offered papers. Some of the topics for discussion that have been selected by the executive committee are the following:

SECTION OF DESCRIPTIVE AND COMPARATIVE ANATOMY, ANTHROPOLOGY, EMBRYOLOGY AND HISTOLOGY.

Definition, structure and composition of protoplasm.

Origin, nature and classification of pigments.

Cellular changes in normal tissues.

Evolution and involution of the thymus gland.

SECTION OF PHYSIOLOGY.

The rôle of leucocytes in nutrition.

The thyroid secretion.

Renal permeability.

The nutritive value of alcohol.

The physiology of the cytotoxins.

The blood ferments.

SECTION OF GENERAL PATHOLOGY, BACTERIOLOGY AND PATHOLOGIC ANATOMY.

What are the present scientific proofs of the parasitic nature of neoplasms, especially of cancer?

Preventive inoculations against bacterial diseases.

Preventive inoculations against protozoic diseases.

Preventive inoculations against diseases from an unknown specific agent.

The pancreas and fat necrosis.

THERAPEUTICS AND PHARMACOLOGY.

Local therapeutics in infectious diseases.

Separation, from a physiologic and therapeutic point of view, of the different radiations produced in Crooke's tubes and of those which are sent out by radioactive bodies.

The therapeutic value of bactericidal serums.

The relation between the molecular constitution of organic bodies and their physiologic and therapeutic action.

SECTION OF MEDICINE.

The pathogenesis of diabetes.

The pathogenesis of arterial hypertension.

The treatment of cirrhosis of the liver.

Cerebrospinal meningitis.

International defense against tuberculosis.

Meningeal hemorrhages.

SECTION OF PEDRIATICS.

Spastic affections of infancy: classification and pathogenesis.

Cerebrospinal meningitis; etiology and treatment.

The social struggle against rickets.

Orthopedic surgery in affections of nervous origin, spastic and paralytic.

Congenital dislocation of the hip.

The treatment of abdominal tuberculosis (peritoneal).

NEUROLOGY, PSYCHIATRY AND CRIMINAL ANTHROPOLOGY.

Penal reform from the anthropologic and psychiatric point of view.

Forms and pathogenesis of dementia præcox.

The relations of progressive muscular atrophy to Charcot's disease.

Cerebral localization in mental disease.

Education and crime.

Stigmata of degeneration and crime.

SECTION OF SURGERY.

Septic peritoneal infections; classification and treatment.

Gastrointestinal and intestinointestinal anastomoses.

Recent additions to arterial and venous surgery.

SECTION OF MEDICINE AND SURGERY OF THE URINARY ORGANS.

Surgical intervention in Bright's disease.

Surgical treatment of prostate-vesical tuberculosis.

Progress of urology in the diagnosis of renal disease.

Painful cystides.

SECTION OF OPHTHALMOLOGY.

Blepharoplasty.

Serotherapy in ophthalmology.

SECTION OF LARYNGOLOGY, RHINOLOGY, OTOLOGY AND STOMATOLOGY.

Study of the epileptogenous action of foreign bodies in the ear and of vegetations in the naso-pharynx.

The different forms of suppuration of the maxillary sinus.

Injections of paraffin in rhinology.

Differential diagnosis of tubercular, syphilitic and cancerous lesions of the larynx.

Choice of anesthesia in the extraction of teeth.

Treatment of alveolar suppuration.

SECTION OF OBSTETRICS AND GYNECOLOGY.

Conservative surgery of the ovaries.

Tuberculosis of the adnexa.

Symphyseotomy.

Pregnancy and cancer of the uterus.

Therapy of puerperal infections.

SECTION OF HYGIENE AND EPIDEMIOLOGY.

The intermediary of yellow fever.

The co-operation of nations to prevent the importation of yellow fever and the pest.

Watering the streets as a means against tuberculosis.

Recent additions to the etiology and epidemiology of epidemic cerebrospinal meningitis.

SECTION OF MILITARY MEDICINE.

Portable ration of the soldier during campaigns.

The purifying of the country water.

Emergency hospitals on the battlefield.

SECTION OF LEGAL MEDICINE.

Signs of death from drowning.

Ecchymoses in legal medicine.

Epilepsy in legal medicine.

Organization of medicolegal services.

SECTION OF COLONIAL AND NAVAL MEDICINE.

Etiology and prophylaxis of beri-beri.

Etiology and prophylaxis of dysentery in hot countries.

Mental diseases in tropical countries.

Hospital ships and their function in time of war.

Tuberculosis in the navy and its prophylaxis.

See page 1942 for further details of Congress.

Correspondence

Malpractice Insurance and Medical Defense.

Hartford, Conn., July 14, 1905.

To the Editor:—The discontinuance by the Travelers' Insurance Company of the insurance of physicians against the consequences of professional errors has been made the subject of comment in several recent numbers of The Journal. From what you have published it seems that you and your readers are under some misapprehension respecting the scope of physicians' and surgeons' liability insurance. In your editorial, April 1, you refer to it as insurance against malpractice suits. The opinion of the attorney-general of Iowa, to which reference is made in The Journal, April 22, seems to involve a like error, and Mr. E. H. Merritt, in his interesting letter published in the same number, evidently understands that it was the purpose of the insurance to cover malpractice, defined by him as "bad professional treatment of disease from reprehensible ignorance or carelessness."

The Travelers Insurance Company never issued a policy purporting to protect a physician or anyone else against the penalty of misconduct or bad conduct. Wanton mischief is not insurable, and a contract pretending to afford protection to one guilty of such an offense would not be enforced by any court. Physicians' and surgeons' liability insurance, and all other liability insurance written by responsible companies, excludes such misconduct. The policy mentioned as "malpractice insurance" insures the physician against damages recoverable "by reason of any error or mistake made by the assured in the practice of his profession." This phraseology limits the insurance to the unintentional negligence of the insured, for which, nevertheless, those who suffer thereby may be entitled to claim damages. In order that the exclusion of willful or gross negligence may be beyond question, the policy contains the further provision that the insurance does not cover claims founded wholly or in part on "the violation of any law or ordinance, nor while the insured is under the influence of intoxicants or narcotics or while engaged in any act outside the practice of his profession."

And in order that this kind of insurance might not extend beyond the bounds of prudent and ethical underwriting, policies were issued only to reputable and properly trained and accredited members of the profession. So limited, physicians' liability is a useful branch of the insurance business and may with propriety pay recoverable damages for such errors as have been made by many conscientious, painstaking and experienced physicians and surgeons, as well as the expenses of conducting the defense.

The discontinuance by the Travelers Insurance Company of this form of insurance is not, therefore, to be taken as an admission that it reflected discredit on either the company or the profession, because clearly it was not insurance against the merited penalties of malpractice or bad practice, of which no one ought to be able to relieve himself by insurance or otherwise.

I have no objection to disclosing the reasons by which the officers of the company were influenced. The premium rate was inadequate to the losses and expenses of the business. To conduct a defense properly, which the insurance company was bound to do at any cost, expensive expert testimony was necessary in every case, judgments when recovered were large, other expenses incidental to the management of such cases were large, comparatively few members of the profession cared for such insurance, wherefore the volume of business was small. The authorities of one or more states were not hospitable, laboring, it seemed to me, under the somewhat general misapprehension that the Travelers Insurance Company was engaged in protecting all kinds of doctors, regular, irregular and disreputable, against the consequences of malpractice. All these considerations indicated that it would be better to leave the business in the hands of other companies, who have the leisure and disposition to specialize it, than to make the effort to overcome all the disadvantages presented. Apparently the result when achieved, with adequate premium, would have been an insufficient reward for the time and energy diverted from more profitable and satisfactory lines.

S. C. Dunham,
President, the Travelers Insurance Company.

Anti-Spitting Laws and Associated Inconsistencies.

Chicago, July 18, 1905.

To the Editor:—During the years 1904 and 1905 I have received some very excellent circulars from the secretary of the State Board of Health of Illinois in reference to the alarming condition of tuberculosis in all states and especially in the crowded portions of Chicago. Last week I received a similar circular from the Illinois State Medical Society urging general practitioners especially to become more alert in the early detection and prevention of tuberculosis. Last winter I was pleased to see, as a result of these circulars and of the free public lectures on the prevention of tuberculosis, that the authorities in Chicago were thoroughly awakened to the alarming conditions and that many arrests of sidewalk expectorators were made. For weeks thereafter people went to the edge of the sidewalk to expectorate in the street. So far, well and good, but to my horror and chagrin when the warm weather came the "white-wings" honestly but unwittingly swept these dried tubercular germs into the nostrils of the unsuspecting multitudes daily passing by. Many times this summer I have had to hold my breath as I passed these clouds of germ-laden dust. This seems to me a travesty on hygienic precautions. A chain is no stronger than its weakest link; I therefore urgently ask that, through the medium of The Journal A. M. A., this matter be brought to the attention of the medical profession and especially to the department of health.

H. A. Cuthbertson.

Dr. Warren Kept His Portland Engagement.

Seattle, Wash., July 18, 1905.

To the Editor:—It is not generally known that the degree of LL.D. had been awarded to Dr. J. Collins Warren of Boston, orator on surgery at the session in Portland, by the University of Edinburgh, Scotland. Had he accepted the degree, his presence would have been required in Edinburg, and in consequence he could not have fulfilled his Portland engagement. This smacks of the fine spirit of 1776. It is just to Dr. Warren that the profession should know this self-denial of our colleague in putting aside the great honor.

J. H. Musser.

Association News

OFFICIAL MINUTES OF THE SECTIONS.

The following are the official minutes of the Portland, Ore., proceedings of the various sections, July 11-14, 1905, as far as received. The minutes of the Section on Stomatology and of the Section on Laryngology and Otology and of the Section on Pharmacology and Therapeutics will appear later. The list of members registered at the Portland session will be published as soon as verification of the lists is completed.

Section on Practice of Medicine.

Tuesday, July 11.—Afternoon.

Dr. Richard C. Cabot in the Chair.

"The Incidence of Heart Disease in San Francisco," by Dr. William Fitch Cheney, San Francisco. Discussed by Drs. Ophuls, Walsh and Grandy.

"The Secret Nostrum Evil," by Dr. Frank Billings, Chicago. Discussed by Drs. Musser, Moore, Stengel, Walsh, Bridge, Priestley, Witherspoon, King, Grosse, McCleave, Stockton, Stengel, Bridge, and Carter.

"Studies in Roentgen Ray; Diagnosis of Chest Diseases," by Drs. James E. Talley and W. S. Newcomet of Philadelphia (read by Dr. Hall). Discussed by Drs. Neilsen, Musser, McCaskey and Hall.

Dr. Alfred Stengel, Philadelphia, offered resolutions (which were printed in full in The Journal, July 22, 1905, p. 275), and moved their adoption. Seconded and carried.

Dr. J. J. Walsh, New York, made a motion that the resolutions be also sent to the secretary of the Canadian Medical Association for the purpose of informing that association of the methods employed in attempting to do away with nostrums. The motion was seconded and carried.

Wednesday, July 12.—Morning.

SYMPOSIUM ON NEPHRITIS.

A paper on "General Considerations on the Pathology of the Kidney," by Dr. W. T. Councilman, Boston, was not read, but reference was made to it by the Chairman, Dr. Cabot.

"Albuminuria in Nephritis and Bright's Disease," by Dr. Alfred Stengel, Philadelphia.

"Cylindruria," by Dr. Chas. P. Emerson, Baltimore.

"The Relation of Kidney Conditions to Puerperal Eclampsia," by Dr. Philip King Brown, San Francisco.

"The Dietetic Treatment of Nephritis," by Dr. F. C. Shattuck, Boston.

These five papers were discussed by Drs. Witherspoon, Ophuls, Bulkley, Hutchinson, Francine, Walsh, Billings, Musser, Fussell, Le Roy, Lichty, Stengel and Brown.

Wednesday, July 12.—Afternoon.

SYMPOSIUM ON ANIMAL PARASITES AND TROPICAL DISEASES.

"Symptoms, Diagnosis and Prognosis of Amebiasis in the Tropics," by Dr. W. E. Musgrave, Manila, P. I. Discussed by Drs. Dock, Lemon, Black, Shattuck, Smith and Musgrave.

"The Mode of Infection in Uncinariasis," by Dr. Claude A. Smith, Atlanta, Ga. Discussed by Drs. Fussell, Cheney, Brown and Smith.

A nominating committee was appointed, consisting of Drs. Hall, Stockton and Shattuck.

Thursday, July 13.—Morning.

SYMPOSIUM ON THE STOMACH.

"Recent Advances in the Physiology of Human Nutrition," by Dr. Frank Billings, Chicago.

"Methods, Value and Limitations of the Knowledge of the Gastric Contents," by Dr. George Dock, Ann Arbor, Mich.

"Non-Gastric Diseases Presenting Gastric Symptoms," by Dr. J. H. Musser, Philadelphia.

"Food Stagnation from All Causes," by Dr. Charles G. Stockton, Buffalo, N. Y.

These four papers were discussed by Drs. Cabot, McCaskey, Manges, Black, Miller, Anders, Shattuck, Bond, Walsh, Lichty, Cooper, Bridge, Billings, Dock, Musser and Stockton.

"Type of Tuberculosis on the North Pacific Coast," by Dr. Woods Hutchinson, Portland. Discussed by Drs. Cheney, Miller, Bridge, Brown, Ophuls, Robbins, Osborne, Moffit, and Hutchinson.

ELECTION OF OFFICERS.

The election resulted as follows: Chairman, Dr. Herbert C. Moffit, San Francisco; secretary, Dr. J. L. Miller, Chicago; alternate, Dr. George Dock, Ann Arbor.

"Coccidioidal Granuloma," by Dr. W. Ophuls, San Francisco, Discussed by Dr. Rykfogel.

"Thyroid Disease in California," by Dr. Herbert C. Moffit, San Francisco. Discussed by Drs. Walsh, Wells. Quevil, McCaskey, Whiteside, Grandy, Lichty, Johnson, and Moffit.

"The Value of Various Hemoglobin Instruments to the General Practitioner," by Dr. M. Howard Fussell of Philadelphia.

Section on Obstetrics and Diseases of Women.

Tuesday, July 11—Afternoon.

Dr. Manton presided while the Chairman, Dr. C. L. Bonifield, delivered his address.

The first paper was by Dr. T. B. Eastman, Indianapolis, on "Innocent Fibromyoma of the Uterus." Discussed by Drs. F. B. Andrews, W. F. Wakefield, J. H. Carstens. L. H. Dunning, D. H. Craig, Hawkins, W. O. Henry, R. T. Gilmore, and C. L. Bonifield.

Dr. William E. Ground, Superior, Wis., read a paper on "Causes of Failure After Successful Gynecologic Operations." Discussed by Drs. J. H. Carstens, D. H. Craig, G. M. Wells, Hawkins, Newman, and Ground.

Dr. F. J. Taussig presented a resolution concerning the report on uterine cancer from the Gynecologic Section of the International Congress of Arts and Science, entitled: "What May Be Done to Increase the Percentage of Cures in Uterine Cancer?" The resolution was referred to the House of Delegates. (This resolution and report are printed in full in The Journal, July 22, page 283.)

Wednesday, July 12—Morning.

The Section convened at 9:30. Dr. Bonifield presiding.

Dr. J. Riddle Goffe, New York, read a paper on "Tubal Pregnancy, with Report of an Instructive Case."

Dr. J. H. Carstens read a paper entitled "Some Cases of Extrauterine Pregnancy."

These two papers were discussed by Drs. R. T. Gilmore, L. H. Dunning, C. O. Thienhaus, Perkins, D. C. Brockman, W. E. Ground, W. O. Henry, C. L. Bonifield, and Carstens.

Dr. W. F. Wakefield, San Francisco, read a paper on "Postoperative Pelvic Exudates." Discussed by Drs. H. O. Pantzer, C. O. Thienhaus, D. H. Craig, J. Riddle Goffe, C. S. Bacon, J. H. Carstens, F. B. Andrews. H. C. Crowell, and Wakefield.

Dr. F. B. Andrews, Chicago, read a paper entitled "Hernia of the Fallopian Tube." Discussed by Dr. T. B. Eastman and A. Goldspohn.

Wednesday, July 12—Afternoon.

Called to order at 2 p. m.

Dr. L. H. Dunning. Indianapolis, read a paper on "Gonorrhea in the Female." Discussion by Drs. D. H. Craig, A. Goldspohn, W. O. Henry, and Dunning.

The Chairman appointed the following nominating committee: J. H. Carstens, L. H. Dunning, D. H. Craig, E. F. Tncker, and F. H. Wiggin.

Dr. W. D. Kelly, St. Paul, read a paper entitled "An Operation for Pyosalpinx, Without Ligature, Clamp, Artery Forceps or Bleeding, by Overthrow Provisional Suture Method." Discussed by Dr. Ryan, Iowa.

Dr. A. Goldspohn contributed his "Fourth Detailed Report of the Superior and Lasting Results of the Bi-inguinal Operation for Simple and Complicated Aseptic Retroversion of the Uterus."

Dr. D. H. Craig. Boston, read a paper entitled "The Conservation or Restoration of Normal Anatomy in Gynecologic Surgery."

Discussion on these two papers by Drs. C. O. Thienhaus, W. O. Henry, A. E. Gallant, Frisbee, E. F. Tucker, H. O. Marcy, Goldspohn, and Craig.

Dr. E. F. Tucker, Portland, read a paper on "Etiology and Treatment of So-called Endometritis." Discussed by Dr. Marcy.

On motion the Chair appointed Drs. Tucker, Clark (Philadelphia) and Marcy a committee to report next year on proper nomenclature of endometritis.

Thursday, July 13—Morning.

The Section convened at 9 a. m.

Dr. George B. Somers, San Francisco, read a paper on "Repair of the Perineum." Discussed by Drs. Carstens, Marcy, Wakefield, Ferguson, Clark, Bacon, Andrews, Kieffer, and Somers.

Dr. F. D. Donoghue, Boston, read a paper entitled "Some Complications of Pregnancy Treated Surgically." Discussed by Drs. Montgomery, Bacon, Carstens, Dorsett, and Donoghue.

Dr. C. S. Bacon, Chicago, followed with a paper on "Pulmonary Tuberculosis as an Obstetric Complication."

Dr. G. S. Whiteside, Portland, read a paper on "Maternal Syphilis."

These two papers were discussed by Drs. Bertola, Tanssig, Davis, Henry, Carstens, Donoghue, Bacon, and Whiteside.

Dr. Ferguson was given permission to exhibit a new obstetric forcep, and Dr. Gallant, a new metal uterine drain.

Dr. W. H. Sanders, Montgomery, Ala., read a paper on "The Physiologic and Legal Status of the Fetus in Utero," which was discussed by Dr. Marcy.

Thursday, July 13—Afternoon.

Convened at 2 p. m.

The Nominating Committee reported as follows: Chairman, Charles S. Bacon, Chicago; Vice-chairman, E. F. Tucker, Portland; Secretary, W. P. Manton, Detroit; Delegate, D. H. Craig, Boston; Alternate, T. B. Eastman, Indianapolis.

On motion, the report was adopted and the Secretary instructed to cast the unanimous ballot of the Section for the election of these officers.

Dr. J. A. McKenna, Lansdowne, Pa., read a paper on "Present-day Methods of Conducting Labor Cases and Results Obtained." Discussed by Drs. Shannon and McKenna.

Dr. E. V. Davis, Chicago, read a paper on "A Study of the Female Bony Pelvis." Discussed by Drs. Henry, Carstens, and Davis.

Dr. E. T. Shelly, Atchison, Kan., read a paper on "The Maternal Impression Superstition in Modern Obstetrics Teaching." Discussed by Drs. Carter and Henry.

Dr. L. H. Branson, Iowa City, read a paper on "Syncytioma Malignum." Discussed by Dr. Henry.

Section on Surgery and Anatomy.

Tuesday, July 11—Afternoon.

Chairman's address, by Dr. Maurice H. Richardson, Boston.

"The Cure of Inguinal Hernia," by Dr. Henry O. Marcy, Boston. No discussion.

The Chairman announced that papers would be limited to twenty minutes and discussions to five minutes.

"Fibroid Growths of the Abdominal Wall," by Dr. Charles A. Powers, Denver. Discussed by Drs. Robert F. Weir, New York; E. Rixford, San Francisco; McGlennon, Baltimore; Connell, Fond du Lac; Willoughby, Los Angeles; Fulton, Astoria; L. L. McArthur, Chicago, and M. H. Richardson, Boston.

"Splanchnoptosis from a Surgical Standpoint," by Dr. James E. Moore, Minneapolis. Discussed by Drs. Coffey, Oregon; A. Ernest Gallant, New York, and B. B. Davis, Omaha.

"The Early Diagnosis of Gastric Ulcer," by Dr. H. D. Niles, Salt Lake City.

"Clinical Experiences with the Use of the McGraw Elastic Ligature," by Dr. A. J. Ochsner, Chicago.

"Ulcer of the Stomach and First Portion of the Duodenum, with Especial Reference to the Operative Treatment," by Dr. W. J. Mayo, Rochester, Minn.

These papers were discussed by Drs. Hugo Pantzer, Cincinnati; A. P. Francine, Philadelphia; George Goodhue, Dayton, Ohio; J. H. Carstens, Detroit, and Smith, of Portland.

"Acid Intoxication and Late Poisonous Effects of Anesthetics," by Dr. A. D. Bevan, Chicago. Discussed by Drs. Herbert C. Moffitt, San Francisco; Harry M. Sherman, San Francisco;; Woods Hntchinson, Portland; Binswanger, Portland, and D. A. K. Steele, Chicago.

"Perforations in Typhoid Fever," by Dr. Richard H. Harte, Philadelphia. Discussed by Drs. Lawrence Litchfield, Pittsburg; Charles A. Powers, Denver, and Morris Manges, New York.

Wednesday, July 12—Morning.

"A Clinical Chart for the Record of Patients in a Small Hospital," by Dr. George F. Wilson, Portland, Ore. Discussed by Drs. Wright, Salt Lake City, and Harry M. Sherman, San Francisco.

"Preliminary Report of a Study of Tetanus," by Dr. James M. Anders, Philadelphia. Discussed by Drs. Smith, Hartford; L. L. McArthur, Chicago; G. McCaskey, Ft. Wayne; Walsh, Erie; McLean, California.

"Cysts of the Spleen," by Dr. W. A. Bryan, of Nashville, Tenn.

"Indications for the Removal of the Pathologic Spleen," by Dr. B. B. Davis, of Omaha. Discussed by Drs. M. L. Harris, Chicago; Charles A. Powers, Denver: Schleeter, St. Louis; A. H. Cordier, Kansas City; H. G. Marxmiller, Cincinnati; McDaniel, San Antonio; Jepson, Iowa, and Griffiths, Kansas City.

"Lip Operation for Cancer and Deformity, with Report of Cases," by Dr. W. W. Grant, of Denver.

"Esophagectomy, with Report of Case, with Prothetic Appliances," by Dr. Wallace L. Terry, of San Francisco.

"Six Cases of Operation on the Intestines, Five of Which Were for Cancer," by Dr. Boucher, of Hartford.

"Cancer," by Dr. William L. Rodman, of Philadelphia.

These four papers were discussed by Drs. Sherrill, Tinos; J. J. Hamilton, J. C. Stewart, McLenahan; Martin, Levings, Rixford, Parham, Sailer, Frank and Powers.

Wednesday, July 12—Afternoon.

"A New Method of Incising and Suturing the Liver to Reestablish Its Continuity and for the Control of Hemorrhage," by Dr. Jacob Frank, of Chicago.

"Gallstones in the Common Duct," by W. D. Haggard, Nashville, Tenn.

"Non-calculous Cholecystitis," by Dr. David S. Fairchild, of Des Moines, Iowa.

These three papers were discussed by Drs. McLaren, Potter, Grotham, Cooper. Ochsner, Carstens, Mayo and Hamilton.

"Penetrating Wounds of the Abdomen," by Dr. R. Winslow, of Baltimore. Discussed by Drs. Cooper, Brayton, McRae, Willard, and Boucher.

"Meckel's Diverticulum as a Cause of Abdominal Crises," by Dr. Miles F. Porter, of Ft. Wayne. Discussed by Drs. Winslow and Jepson.

"Phlebitis Following Abdominal Operations," by Dr. A. H. Cordier, of Kansas City. Discussed by Drs. Tinos and Goldspohn.

"Anaërobic Cellulitis, with Report of Successful Cases," by Dr. J. Clark Stewart, of Minneapolis. No discussion.

Dr. Brayton, of Indiana, announced that the Indiana delegation had with them the first woman operated on for gallstones, and that she would be shown to-morrow to the Section on Obstetrics and Diseases of Women.

Thursday, July 13—Morning.

"Exstrophy of the Bladder Successfully Treated by Peter's Method, with Illustrations," by Dr. Harry M. Sherman, San Francisco. Discussed by Drs. Wells and McArthur.

"Tuberculosis of the Kidney," by Dr. J. Garland Sherrill, Louisville, Ky. Discussed by Drs. Smith, Richardson, Huntington, Sharples, Munson, and Frank.

"Treatment of Congenital Dislocation of Hip, with Report of Cases," by Dr. Park Weed Willis, Seattle, Wash. Discussed by Drs. Hunkin, Willard, Thienhaus, Sherman, Parker, Moore, Baldwin, and Ochsner.

"Ununited Fracture in Cases of Delayed Union," by Dr. Casper W. Sharples, Seattle, Wash. Discussed by Drs. Martin, Huntington, Sherman, Hunkin, and Means.

"Site of Origin of Gallstones," by Dr. L. L. McArthur, Chicago. Discussed by Drs. Thienhaus, Richardson and Weir.

"Fractures of the Leg: Their Diagnosis and Treatment, with

Report of Cases and Demonstration of *X*-Ray Pictures," by Dr. C. O. Thienhaus, Milwaukee, Wis. Discussed by Dr. Knox.

ELECTION OF OFFICERS.

The following officers were elected:

Chairman, Dr. Robert F. Weir, New York; Secretary, Dr. A. MacLaren, St. Paul.

Dr. Willard announced that the senior member of the Executive Committee retired and the outgoing chairman took his place.

Dr. Ochsner moved that the Secretary be instructed to cast a unanimous ballot for the men nominated by the Executive Committee. Carried.

Dr. Weir briefly thanked the section for the honor conferred.

Dr. Weir nominated Dr. Ochsner as delegate, but he declined.

Dr. Willard moved, and Dr. Ochsner seconded, the nomination of Dr. Jonas, of Moaga. Carried unanimously.

It was moved and seconded that the Executive Committee be empowered to fill all vacancies occurring for any cause during the ensuing year.

Dr. Powers moved a standing vote of thanks to Rev. E. P. Hill and the officers of the First Presbyterian Church for the use of the church for the meetings of the section. Carried.

Dr. Ochsner moved a vote of thanks to the retiring Chairman and Secretary of the Section. Carried.

Drs. Richardson and McRae briefly replied.

Section on Ophthalmology.

Tuesday, July 11.—Afternoon.

The Section was called to order by the Chairman, Dr. Christian R. Holmes, Cincinnati, at 2 p. m.

Prof. J. Hirschberg of Berlin was introduced as an invited guest of the society.

Drs. Frank Allport, Chicago, and Robert L. Randolph, Baltimore, of the Executive Committee, being absent, the Chairman appointed to serve in their places Drs. Edward Jackson, Denver, and Samuel D. Risley, Philadelphia.

Dr. Melville Black, Denver, representative in the House of Delegates, not being present, the chairman appointed Dr. W. H. Snyder, Toledo, Ohio.

The Chairman then delivered his address: "Studies of School and Hospital Hygiene of Interest to the Ophthalmic Surgeon" (Illustrated with Lantern Slides).

"Is Keratitis Ever Caused by Rheumatism?" by Dr. Leartus Connor, Detroit. Discussed by Drs. W. H. Snyder, Toledo, and Leartus Connor, Detroit.

"The Physiologic Action of Dionin," by Dr. W. H. Snyder, Toledo, Ohio. Discussed by Dr. H. H. Brown, Chicago.

"The Correction of Exophoria by the Development of the Interni," by Dr. W. H. Roberts, Pasadena, Cal. Discussed by Drs. G. C. Savage, Nashville; F. B. Eaton, San Francisco; Dudley S. Reynolds, Louisville; W. C. Posey, Philadelphia; Samuel D. Risley, Philadelphia; John E. Weeks, New York; C. H. Williams, Boston; Wm. Zentmayer, Philadelphia; Leartus Connor, Detroit, and J. S. Kirkendall, Ithaca, N. Y.

"Lateral Displacement of Tendon Insertions for the Cure of Strabismus," by Dr. Edward Jackson, Denver. Discussed by Drs. G. C. Savage, Nashville, and Edward Jackson, Denver.

"Transitory Paralysis of the Abducens; with Report of Cases," by Dr. Meyer Wiener, St. Louis. Discussed by Dr. H. Stillson, Seattle.

On motion of Dr. Samuel D. Risley, Philadelphia, the society voted to instruct the representative in the House of Delegates to nominate its guest, Prof. J. Hirschberg, of Berlin, for honorary membership in the Association.

The Section was called to order at 9 a. m. by the Chairman, Dr. C. R. Holmes.

Wednesday, July 12.—Morning.

"Demonstration of a Simple Method of Accurately Localizing by the *x*-ray a Foreign body in the Eye," by Dr. Vard H. Hulen, San Francisco. Discussed by Drs. J. E. Weeks, New York; E. Jackson, Denver, and V. H. Hulen.

"Blasting Eye Injuries," by Dr. John A. Donovan, Butte, Mont.

"Some Eye Injuries and Their Lessons," by Dr. F. C. Heath, Indianapolis.

"Traumatic Lesions of the Eye," by Dr. F. W. Miller, Los Angeles, Cal.

These three papers were discussed by Drs. E. Jackson, Denver; Prof. J. Hirschberg, Berlin; Eugene Smith, Detroit; W. E. Briggs, Sacramento; L. H. Taylor, Wilkesbarre; J. E. Weeks, New York; S. D. Risley, Philadelphia; M. D. Stevenson, Akron; J. A. Donovan, Butte, Minn., and F. G. Heath, Indianapolis.

"Description of an Advancement Suture, with Collective Suggestions Regarding Operations on the Ocular Muscles," by Dr. Mark D. Stevenson, Akron, Ohio. Discussed by Drs. G. C. Savage, Nashville; W. C. Posey, Philadelphia; J. E. Weeks, New York; J. A. L. Bradfield, La Crosse, Wis., and M. D. Stevenson.

Wednesday, July 12.—Afternoon.

The Section was called to order at 2 p. m., by the Chairman, Dr. C. R. Holmes.

Address (by special invitation) by Prof. J. Hirschberg, Berlin.

Dr. S. D. Risley, Philadelphia, moved that the society extend a vote of thanks to Professor Hirschberg for his eloquent and learned address, and that a copy be requested for publication in the transactions. The motion was carried by a standing vote.

Professor Hirschberg presented to the society a volume on Arabian Ophthalmology, dedicated to the Section, which was accepted by the Chairman with thanks.

"The Ocular Symptoms of Affections of the Accessory Sinuses of the Nose," by Dr. W. C. Posey, Philadelphia. Discussed by Drs. C. R. Holmes, Cincinnati; J. E. Brown, Minneapolis; W. H. Snyder, Toledo; F. W. Hilscher, Spokane; S. D. Risley, Philadelphia; Leartus Connor, Detroit; E. Jackson, Denver; J. A. Donovan, Butte, Mont.; J. A. L. Bradfield, La Crosse, Wis.; H. Stillson, Seattle, and W. C. Posey, Philadelphia.

"The Extraction of Uncomplicated Immature Senile Cataract," by Dr. A. E. Bulson, Jr., Fort Wayne, Ind. Discussed by Prof. J. Hirschberg, Berlin, and Drs. S. D. Risley, Philadelphia; J. A. Bach, Milwaukee; W. C. Posey, Philadelphia; Eugene Smith, Detroit; C. R. Holmes, Cincinnati, and A. E. Bulson, Jr.

"Endothelio-Cylindroma of the Orbit, with Report of a Case. Removal, with Preservation of the Vision and Motility of the Eye," by Dr. John E. Weeks, New York. Discussed by Drs. C. R. Holmes, Cincinnati; E. V. L. Brown, Chicago, and J. E. Weeks.

"The Prevention and Cure of Progressive Axial Myopia by Appropriate Treatment of the Internal and External Recti Muscles; with Report of Cases," by Dr. F. S. Crocker, Chicago. Discussed by Drs. G. C. Savage, Nashville, and F. S. Crocker.

Thursday, July 13.—Morning.

The Section was called to order at 9 a. m., by the Chairman, Dr. C. R. Holmes.

"Rat-tail Tendons for Sutures in Eye Surgery," by Dr. Kaspar Pischel, San Francisco.

Dr. de Beck, Seattle, demonstrated a number of ingenious devices of the Indians of the northwest for the prevention of snow-blindness, all of which were made of wood and on the principle of our "goggles."

"Iritis Tuberculosa as Diagnosed and Treated by Koch's Tuberculin," by Drs. W. A. Gamble and E. V. L. Brown, Chicago. Discussed by Drs. A. E. Bulson, Jr., Fort Wayne; Kaspar Pischel, San Francisco, and E. V. L. Brown.

"New Test Types Made According to Geometrical Progression," by Dr. Charles H. Williams, Boston. Discussed by Drs. D. S. Reynolds, Louisville; G. C. Savage, Nashville, and C. H. Williams.

"Subconjunctival Salt Injections," by Dr. S. D. Risley, Philadelphia. Discussed by Drs. W. Zentmayer, Philadelphia; L. H. Taylor, Wilkesbarre; J. E. Weeks, New York; A. E. Bulson, Jr., Fort Wayne; S. L. Ledbetter, Birmingham, Ala.; Leartus Connor, Detroit; Kaspar Pischel, San Francisco; Prof. J. Hirschberg, Berlin, and S. D. Risley.

"Sympathetic Inflammation Following Panophthalmitis," by Dr. William Zentmayer, Philadelphia. Discussed by Drs. E. V. L. Brown, Chicago; Prof. J. Hirschberg, Berlin, and W. Zentmayer.

"Non-toxic Amblyopia," by Dr. T. W. Moore, Huntington, W. Va. Discussed by Drs. G. C. Savage, Nashville, Dudley S. Reynolds, Louisville; W. C. Posey, Philadelphia; S. D. Risley, Philadelphia; Leartus Connor, Detroit, and T. W. Moore.

Thursday, July 13.—Afternoon.

The Section was called to order at 2 p. m., by the Chairman, Dr. C. R. Holmes.

The Executive Committee, by its Chairman, Dr. John E. Weeks, New York, reported the following nominations for officers of the Section for the ensuing year: Chairman, Dr. L. H. Taylor, Wilkesbarre, Pa.; Vice-Chairman, Dr. W. H. Wilder, Chicago; Secretary, Dr. A. E. Bulson, Jr., Fort Wayne, Ind.; delegates, Dr. C. R. Holmes; Cincinnati; alternate, Dr. Leartus Connor, Detroit.

The Committee also recommended the following resolution for adoption:

Resolved, That not more than half the time available for any one session of the Section shall be allotted to the reading of papers, and that the section officers are instructed to arrange the program in accordance with this rule.

Resolved, That each person proposing to read a paper before the Section shall inform the section officers of the maximum time he will require to present it, that such time shall be taken into account in deciding to give it a place on the program; and that such time limit shall be rigidly enforced.

The report of the committee was submitted to the Section and unanimously adopted.

"Amblyopia Caused by Wood Alcohol," by Dr. C. S. G. Nagle, San Francisco. Discussed by Dr. Brown.

"Experimental and Clinical Evidence of Dynamic (Spastic) Astigmatism. Practical Conclusions," by Dr. F. B. Eaton, San Francisco. Discussed by Drs. Posey, Philadelphia; de Beck, Seattle, and M. D. Stevenson, Akron, Ohio.

"A Case of Melanotic Sarcoma of the Choroid," by Dr. L. H. Taylor, Wilkesbarre, Pa.

"A Contribution to the Etiology of Pigmented Sarcoma of the Choroid," by Prof. J. Hirschberg, Berlin.

These two papers were discussed by Drs. D. S. Reynolds Louisville; J. E. Weeks, New York; Kaspar Pischel, San Francisco; L. H. Taylor, Wilkesbarre, and Professor Hirschberg, Berlin.

The Section extended a vote of thanks to Dr. J. F. Dixon, of Portland, for his kindness in arranging for the meeting hall, etc., and to the officers of the Section for their excellent work.

A vote of thanks was also extended to Prof. J. Hirschberg, Berlin, for his kindness in being present and in addressing the society.

Section on Hygiene and Sanitary Science.

Tuesday, July 11.

In the absence of the Chairman, Dr. John S. Fulton, Baltimore, the Secretary, Dr. M. L. Price, Baltimore, called the Section to order at 2 p. m., and Dr. H. G. Beyer was asked to take the Chair temporarily.

Dr. Beyer took the Chair and read the Chairman's address from the manuscript of Dr. Fulton. The address was discussed by Drs. Heg, Chapman, Price, Morrison, Janeway, Foster, Powers, Lindsay, Carroll, and Browning.

Wednesday, July 12—Morning.

Dr. Heg in the Chair.

"Recent Progress in Matters of Water Supply and Sewage Disposal," by Mr. G. W. Fuller, New York City, was read by Dr. Beyer, in the absence of the author. Discussed by Drs. Foster, Price, Janeway, Lewis, Cummings, Pierce, Beyer, and Heg.

Dr. H. G. Beyer, U. S. Navy, read a paper on "The Water Supply of Ships from Its Early Beginnings to the Present Time." Discussed by Drs. Lewis, Woodruff, Powers, Price, and Browning.

Dr. Charles E. Woodruff, U. S. Army, read a paper on "Cholera." Discussed by Drs. Lewis and Woodruff.

Wednesday, July 12—Afternoon.

Dr. Beyer in the Chair.

Dr. Browning requested a discussion on the subject of the systematic disinfection of school buildings, but at this point Dr. Woodruff offered the following resolution, which he moved that the Section on Hygeine and Sanitary Science adopt and submit to the House of Delegates.

Whereas, The science of prevention of disease having been long established on a solid scientific basis, it is now time that this fact be recognized by the national Legislature; be it

Resolved, By the American Medical Association that the attention of the people and of their representatives in Congress be directed to the fact that no adequate provision by law has yet been made to avoid in time of war the preventable deaths by disease of the soldiers who offer their lives for the preservation of the Nation; be it further

Resolved, That this Association also heartily indorses the statement of the President of the United States that the people have not compelled their representatives to provide adequately in advance for the medical system, in its personnel, material, its organization and physical instruments necessary to make that organization effective, which alone, if prepared in advance, will obviate the trouble which otherwise is certain to come if we have a war.

Dr. Woodruff addressed the meeting in explanation of his offer of the resolution, and the resolution was discussed by Drs. Beyer, Janeway, Lewis, and Woodruff.

The motion on the resolution was then put by the Chairman and carried.

Dr. James Carroll, United States Army, read a paper on "Some Experiments in Feeding Cultures of Bacillus Typhosis." Discussed by Drs. Ryland, Morrison, Beyer and Carroll.

Thursday, July 13—Afternoon.

ELECTION OF OFFICERS.

The Secretary called the meeting to order and stated that the first business was the election of officers. The Secretary then appointed a nominating committee, consisting of Dr. Carroll, of Washington, D. C., Chairman; Dr. Chapman, of Ohio, and Dr. Foster, of California. The committee reported the following nominations: Chairman, H. G. Beyer, U. S. Navy; Secretary, M. L. Price, Baltimore; member of the House of Delegates, James Carroll, U. S. Army; Executive Committee, G. T. Swartz, Rhode Island; H. M. Braehm, Minnesota; J. W. Fulton, Baltimore.

Dr. Lewis: Let me ask if the Executive Committee is appointed or elected?

The Secretary: The Executive Committee is provided for by the by-laws of the American Medical Association, but it is customary for the sections to indorse their names.

Dr. Dewey, of Washington, then moved to substitute the name of Dr. Denslow Lewis, Chicago, for Chairman; Dr. E. J. Heg, of Washington, for Secretary, and Dr. H. G. Beyer for Delegate to the American Medical Association.

There was no contest as to the nominations on the Executive Committee, and, on ballot, Dr. Denslow Lewis was elected Chairman.

Dr. Lewis then nominated Dr. H. W. Dewey, of Washington, for Delegate to the House.

On ballot Dr. Elmer J. Heg was elected Secretary.

On ballot Dr. Dewey was elected Member of the House of Delegates.

The Secretary then requested Dr. Lewis to take the Chair temporarily. Dr. Lewis addressed the meeting.

Dr. D. N. Carpenter, U. S. Navy, read a paper on "The Relation of the Water Supply to the Diseases of the Panama Isthmus." Discussed by Drs. Lewis and Carpenter.

Dr. M. L. Price, of Baltimore, read a paper on "The Principles of Life." Discussed by Dr. Lewis.

Section on Diseases of Children.

Tuesday, July 11—Afternoon.

The Section was called to order at 2:45 p. m. by the Chairman, Dr. John Lovett Morse, of Boston.

The Secretary, Dr. J. Ross Snyder, then took the Chair and the Chairman delivered his address: "The Teaching of Pediatrics."

"A Plea for National and Local Boards of School Hygiene," by Dr. Alice M. Smith, Tacoma, Wash. Discussed by Drs. Wahrer, Fort Madison; Fairbanks, Boston; Garrison, Dixon, Ill.; McGavin, Portland, and Smith.

"Rules for the Care of Young Infants in Public Institutions," by Dr. H. M. McClanahan, Omaha. Discussed by Drs. John C. Cook, Chicago; Arthur W. Fairbanks, Boston; Alice M. Smith, Tacoma; Lindsay, Boulder; Wahrer, Fort Madison, and McClanahan.

Wednesday, July 12—Morning.

The Section was called to order shortly after 9 a. m. by the Chairman, Dr. John Lovett Morse. Dr. A. C. Cotton, of Chicago, was appointed to serve on the Executive Committee in the place of Dr. C. G. Kerley, New York City.

"On Amaurotic Family Idiocy," by Dr. A. C. Cotton, Chicago. Discussed by Drs. Morse and Cotton.

"The Prevention of Summer Diarrhea," by Dr. Maurice Ostheimer, Philadelphia. Discussed by Drs. Wahrer, Fort Madison; Silver, New York; Kate Lindsay, Boulder; C. Blumer, San Francisco; Arthur W. Fairbanks, Boston; A. C. Cotton, Chicago; Wells, North Yakima; Moore, New York City, and Ostheimer.

"A Study of Fifteen Cases of Diarrhea in Children," by Dr. John C. Cook, Chicago. Discussed by Drs. Michael, Chicago; Fairbanks, Boston, and Cook.

"Ataxia of Central Origin Appearing in Childhood," by Dr. Arthur W. Fairbanks, Boston. (With lantern slide exhibition at close of session.) Discussed by Drs. Wahrer, Fort Madison, and H. E. Garrison, Dixon, Ill., and Fairbanks.

Wednesday, July 12—Afternoon.

The Section was called to order by the Chairman.

"Pneumonia in the Young," by Dr. Edward F. Wells, Chicago. Discussed by Drs. A. C. Cotton and William J. Butler, Chicago; Riley, New York; Fairbanks, Boston; Morse, Boston, and Wells.

"Pleural Effusions in Children," by Dr. C. F. Wahrer, Fort Madison. Discussed by Drs. Cotton, Chicago; Butler, Chicago; Hanson, Cleveland, and Wahrer.

"Typhoid Fever in Children," by Dr. William J. Buter, Chicago. Discussed by Drs. Quigley, Tacoma; Farrbanks, Boston, and Butler.

Thursday, July 13—Morning.

The session was called to order by the Chairman about 9:30 a. m.

"The After-Effects of Diphtheria on the Heart," by Dr. Franklin W. White, Boston, was read by the Secretary. Discussed by Drs. C. B. Campbell, Maine; H. M. McClanahan, Omaha; Butler, Chicago; Fairbanks, Boston; C. F. Wahrer, Fort Madison; H. E. Garrison, Dixon; Kate Lindsay, Boulder; W. J. Butler, Chicago, and Morse, Boston.

"The Management of Children with Typhoid Fever," by Dr. W. C. Hollopeter, Philadelphia. Discussed by Drs. John C. Cook, Chicago; Kate Lindsay, Boulder; Cotton, Chicago; Morse, Boston; H. E. Garrison, Dixon, and Hollopeter.

Thursday, July 13—Afternoon.

The Section was called to order by the Chairman about 2:30 p. m.

Dr. H. M. McClanahan, on behalf of the Executive Committee, made the following announcement of nominations: Chairman, Dr. W. C. Hollopeter, Philadelphia; Secretary, Dr. William J. Butler, Chicago; Delegate, Dr. C. F. Wahrer, Fort Madison.

The Secretary was authorized to cast the ballot for the nominations. The ballot was so cast.

The Secretary, Dr. J. Ross Snyder, of Birmingham, offered the following resolution:

"*Resolved*, by the Section on Diseases of Children of the American Medical Association, That the Chairman appoint a committee of three to ascertain the average number of hours and the relative importance given to the subject of pediatrics in the courses of instruction in the medical schools of the country; to investigate the various methods and the efficiency of instruction in this subject; and that this committee shall make a report to this body at its next annual meeting."

Dr. John C. Cook, of Chicago, moved that Dr. J. Ross Snyder be made chairman of such a committee. Carried.

The Chairman announced that he would appoint additional members of the committee later.

Dr. Cook moved that a vote of thanks be tendered the Secretary, Dr. J. Ross Snyder, for his work in making a list of the previous Chairmen and Secretaries of the Section to date. The motion was seconded by Dr. Wahrer and carried.

Section on Nervous and Mental Diseases.

Tuesday, July 11—Afternoon.

The Section was called to order at 2:20 p. m. by the Chairman, Dr. J. H. McBride, Pasadena.

The Chairman's address was read by Dr. J. H. McBride, Pasadena.

The report of the Committee on Drug Addictions was read by the Chairman, Dr. Smith Ely Jeliffe, New York. On motion the report was accepted and the committee continued for one year.

"Defects of Will in Practical Medicine," by Dr. H. T. Pershing, Denver. Discussed by Drs. D. R. Brower, Chicago; Tomlinson, St. Peters, Minn.; G. R. Clark, Dearborn: Gilbert, Portland, and Pershing.

"Neurasthenoid Conditions—So called Neurasthenia," by Dr. Robert Hessler, Logansport, Ind. Discussed by Dr. J. H. McBride, Pasadena.

No other authors on the program for Tuesday afternoon being present, on motion, it was decided to take up the program for Wednesday morning.

On motion, the Secretary read the paper by Drs. Charles K. Mills and T. H. Weisenberg, Philadelphia, on "The Localization of the Higher Psychic Functions, Especially with Reference to the Prefrontal Lobe." Discussed by Drs. Tomlinson, St. Peter's, Minn.; House, Portland, Ore., and J. H. McBride, Pasadena, Cal.

"Landry's Paralysis, with Report of Case," by Dr. Robert McGregor, Saginaw, Mich.

"Types of Multiple Neuritis," by Dr. David I. Wolfstein, Cincinnati.

These papers were discussed by Drs. H. T. Pershing, Denver; Brower, Chicago; House, Portland; G. R. Clark, Dearborn; H. G. Brainerd, Los Angeles; Tomlinson, St. Peter, Minn.; McGregor and Wolfstein.

Wednesday, July 12—Morning.

The session was called to order at 10 a. m. by the Chairman.

On motion, the Secretary read the paper by Dr. F. W. Langdon, Cincinnati, on "Nervous and Mental Manifestations of Preper-nicious Anemia." Discussed by Drs. Wolfstein and Tomlinson.

"Periodic Paralysis," by Dr. G. E. Holtzapple, York, Pa. Discussed by Drs. Kilbaum and Holtzapple.

On motion, the following committee was appointed to nominate officers of the Section for the ensuing year: Drs. H. A. Tomlinson, St. Peter, Minn., Chairman; H. G. Brainerd, Los Angeles, Cal., and H. T. Pershing, Denver.

"The Tabetic Foot: Its Importance in the Causation of the Ataxia of the Lower Extremities," by Drs. Sidney I. Schwab and Nathaniel Allison, St. Louis (read by Dr. Schwab). Discussed by Drs. Pershing, Punton, Jeliffe, Wolfstein, Putnam, McBride, and Schwab.

"Clinical Reports of Some Cases of Hysteria," by Dr. C. C. Hersman, Pittsburg.

"The Psychopathic Manifestations of the Non-insane Psychoneuroses," by Dr. John Punton, Kansas City. Discussed by Drs. H. A. Tomlinson, St. Peter, Minn.; Smith Ely Jeliffe, New York; H. T. Pershing, Denver, and J. H. McBride, Pasadena.

Wednesday, July 13—Afternoon.

The meeting was called to order at 2:40 p. m. by the Chairman.

"Public Care of the Insane," by J. M. Barstow, Council Bluffs, Iowa. Discussed by Dr. G. R. Clark, Dearborn, Mich.

"Psythosis of Morphinism," by Dr. T. D. Crothers, Hartford. Discussed by Drs. Punton, Clark, and Crothers.

"Comparison of the Quick and Slow Methods of the Treatment of Morphinism," by Dr. A. J. Pressey, Cleveland. Discussed by Drs. Crothers, Brainard, and Pressey.

"The Psychoses of Heart Disease," by Dr. William House, Portland, Ore.

The Committee on Nominations reported the following nominations, and the respective candidates were, on motion, duly elected. Chairman, Dr. Wharton Sinkler, Philadelphia; Secretary, Dr. David I. Wolfstein, Cincinnati; Executive Committee, Drs. J. H. McBride, Pasadena; H. T. Pershing, Denver, and F. W. Langdon, Cincinnati; Delegate, Dr. J. H. McBride, Los Angeles; Alternate, Dr. David I. Wolfstein, Cincinnati.

"The General Conditions Associated with Insanity; Their Correlation and Certain Deductions," by Dr. H. A. Tomlinson, St. Peter, Minn. Discussed by Drs. Clark, Brainard, McBride, Tomlinson, and House.

Section on Pathology and Physiology.

Tuesday, July 11—Afternoon.

The Section was called to order at 2:00 o'clock by the Chairman, Dr. Winfield S. Hall.

The Chairman read his address, entitled "Pathologic Physiology, a Neglected Field."

"The Freezing Points of Blood and Urine in Pneumonia, with a Description of a New Method," by Dr. F. E. Schmidt, Chicago. was read by Dr. W. A. Bessesen, Chicago.

"Variations in the Ratio of Diameters of the Normal Chest at Different Ages. The Form of the Phthisical Chest," by Dr. W. A. Bessesen, Chicago. Discussion by Dr. S. Woods Hutchinson.

"The Influence of Chronic Passive Congestion and Cirrhosis of the Liver on the Connective Tissues of the Spleen," by Dr. Henry A. Christian, Boston. Discussion by Dr. W. Ophiils, San Francisco.

The Chairman announced that a number of papers had been sent in by their authors who had been, at the last moment, unable to be present. Each one, he said, represents a good deal of research work, and they will undoubtedly be interesting to a large portion of those gathered here.

Dr. C. A. Smith, Seattle, moved that these papers be read. Carried.

The paper of Dr. L. Breisacher, Detroit, Mich., entitled "Minimal Albumin Requirement in Health and Disease," was read by Dr. Henry A. Christian, Boston.

Dr. Brubaker read the paper by Dr. E. L. Whitney, Baltimore, entitled "Errors in the Determination of Free HCl in the Gastric Juice."

Dr. C. R. Krone, of Oakland, was called to the Chair, and Dr. Hall read the paper of Dr. J. C. Hemmeter, Baltimore, entitled "Are the Proteolytic and Milk Curdling Effects of the Gastric Juice Due to One and the Same Enzyme?"

"Mucocele of the Appendix," by Dr. Alfred Stengel, Philadelphia. Discussion by Drs. C. R. Krone, Oakland, Cal.; W. L. Bierring. Iowa City; New, Indianapolis, and Christian, Boston.

Wednesday, July 12—Morning.

The Section was called to order by the Chairman at 9:30 o'clock, and Dr. Krone, of Oakland, was called to the Chair.

The paper of Dr. F. R. Zeit, Chicago, entitled "Morphologic and Histogenetic Characteristics of Endothelial Tumors," was read by Dr. Rosenau, of Washington, D. C.

The paper of Dr. W. B. Cannon, Boston, entitled "Some Observations on Auscultation of the Abdomen," was read by Dr. H. A. Christian, Boston.

"Further Studies on Streptococcus Infection," by Dr. G. F. Ruediger, Chicago. Discussion by Dr. Rosenau.

Dr. H. A. Christian read a paper entitled "The Pathology of Varicella," by Dr. E. E. Tyzzer, Boston.

Dr. Christian read a paper by Mr. John Bryan, Jr., Boston, on "Myoma of the Esophagus."

Dr. Christian read an invitation from the British Columbia Medical Association, which meets July 18-19, at Vancouver, expressing the wish that a large number would attend that meeting.

The Chairman appointed as a nominating committee Dr. Krone, Oakland, Cal., Chairman; Dr. C. A. Smith, Seattle, and Dr. Wynn, Indianapolis.

Dr. Christian suggested the advantages to the Section if the By-Laws could be changed so as to allow members to read papers in more than one Section.

The matter was discussed at length by Drs. Christian, McFarland, Oettinger, Rosenau, and Hall, at the conclusion of which Dr. Oettinger moved the appointment of a committee of three, consisting of the Chairman, Secretary and Delegate (Drs. Hall, Christian and McFarland) to draft a resolution to be acted on tomorrow morning. Carried.

Thursday, July 13—Morning.

The Section was called to order at 9:30 o'clock a. m. by the Chairman.

Dr. Bernard Oettinger, Denver, read a paper entitled "Methemoglobin as a Factor of Conservative Metabolism." Discussion by Dr. Kemp, Champaign, Ill.

Dr. G. T. Kemp. Champaign, Ill., read a paper entitled "The Blood Plates: Their Microchemistry, Physiology and Pathology." Discussion by Drs. Harlow, Boulder, Colo.: Oettinger, Denver; Krone, Oakland, Cal.; Rosenau, Washington, D. C.; Foss, Phoenix, Ariz.

The Secretary read the paper of Dr. Joseph H. Pratt, Boston, entitled "A Clinical Study of the Various Methods Employed of Determining the Number of Plates in the Blood." Discussion by Dr. Kemp, Champaign, Ill.

Dr. Ruediger, Chicago, read the paper of Dr. George H. Weaver, Chicago, entitled "Ulcero-Membranous Angina (Vincent's Angina) and Stomatitis." Discussion by Dr. Ophiils.

Dr. F. S. Lee, New York City, read a paper on "Temperature and Muscle Fatigue." Discussion by Dr. Kemp.

The Secretary read a paper by Dr. E. E. Southard, Boston, entitled "A Case of Cholesterin Stones in the Brain."

The Secretary also read "A Study of Brain Infections with the Pneumococcus." also by Dr. Southard. Discussion by Dr. Wynn.

Dr. Frank B. Wynn, Indianapolis, gave an exhibition of apparatus and read a paper on "Pathologic Report on a Case of Plexiform Neurofibroma." Discussed by Dr. Oettinger.

The Secretary read a paper by Dr. Martin H. Fischer, San Francisco, entitled "A Physico-chemical Theory of Fertilization."

ELECTION OF OFFICERS.

Dr. Krone, Chairman of the Nominating Committee, reported as follows:

Your committee recommends for election: For Chairman, Dr. Henry A. Christian, Boston; for Secretary, Dr. W. L. Bierring, Iowa City, Iowa; for Delegate, Dr. M. J. Rosenau, Washington, D. C.

The report was, on motion duly made and seconded, accepted and adopted.

Dr. Joseph McFarland announced that the proposed amendment to the by-laws, in order to give the right to read papers before more than one section, had received favorable consideration by the House of Delegates' committees and that favorable action was expected.

Dr. Wynn moved that the Section extend its thanks for the efficient conduct of the Chairman and Secretary and their courteous treatment toward the members of the Section.

Dr. Wynn put the motion and it was carried unanimously.

Marriages

Philip Rovno, M.D., to Miss Julia Stark, both of Philadelphia, June 25.

Louis C. Jacobson, M.D., to Mis Jessie Leone White of Elroy, Wis., May 6.

Chauncey F. Chapman, M.D., Chicago, to Miss Cora Kennard Pitcher, July 19.

J. M. Sokol, M.D., Spencer, Iowa, to Miss Winifred Dando of Chatham, Ont., June 28.

Philip Leon Bereano, M.D., to Miss Clara Daneis, both of New York City, July 16.

Albert Moore Barrett, M.D., Boston, to Miss Eliza Bowman of Clinton, Iowa, July 8.

Simeon L. Carson, M.D., Lower Brule, S. D., to Miss Carol H. Clark of Detroit, Mich.

Ernest Leslie Ward, M.D., to Miss Adelaide Leah Codogan, both of Osceola, Pa., June 28.

Paul H. Tetreau, M.D., Larose, La., to Mrs. May Lambert Harang, at New Orleans, June 27.

Sheridan E. Gardner, M.D., to Miss Blanche L. Irish, both of Mount Pleasant, Mich., June 24.

Gerhard Hutchison Cocks, M.D., to Miss Maud Eleanor Knapp, both of New York City, June 29.

Washington B. Grove, M.D., surgeon U. S. Navy, to Miss Elizabeth Thompson, at Summit Point, W. Va., July 8.

Deaths

Oscar B. Harriman, M.D. Dartmouth Medical School, Hanover, N. H., 1861; first president of the Franklin County (Iowa) Medical Society; member of the Iowa State Medical Society, the Austin Flint Medical Society and State and National Associations of Railway Surgeons; a member of the State Board of Medical Examiners; coroner of Franklin County for 6 years; county physician for 10 years, and postmaster from 1885 to 1889, died July 9 from cerebral hemorrhage, after a prolonged period of ill health, aged 68.

Thomas G. Horn, M.D. St. Louis Medical College, 1868, a member of the American Medical Association; a pioneer physician of Colorado Springs, an earnest worker for good government, and a ready helper in all philanthropic work; ex-president of the Colorado State Medical Society; member of the El Paso County Medical Society; for 8 years a trustee of Denver University, died at his home in Colorado Springs from seiatica, July 14, aged 72.

Albert L. Macon, M.D. Medical Department of the University of Tennessee, Nashville, 1893, a member of the American Medical Association, and one of the most prominent young practitioners of Clarksville, Tenn., died at his home in that city, July 11, from typhoid fever, after a long illness, aged 32.

David P. Middleton, M.D. Kentucky School of Medicine. Louisville, 1860, surgeon of the Fourth Kentucky Volunteer Cavalry during the Civil War; several times a member of the Louisville Board of Education, died at his home in Louisville, from acute dysentery, July 4, aged 74.

Gustavus Hoepfner, M.D. University of Kiel, Germany, 1862, who has been suffering from heart trouble for a long time, died suddenly at his home in Davenport, Iowa, July 12, aged 69. The physicians of the city at a special meeting called July 13 adopted resolutions of sympathy.

Henry Mortimer Anderson, M.D. College of Physicians and Surgeons in the city of New York, for more than half a century a resident of Rome, Ga.; a surgeon in the Confederate service during the Civil War, died at the home of his daughter in Raleigh, N. C., June 26, aged 81.

Samuel W. Leeman, M.D. College of Physicians and Surgeons, St. Louis, 1895, professor of principles and practice of medicine in Baylor University College of Medicine, Dallas; a member of the state, district and county medical societies, committed suicide in his office in Dallas, Texas, by shooting himself through the head July 5.

William James Cox, M.D. Southern Medical College, Atlanta, Ga., 1892, Barnesville, Ga., a member of the American Medical Association, Medical Association of Georgia, and Jasper County Medical Society, died at a hotel in Madison, Ga., July 3, from an overdose of morphin.

Thomas G. Johnston, M.D. McGill University Medical Department, Montreal, 1871, of Sarnia; member of Parliament for West Lambton, twice mayor of Sarnia, died from septicemia following erysipelas, at Ottawa, Ont., July 4, after an illness of one month, aged 56.

Charles A. Carroll, M.D. University of Maryland School of Medicine, Baltimore, 1864, one of the distinguished family of that name, died suddenly in his room at the Church Home and Infirmary in Baltimore, July 14, from heart disease, aged 60.

James T. Edwards, M.D. New York University, New York City, 1857; assistant surgeon Ninety-seventh Ohio Volunteer Infantry during the Civil War, died at his home in Coschocton County, from general paralysis, after an illness of six weeks, aged 75.

John P. Sterrett, M.D. University of Virginia Medical Department, Charlottesville, 1843, died at his home in Pittsburg, Pa., July 18, aged 79. Three weeks before he had injured his knee and had been confined to bed on account of the accident.

William Kennedy Carroll, M.D. University of Maryland School of Medicine, Baltimore, 1873, died at Arrow, Colorado, July 18, from tuberculosis, aged 53. His remains were interred at Queenstown, Md., where he had resided for many years.

Eugene E. Holroyd, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1878, committed suicide at Nilwood, Ill., by taking arsenic, carbolic acid and strychnin, July 10, aged 57.

Westwood James Baker, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1873, of Fresno Cal., died at his old home, Courtland, Ala., July 3, after an illness of two years, from Bright's disease, aged 56.

George F. Fanning, M.D. Baltimore Hospital Medical College, New York City, 1877, died at his home in Port Jefferson, Suffolk County, L. I., July 6, after an operation for a malignant tumor of the stomach, aged 54.

Sydney Jones, M.D. McGill University Medical Department, Montreal, 1901, of Cleveland, Ohio, died at Lakeside Hospital in that city July 12, after an operation on the glands of the neck, after a long illness, aged 30.

John M. McDonald, M.D. Western Pennsylvania Medical College, Pittsburg, 1897, a member of the state, county and local medical societies, died at his home in Pittsburg, July 6, after a lingering illness, aged 29.

Alfred C. Blevins, M.D. University of Nashville Medical Department, 1861, surgeon of the Third Tennessee Infantry C. S. A., during the Civil War, died at his home in Dayton, Tenn., July 25, aged 75.

Robert Dunn McIlvaine, M.D. University of Virginia, Medical Department, Charlottsville, 1885, died at his home in Petersburg, Va., July 13, from cerebral hemorrhage after an illness of four days, aged 41.

William O'N. Mendenhall, M.D. Rush Medical College, Chicago, 1870, sometime president of the Illinois State Medical Society, died at his home in Richmond, Ind., July 17, after a long illness, aged 71.

George B. Lockwood, M.D. Jefferson Medical College, Philadelphia, 1897, assistant physician at the Medfield (Mass) Insane Asylum, died July 14 at Albuquerque, N. M., after a long illness, aged 30.

James F. Graves, M.D. St. Louis Medical College, 1878, local surgeon of the Wabash Railway at Montgomery, Mo., shot himself through the heart at his residence July 4, and died instantly, aged 58.

Abraham Miller, M.D. Rush Medical College, Chicago, 1868, a retired practitioner of Bloomington, Ind., died at his home in that city, July 11, from cerebral hemorrhage, after a short illness, aged 71.

Mercer Stillwell Davie, M.D. Jefferson Medical College, Philadelphia, 1869, one of the organizers of the Dale County (Ala.) Medical Society, died recently at his home in Dotham (Ala.)

Earl Mathewson, M.D. College of Physicians and Surgeons in the City of New York, 1879, for many years medical examiner of Durham, Conn., died at his home in that town, July 6, aged 55.

Charles W. Crary, M.D. Jefferson Medical College, Philadelphia, 1871, surgeon-major in the Civil War, died at his home in Chicago, July 13, from cerebro-spinal paralysis, after a long illness, aged 70.

William P. Ewing, M.D. Jefferson Medical College, Philadelphia, 1846; formerly president of the West Virginia State Board of Health, died at his home in Charleston, W. Va., July 19, aged 83.

Horace Lathrop, M.D. Jefferson Medical College, Philadelphia, 1852, died at his home in Cooperstown, N. Y., July 11, from cerebral hemorrhage, after an invalidism of twelve years, aged 80.

Henry Lanciaux, M.D. University of the Victoria College, Coburg, Ont., 1890, died at his home in Manville, R. I., June 30, from consumption after an illness of three months, aged 41.

B. B. Johns, M.D. (years of practice, Indiana), for many years a member of the state legislature, died at his home in Gentryville, Ind., July 7, after a prolonged illness, aged 65.

Charles Lowry, M.D. Pennsylvania, 1863, for two years secretary of the Kansas State Board of Health, died at his home in Topeka, July 11, from kidney disease, aged 64.

Felix A. Gillespie, M.D. Medical College of Alabama, 1889, mayor of Hanceville, Ala., died at his home in that city, July 17, from typhoid fever, after an illness of four weeks.

George J. Ahren, M.D. New York University, New York City, 1895, formerly house surgeon at St. Francis' Hospital, New York City, died in that institution July 4, aged 34.

Lemuel H. Hammond, M.D. Albany Medical College, 1858, of Worcester, Mass., died at the home of his daughter in Waterbury, Conn., after a short illness, aged 69.

William H. Lyne, M.D. Medical College of Virginia, Richmond, died in the Memorial Hospital, Richmond, July 16, from complications following appendicitis, aged 32.

Charles Thomas Harris, M.D. University of Maryland School of Medicine, Baltimore, 1904, of Bethel Hill, N. C., died at Roxboro, N. C., July 6, from typhoid fever.

James A. McKinney, M.D. Rush Medical College, Chicago, 1895, died at his home in Grand Valley, Colo., July 7, from heart disease with complications, aged 35.

Clarence G. Keefer, M.D. Baltimore University School of Medicine, 1892, of Baltimore, died at the City Hospital, Baltimore, July 11, after a long illness.

James D. Burch, M.D. Kentucky School of Medicine, Louisville, 1864, died suddenly at his home in Amora, Texas, June 25, from heart disease, aged 67.

Wilber Kelley, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1882, died from cerebral hemorrhage after an illness of 12 hours, aged 47.

John A. McGee, M.D. University of Louisville Medical Department, 1876, died at his home in Rice, Texas, July 1, after a lingering illness.

Revaux O. Dieuis, M.D. University Medical College of Kansas City, Kan., 1897, was found dead in his room at Terrell, Tex., July 6, aged 29.

Victor G. R. J. Rehm, M.D. Jefferson Medical College, Philadelphia, 1884, died at his home in Philadelphia, from nephritis, July 22, aged 47.

Daniel Howes, M.D. Jefferson Medical College, Philadelphia, 1864, died at his home in South Lyon, Mich., July 4, after a brief illness.

Anna Frances Donoghue, M.D. New York, 1904, died suddenly at her home in New York, July 19, from heart disease, aged 32.

C. Wright Lindsey, M.D. Medical Department Arkansas University, Little Rock, 1900, died recently and was buried July 14.

Edwin D. Simpson, M.D. College of Physicians and Surgeons, New York, 1874, died at his home in New York City, June 23, aged 50.

Paul Hauser, M.D. Griefswald, Germany, 1872, died at his home in Brooklyn, N. Y., July 9, from senile debility, aged 71.

J. Harrison Hartwell, M.D. Jefferson Medical College, Philadelphia, died at his home in Philadelphia, June 25, aged 77.

Sarah A. Marshall, M.D. Chicago, 1883, of Elgin, Ill., died in Oak Park, Ill., July 14, after a long illness, aged 61.

John T. Keats, M.D., died at Baltimore June 19, aged 70.

Abroad.

Herman Nothnagel, M.D., the great Vienna clinician, instructor and investigator, died suddenly, July 6, from the effects of arteriosclerosis of the heart, aged 64. He had attended to his daily round of professional duties, not returning home from his last call till half past ten, and the heart failure occurred soon after. He was born in Brandenburg and became assistant to Leyden in 1865, then assumed a professorship at Freiburg and later at Jena and was called in 1882 to the chair of medicine at Vienna which he made world famous by his incumbency. He has been a member of the Austrian House of Lords since 1902, and has had all kinds of honors heaped on him. Many of his works are as well known in this country as abroad, especially his studies on the physiology and pathology of the nervous system, on epilepsy, and on intestinal and peritoneal affections. His saying that "only a good man can be a good physician" is one of the axioms of the profession nowadays, and well illustrates his own view of life.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

PROFESSIONS ENTITLED TO GRATUITIOUS SERVICES.

Arkansaw Subscriber asks what professions are generally considered entitled to treatment without charge.

The Principles of Ethics say that gratuitous services should be limited to practicing physicians, their immediate family dependents, persons in indigent circumstances, and certain public duties (sanitation and public hygiene). Dentists, druggists, nurses, etc., are usually given a discount by physicians who live in the same neighborhood, and they usually reciprocate. When members of these related professions are given or give *free* service, it is usually not because of the fact that their professions are related, but because of previous reciprocal relations, mutual understandings or close business relations; for example, between the physician and the pharmacist over whose store the former has his office, between the dentist and the physician to whom he usually sends his patients who need systemic treatment, etc. The nurse, however, is not expected to give free services, because her work usually takes all her time, while that of the physician is one item in a day's work. Similar questions have been answered in The Journal, March 5, 1904, p. 663; March 26, 1904, p. 844; Feb. 4, 1905, p. 405.

RESEARCH BY THE COUNTRY PRACTITIONER.

Wardsville, Ont., July 18, 1905.

To the Editor:—I write to ask you to give some of the problems that might be attacked by a general practitioner of medicine in the country. It is interesting work to read and to apply the works of others. I think it well to do some original investigation ourselves, and with a little direction our spare time might be put to good use. W. H. Rennie.

Answer.—It is exceedingly difficult, if not impossible, to give advice of real value in regard to problems that may be attacked by physicians in general country practice without knowing something of the qualifications, the equipment and the tastes of the prospective investigator. At the present time progress in research as ordinarily understood means, at least as a general rule, expertness to a reasonable degree in some one special method of investigation. Roughly, the methods now in vogue in medical research may be divided into four overlapping groups, to-wit, chemical, bacteriologic, anatomic (gross and microscopic), and, last but not least, clinical. Consequently, in order to suggest actual problems for independent work, it would be necessary in the individual case to know within which one of these main groups the work would have to be done. We would, therefore, make the general suggestion that persons who, like the writer of this request, feel interested in original work, place themselves in direct communication with some known investigator and teacher in the field in which each person feels that his own work must lie by virtue of the special circumstances in his case. In the case of the majority of the general practitioners it is most likely that the kind of investigative work nearest at hand would come under the general heading of *clinical*. There is no lack of interesting and valuable material for clinical study. Unusual, obscure, remarkable instances of disease occur everywhere. Circumscribed outbreaks of infectious diseases under conditions that are relatively simple and transparent always merit careful study with special reference to peculiar features as regards either manifestation or causation. Unusual manifestations of familiar diseases often invite critical observation. The complete and careful study of series or groups of cases always proves instructive and valuable. Now it is to be noted that at the present time clinical observation in order to be complete and reliable, in many cases requires the use of chemical, bacteriologic and anatomic methods. Hence every physician who is progressive in his tendencies, keen in method, and determined to get to the bottom of the many knotty problems presented by his cases, must have some kind of clinical laboratory, the more complete the better, and the more familiar with clinical laboratory technic the more efficient will be his work, other things being equal. It would seem that many practitioners might employ their spare time to good advantage for a period at least in perfecting themselves in clinical laboratory methods so that they may feel that their own results merit confidence. For many a thorough preliminary course under competent teachers would be desirable as a basis for further work. We do not hereby imply that old-fashioned clinical observation and reflection should be abandoned. Far from it. They remain of the same fundamental value as hertofore; both are to be extended, sharpened and controlled, however, by physical and chemical aids. It must be clear that to-day diagnosis, for instance, often rests on bacteriologic and chemical factors, of the existence of which our forefathers did not dream. Now we believe that it is not an unsurmountable task for general practitioners to master modern methods of clinical observation to such an extent that they may undertake investigative work in connection with their own material. This important subject can not be pursued any further for the present. Whatever the method, whatever the subject, the one thing always necessary to accomplish anything is work.

State Boards of Registration

COMING EXAMINATIONS.

Nebraska State Board of Health, State House, Lincoln, Neb., August 9-10. Secretary, Geo. H. Brash, Beatrice.

Corrections in Minnesota June Examination.—In The Journal July 15, p. 209, we stated that the general average attained by all graduates of the University of Minnesota who passed, was 79; this should have been 81.6. The average given for graduates of Hamline University who passed was given as 82.3 and should have been 82.03. These deductions were not made by the secretary of the Minnesota board and he should not be blamed for the error.

New Jersey June Report.—Dr. E. L. B. Godfrey, secretary of the State Board of Medical Examiners of New Jersey, reports the written examination held at Trenton, June 20-21, 1905. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 72' of whom 55 passed and 17 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
University of Michigan	(1905)	82.8
Woman's Med. Coll. of Pennsylvania	(1905)	76.8
University of Pennsylvania (1885) 87; (1895) 77.8; (1905) 86, 76.2, 89.6; (1901) 85.2; (1902) 82.8..		
Medico-Chirurgical Coll. Philadelphia (1905) 76.5, 83.8, 81.6, 83.2, 77.8, 89.3, 87.7; (1901) 86.8; (1904) 80.1; (1897) 79.2.		
Jefferson Med. Coll. (1901) 86.4; (1904) 82.1, 87.3, 84.1; (1905) 83.6, 75.1, 83.3, 85.4, 78.3, 77.6, 78.7, 75.8.		
Harvard University (1893) 83;	(1902)	79.6
Columbia University (1904) 80.2; (1905) 78.3, 82.8, 86.2, 91.3, 86.6, 82.3.		
College of P. and S., Baltimore (1905) 78.1, 82.3, 79.4, 79.7,		81
Baltimore Med. Coll. (190) 75.5;	(1904)	76.3
Baltimore Med. Coll. (1905) 75.5;	(1904)	76.3
Cornell University	(1905)	87.2
Hahnemann Med. Coll. Philadelphia (1905) 78.5,, 85.1; (1904) 75.3, 88.5.		
University of Naples	(1898)	62*
Long Island College Hospital	(1900)	80.1
FAILED.		
Medico-Chirurgical Coll., Philadelphia (1905) 73.1, 73; (1903) 71.9.		
Royal University of Munich	(1904)	65.1
University of Baltimore (1904) 71.7, 66.8, 71.3,		60.3
Baltimore Med. Coll. (1905) 68.5,		65.3
University of Louisville	(1905)	68.8
Leonard Med. Coll. N. C.	(1905)	71.4
Hahnemann Med. Coll., Philadelphia		73.8
College of P. and S., Boston	(1904)	72.1
Long Island College Hospital (1905) 73.6;	(1894)	56.5
Hahnemann Med. Coll., Chicago	(1879)	71.2

The general average attained by all representatives of the Medico-Chirurgical College who passed was 82.6; of the University of Pennsylvania, 83.5; of Jefferson Medical College, 81.4; of Columbia University, 83.5.

* Second examination.

Delaware June Report.—Dr. P. W. Tomlinson, secretary of the State Board of Medical Examiners of Delaware, representing the President and Fellows of the Medical Society of Delaware, reports the written examination held at Dover, June 20-22, 1905. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The number of applicants examined was 20, of whom 14 passed and 6 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Baltimore University	(1902)	77*
Medico-Chirurgical Coll., Philadelphia	(1904) 81; (1905) 80,	84
Baltimore Med. Coll.	(1904) 81.3; (1905) 76.2, 77.1,	77.6
Jefferson Med. Coll.	(1905) 84.3, 85.1,	82.1
University of Pennsylvania	(1867) 82.7; (1905)	90.5
Western Pennsylvania Med. Coll.	(1897)	92.3

FAILED.

College.	Year Grad.	Per Cent.
Baltimore University	(1902) 60;** (1904) 49.8;† (1905) 58, 72.4,	58.3.
Maryland Med. Coll.	(1905)	57.9‡

* Has continued studies.

** Failed in examination in 1904.

† Intoxicated during examination.

‡ Caught with a book by one examiner, who gave him 0 in two subjects.

The State Medical Examining Board, representing the Homeopathic Medical Society of Delaware State and Peninsula, held a written examination at Wilmington, June 20-22, 1905. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. Four candidates were examined, all of whom passed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Southern Homeo. Med. Coll., Baltimore	(1905) 84.1,	94.2
Hahnemann Med. Coll., Philadelphia	(1905) 89.3,	87.2

Utah July Report.—Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, July 3-5, 1905. The number of subjects examined in was 20; total number of questions asked, 86; percentage required to pass, 75. The total number of candidates examined was 17, of whom 12 passed and 5 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Coll. of Med. and Surg., Chicago	(1903)	78*
Rush Med. Coll., Chicago	(1905) 86, 88; (1904)	81
American Med. Coll., St. Louis	(1905)	80*
American Med. Coll., St. Louis	(1905)	80
Washington University	(1890)	77
College of P. and S., Chicago	(1905)	85, 80
Northwestern University	(1905)	84, 79
Royal Coll. of Phys., London	(1900)	79

FAILED.

College.	Year Grad.	Per Cent.
College of P. and S., Chicago	(1894)	53
Marion Sims-Beaumont Med. Coll.	(1905)	69
Western Reserve University	(1888)	69
University of Kentucky	(1903)	73
University of Denver	(1884)	72

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 22, 1905:

Lyster, W. J. L., asst.-surgeon, granted ten days' leave of absence.

Palmer, Fred W., asst.-surgeon, relieved from duty at Jefferson Barracks, Mo., and ordered to General Hospital, Fort Bayard, N. M., for duty.

Borden, Wm. C., surgeon, ordered to proceed from this city to Boston and Albany,, via Philadelphia, on business pertaining to construction of newer hospitals.

Hallock, H. M., surgeon, promoted major and surgeon, to rank from July 1, 1905.

Davidson, W. T., asst.-surgeon, ordered to report to Lieut.-Col. George H. Torney, deputy-surgeon-general, on Aug. 1, 1905, at Army General Hospital, Presidio of San Francisco, Cal., for examination for promotion.

Harris, J. R., asst.-surgeon, reports on thirty days' leave of absence from Philippine Islands.

Godfrey, G. C. M., asst.-surgeon, relieved from further station in New York City, N. Y., and ordered to Fort McPherson, Ga., for duty.

Banister, Wm. B., surgeon, left Jefferson Barracks, Mo., with recruits to Fort Assinniboine, Mont.

Ames, Roger P., contract surgeon, relieved from duty at Fort McIntosh, Texas, and ordered at expiration of present leave of absence to duty at Fort DeSoto, Fla.

Davis, Oscar F., contract surgeon, relieved from duty at Fort DeSoto, Fla., and ordered to duty at Jefferson Barracks, Mo.

Hicks, John R., contract surgeon, granted leave of absence, to include July 25.

Watkins, Victor E., contract surgeon, ordered home, Washington, D. C., for annulment of contract, and granted leave of absence for two months.

Foster, Douglas E., dental surgeon, relieved from duty at Fort Jay, N. Y., and ordered to his home for annulment of contract. Granted leave of absence for twenty days.

Jones, George H., contract surgeon, left Fort Fremont, S. C., on leave of absence for three months, fifteen days.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 22, 1905:

Braisted, W. C., surgeon, detached from special duty in connection with the Russo-Japanese war and ordered to the Navy Department.

Marshall, E. R., and Bunger, C. B., asst.-surgeons, appointed assistant surgeon, with rank of lieutenant (junior grade), from July 7, 1905.

Mears, J. B., and F. H. Brooks, asst.-surgeons, appointed assistant surgeons, with rank of lieutenant (junior grade) from July 14, 1905.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital service for the seven days ending July 19, 1905:

Sawtelle, H. W., surgeon, to report at Washington, D. C.

Mead, F. W., surgeon, granted leave of absence for one month, from August 1.

Blue, Rupert, P. A. surgeon, to proceed to Ocean City, Md., Chincoteague, Wachapreague and Cape Charles City, for the purpose of making a physical examination of keepers and surfmen of the Life Saving Service.

Cofer, L. E., P. A. surgeon, granted leave of absence for two months from September 9.

Foster, M. H., P. A. surgeon, granted extension of leave of absence for ten days, from July 11.

Richardson, T. F., P. A. surgeon, to proceed to Brunswick quarantine and assume temporary charge during absence on leave of Assistant Surgeon J. T. Burkhalter.

Goldberger, Jos., P. A. surgeon, to proceed to Atlantic City, N. J., for the purpose of making a physical examination of keepers and surfmen of the Life Saving service.

Berry, T. D., P. A. surgeon, to proceed to Point Pleasant and Tuckerton, N. J., for the purpose of making a physical examination of keepers and surfmen of the Life Saving Service.

Burkhalter, J. T., assistant surgeon, granted leave of absence, on account of sickness, for one month or so much thereof as may be necessary, effective on date of arrival of relief.

Ebert, H. G., assistant surgeon, granted leave of absence for two months, from August 4.

Adams, F. B., acting assistant surgeon, granted leave of absence for seven days.

Bean, L. C., acting assistant surgeon, granted extension of leave for five days, from July 21.

Gruver, F., acting assistant surgeon, granted leave of absence for thirty days, from August 15.

McConnell, A. P., acting assistant surgeon, granted leave of absence for six days, from July 20.

Savage, W. L., acting assistant surgeon, granted leave of absence for thirty days, from August 7.

Welden, W. A., acting assistant surgeon, granted leave of absence for thirty days, from August 15.

Williamson, S. D., acting asst.-surgeon, granted leave of absence for eight days, from July 22.

Carlton, G. G., pharmacist, granted leave of absence for twenty-nine days, from July 24.

Hall, L. P., pharmacist, department letter of June 23, 1905, granting leave of absence for thirty days, from July 10, amended to read thirty days, from August 4.

Keen, W. H., pharmacist, granted leave of absence for twenty-four days, from July 18.

PROMOTIONS.

Long, J. D., asst.-surgeon, commissioned (recess) as passed assistant surgeon, to rank as such from April 14, 1905.

Francis, Edward, asst.-surgeon, commissioned (recess) as P. A. surgeon, to rank as such from June 23, 1905.

McCoy, G. W., asst.-surgeon, commissioned (recess) as P. A. surgeon, to rank as such from June 27, 1905.

Warren, B. S., asst.-surgeon, commissioned (recess) as P. A. surgeon, to rank as such from June 25, 1905.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the period from June 30, to July 15, 1905:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, July 1-8, 3 cases.

Florida: Jacksonville, July 1-8, 1 case.

Illinois: Chicago, July 1-8, 15 cases, 4 deaths; Danville, June 27-July 10, 3 cases.

Indiana: Southbend, June 24-July 8, 3 cases, 1 death.

Louisiana, New Orleans, June 24-July 8, 7 cases (1 imported).

Michigan, Grand Rapids, July 1-8, 7 cases, 1 death.

Minnesota: Nineteen counties, June 12-19, 61 cases; ten counties, June 19-26, 50 cases.

Missouri: St. Louis, June 24-July 1, 1 case.

Nebraska: Omaha, July 1-8, 2 cases.

New York: New York, June 24-July 1, 1 case; Rome, July 1-8, 1 case.

North Dakota, Nine counties, May 1-31, 55 cases.

Pennsylvania: York, July 1-8, 1 case.

South Carolina, Greenville, July 24-July 1, 1 death.

Tennessee: Memphis, July 1-8, 1 case.

Wisconsin: Appleton, July 1-8, 2 cases; La Crosse, June 24-July 1, 1 case; Milwaukee, June 24-July 8, 17 cases.

SMALLPOX—FOREIGN.

Africa: Cape Colony, May 27-June 3, 2 cases.

Belgium: Brussels, June 10-17, 1 death.

Brazil: Bahia, May 13-27, 14 cases; Rio de Janeiro, May 28-June 11, 19 cases, 9 deaths.

China: Hongkong, April 30-May 6, 3 cases.

Colombia, Cartagena, June 10-17, 1 case, 1 death.

France: Paris, June 10-24, 31 cases, 4 deaths.

Great Britain: Birmingham, June 17-24, 1 case; Bristol, 3 cases; London, June 10-24, 4 cases; Sheffield, June 17-24, 1 case.

India: Calcutta, May 27 June 3, 2 deaths; Madras, 2 deaths.

Italy: Catania, June 15-22, 4 deaths; Messina, June 17-24, 3 cases.

Mexico: City of Mexico, June 17-24, 15 cases, 9 deaths.

Russia: Odessa, June 10-17, 13 cases, 3 deaths; St. Petersburg, June 3-17, 14 cases, 3 deaths.

West Indies: Grenada, June 1-15, 4 cases.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro. May 28-June 11, 85 cases, 34 deaths.

Ecuador, Guayaquil. June 6-13, 4 cases.

Guatemala: Livingston, June 21-July 6, 12 cases, 5 deaths.

Mexico: Tehuantepec, June 25-July 1, 1 case, 1 death; Tierra Blanca, June 18-July 1, 3 cases, 1 death; Vera Cruz, July 11, 1 case.

Panama: Colon, June 23-28, 4 cases, 1 death; Panama, June 23-28, 6 cases, 1 death; Paraiso, June 23-28, 1 case.

CHOLERA—FOREIGN.

India: Calcutta, May 27-June 3, 9 deaths.

PLAGUE—FOREIGN.

Africa: East London: May 20-27, 3 cases, 1 death; King Williams Town, 1 case; Queenstown, 3 cases, 1 death.

Arabia: Aden, June 2-9, 1 death.

Brazil: Rio de Janeiro, June 4-11, 1 case.

China: Hongkong, April 30-May 6, 8 cases, 7 deaths.

India: Calcutta, May 27-June 3, 84 deaths; Madras, May 27-June 2, 1 death.

Peru: Payta, June 14, 2 cases, 1 death.

Society Proceedings

AMERICAN SURGICAL ASSOCIATION.

Twenty-sixth Annual Meeting, held at San Francisco, July 5-7, 1905.

Concluded from page 254.

The President, Dr. George Ben Johnston, in the chair.

End Results in Surgery of the Kidney.

Dr. Albert Vander Veer, Albany, N. Y., read a paper based on a review of 123 operations. There were 23 cases of movable or floating kidney, exclusive of those in which excision of the capsule for neuralgia, examination for stone, and decapsulation for Bright's disease is done. Nineteen of these cases occurred in women, about two-thirds of whom were married, the lesion being on the right side. There were 4 males, the lesion also occurring on the right side and the entire number recovering. One patient required removal of the kidney four years after for abscess of the pelvis and stone; the operation was followed by a good recovery. Dr. Vander Veer next presented a series of 24 cases of nephrotomies in which there was a surgical lesion of the kidney, grouped under the heading of pyelitis, pyonephrosis, pyonephritis, or ascending pyelonephrosis. The series was divided as follows: Male, right side, 2 recovered, 1 died. Male, left side, 6 recovered. Nine of these patients finally required nephrectomy, one case resulting in death. Of the remaining 15 patients all made good recoveries except one who, after a period of four years, had a slight sinus, not deep, no pus, patient in excellent condition. The other patient recovered from the kidney complication, but developed a pelvic abscess which is still draining and she is gradually losing ground. In the cases of nephrectomies for hydronephrosis there were 8, as follows: Male, right side, 2 recovered. Female, right side, 3 recovered. Female, left side, 2 recovered, 1 died. He cited 2 cases of hydronephrosis in young women who were entirely cured by simple aspiration. Of decapsulation of the kidney for nephritis there were 2 cases ending in recovery.

DISCUSSION.

Dr. William J. Mayo, Rochester, Minn., asked Dr. Vander Veer whether he removes the ureter or considers it necessary to remove it in cases of tuberculosis of the kidney. Also whether any of the cases in which nephrotomy for tuberculosis of the kidney was performed have been followed by permanently good results. Recently Dr. Mayo has gone over the histories of some 36 nephrectomies for tuberculosis of the kidney and has found that a large number of people who are supposed to have tuberculosis of both kidneys in the early stage have only one kidney involved. Careful examination has shown in the majority of these cases, according to his recent experience that the tuberculosis is confined to one kidney. He thinks that a large majority of cases of tuberculosis of the kidney are one-sided to start with; that his experience, gained largely by postmortem examinations, is that the second kidney becomes involved at the time of death, and that, therefore, he has postmortem rather than living evidence of the fact that in the early stages the percentage of cases in which tuberculosis of the kidney is bilateral is small.

Dr. N. B. Carson, St. Louis, Mo., mentioned a case in which a diagnosis of floating kidney was made by several good surgeons, and he operated with the intention of fixing the kidney. He found the kidney slightly movable, but not floating. Later an eminent surgeon said the case was one of floating kidney, even after he told the surgeon that he had already fixed the kidney. Later he operated again and instead of a floating kidney found a floating right lobe of the liver. The gall bladder was enlarged to the size of a kidney. This was fixed to the liver and contained a number of stones. This floating lobe was removed and patient made a good recovery.

Dr. Archibald McLaren, St. Paul, Minn., mentioned the ease with which a kidney can be removed after resecting the twelfth rib. He said that he got this idea from Dr. Mayo. He tried this procedure in a recent case and found he could do the operation more easily, although he opened the pleura, which was readily plugged with iodoform gauze.

Dr. Vander Veer said, in reply to Dr. Mayo, that the tuberculosis was confined to one kidney in his cases, and that he has no record of bilateral kidney tuberculosis. In the first case in which he operated he did not remove the ureter, and in one case he had to do a secondary operation on account of relapse. He has seen an almost exact duplicate of Dr. Carson's case in that there was a sarcoma which involved the gall bladder and right lobe of the liver.

Non-Parasitic Cysts of the Spleen.

Dr. Charles A. Powers, Denver, Colo., stated that this subject has a twofold origin: 1, the few and comparatively recent clinical reports; 2, the somewhat more numerous accidental postmortem findings. In September, 1895, a young man aged 18, who presented a large right-sided abdominal cyst, was referred to him. The mass was of four years' growth. There had been a gradual loss of flesh and strength, anorexia, headache and general pressure symptoms. Fluctuation was plain. The diagnosis of splenic cyst seemed positive. A free incision was made over the prominent part of the tumor, the walls of which were found to be about one-half inch thick, semi-cartilaginous and solidly adherent to all the adjacent structures. Extirpation seemed impossible. Later autopsy findings confirmed this. The single cyst held several liters. A posterior incision was made with through drainage. The walls of the cyst did not collapse and the patient died of septic absorption from the cyst wall on the twelfth day. The anatomic diagnosis was hemorrhagic cyst of the spleen. From the autopsy findings Dr. Powers could not see how the cyst could have been successfully extirpated. He presented a brief analysis of 32 tabulated cases. In considering the treatment he spoke of puncture, incision and injection, incision and drainage, resection of cyst and splenectomy.

Status Lymphaticus and the Ductless Glands.

Dr. Roswell Park, Buffalo, N. Y., defined the term status lymphaticus and stated that the reason for bringing the subject before a body of surgeons is because the condition itself has so much to do with the question of toleration of anesthetics, and the matter of repair of wounds, that it really is one of exceeding importance. Not a few cases of sudden death during and after operation are to be explained by the abnormalities constituting this condition. These have usually been attributed to the anesthetic or to the anesthetist, and it may be that had the latter appreciated all the dangers offered by the condition he would have guarded his anesthetic or perhaps abstained from giving it. The anesthetist is not always to blame because he is often called in without previous knowledge of the patient, it being really the function of the medical attendant carefully to study the case and to determine its peculiarities. Lymphoid tissue throughout the body seems to increase as the thymus normally disappears. In infantile marasmus the thymus has usually completely and permanently disappeared, its condition being a fair index as to general nutrition. It is hypertrophy rather than atrophy of the thymus which most interests the surgeon, since those individuals who die suddenly and unexpectedly usually have an enlarged thymus. There certainly exists strange relationships between the pituitary body, the thymus, the thyroid, the coccygeal body, the testes, the ovaries and perhaps the bone marrow. In this list the recent researches relative to the parathyroids should also be included. A clearer recognition of the function of the latter seems to have changed the whole aspect in which we should regard Graves' disease, making it quite probable that this condition is due rather to atrophy of the parathyroids than to excess of the thyroid or of its secretion. In the ordinary forms of cystic goiter, in which thyroid secretion is not increased, the symptoms of Graves' disease are lacking. It is usually after removal of the thyroid proper that the opposite symptoms of exophthalmic goiter appear—i. e., myxedema and cachexia, while when the parathyroids are taken away the peculiar symptoms of exophthalmic goiter appear. Status lymphaticus apparently has more to do with the thymus than with any other isolated organ. Thymus extract produces in animals a fall of blood pressure with acceleration of the heart, and, in fatal doses, collapse. Thymus enlargement may cause death by pressure on important structures, even distinct from the trachea. Thymic asthma, a condition known for some time, is one in which death sometimes occurs most unexpectedly and quickly. In these cases not only is the thymus enlarged, but there is a general hyperplasia of the lymphatic tissue with enlargement of the lymph nodes and of the spleen. The relations between status lymphaticus and rickets are frequent and pronounced. Nearly all cases of the former display the ordinary clinical evidences of the latter. The participation of the lymphatic system is most casually apparent in the involvement of the faucial, laryngeal and lingual tonsils, i. e., the so-called adenoids of the throat specialists. It is notable that it is in these cases that death most often occurs during or after anesthesia.

Thymic asthma, Dr. Park stated, is practically the same thing as laryngismus stridulus. The occurrence of this in children ought always to serve as a warning as well as an indication for careful study and treatment. Should chloroform be given to such a patient inadvertently or unnecessarily, the agent will not be nearly so responsible for the death as the practitioner who employs it. The condition is to be recognized by the ordinary evidences of rickets which are usually present, by generalized enlargement of the lymph nodes, by the presence of adenoids in the nasopharynx, by a history of laryngismus stridulus or of special liability to spasm of the glottis, by perceptible enlargement of the thymus or by notable enlargement of the thyroid or spleen. In the young these conditions simulate cretinism. Such a clinical picture should serve as a warning and should make one abstain from the use of anesthetics unless absolutely necessary, while it should also prompt carefully directed treatment. This treatment should consist in careful attention to elimination, as well as to nutrition, while thymus or pituitary extract should be administered internally, as well as the glycerophosphates or some similar tonic. If it should be necessary to clear out the nasopharynx in such a case the parts should be first desensitized by cocain, to which a little adrenalin may be added, even previous to beginning anesthesia. If the patient is known to be subject to glottic spasm, the surgeon should be prepared to do a tracheotomy on an instant's notice, and especially so if the thymus be perceptibly enlarged. It may be necessary to use a long tracheal tube. Operations of convenience should be postponed until the patients can be carefully built up. Operations of necessity may be practiced with the above precautions, while in cases of impending or actual emergency one may depend on artificial respiration after tracheotomy and the use of adrenalin.

Patent Urachus.

Dr. George Tully Vaughan, Washington, D. C., explained the defective development in embryology which leads to the formation of patent urachus and of Meckel's diverticulum. He divided cases of patent urachus into the complete, blind, blind internal and blind external, and into congenital and acquired varieties, and explained the occurrence of some cases of acquired patent urachus by the pressure of urine in the bladder from obstruction to its normal outflow, causing the small valve which guards the bladder opening of the urachus to give way and to permit urine to enter the urachus, when, if infection takes places, abscess forms, and pus breaks through the umbilicus or discharges into the bladder. He briefly reviewed 52 cases reported in the literature and added one case of his own; of this number 38 patients were operated on, with 32 recoveries and 3 deaths, and in 3 cases the result was not reported. He divided the methods which have been tried for closing the urachus into eight classes as follows: 1. The application of caustic or of actual cautery to the umbilical opening. 2. The use of the cautery and of ligatures or sutures. 3. The use of ligature or suture only. 4. Plastic operations, the application of a flap of skin to close the opening. 5. To open or to slit up the urachus, curette or cauterize and pack. 6. Removal of sources of irritation from the urachus, such as stones, pus, etc., and keeping the parts clean. 7. Removal of obstruction to the flow of urine from the bladder through the urethra, as a tight prepuce, strictures of the urethra, hypertrophy of the prostate, and tumors or stone in the bladder. 8. Extirpation or dissecting out of the urachus and sewing or ligating the part next to the bladder, after the manner of treating the appendix in appendectomy. Dr. Vaughan does not approve of the method of simply closing the umbilical end of the fistula, lest an infected suppurating area be left which may cause septicemia or peritonitis. He considers slitting open and packing the abscess cavity a rational operation, but thinks the operation of election is to dissect out the urachus with the entire diseased area. Dr. Vaughan used this method in his case, a man of 40, who had acquired patent urachus since the age of 17. A month after the patent urachus was cured, it was necessary to perform nephrolithotomy on the right kidney, and nine months later the same operation on the left kidney.

Summary of Fractures of Spine Treated at Boston City Hospital from 1864 to 1905.

Dr. H. L. Burrell, Boston, concluded: 1. Fractures of the spine may well be divided into two classes—first, fractures of the spine with injury to the cord; and, second, fractures of the spine without injury to the cord. 2. It is not best to decide what the treatment of an individual fracture of the spine should be from the statistics, because the lesion varies so widely. 3. In many cases of fracture of the spine it is impossible to state primarily whether the cord is crushed or pressed on by bone, blood, or exudate, except by an open operation. 4. Only by the persistence of total loss of reflexes, complete insensibility to touch and pain, and motor paralysis below the level of the lesion can total transverse destruction of the cord be diagnosed. 5. If pressure on the cord is allowed to remain for many hours, irreparable damage to the cord may take place. 6. Unless it is perfectly clear that the cord is irremediably damaged an open operation to establish the condition of the cord and to relieve pressure is imperative as soon as surgical shock has been recovered from. 7. In certain cases of fractuure of the spine, when the cord is not injured, but is liable to injury from displacement of the fragments of a vertebra, rectification of the deformity and fixation of the spine may be used. 8. If the cord is crushed, no matter what treatment is adopted, of necessity there will be a high rate of mortality.

The Surgical Treatment of Intraspinal Tumors.

Dr. Richard H. Harte, Philadelphia, said that the science of spinal localization is now so well developed that it usually is not difficult to determine with accuracy the location of an intraspinal growth. What is usually understood by the term tumor of the spinal cord is an extramedullary but intraspinal growth, like a sarcoma, a fibroma, or a myxoma, giving no evidence of its existence except by the symptoms of medullary pressure which it produces. There have been found records of 92 operations for spinal tumors, among which number 43 patients died, a total mortality of nearly 47 per cent. The nature of the tumor is recorded in 88 of the reported cases. It was sarcomatous in two-fifths of the whole number (37 cases); adhesions, thickenings, etc., hold second place, with 11 cases; then come echinococcus, 8 cases; fibroma, 6 cases; syringomyelia, 5 cases; endothelioma, 4 cases; psammona, 3 cases; cyst, 3 cases; fibromyxoma, 2 cases; osteoma, 2 cases, and one each of myeloma, lipoma, lymphangioma, dermoid cyst, primary and secondary cancer, and one tumor of bone whose nature was not stated. Dr. Harte reported an interesting case of paraplegia from Pott's disease, in which he resorted to laminectomy, with great improvement. With very few exceptions, he said, it is impossible to determine the nature of the tumor before operation. He reported a case of dermoid cyst of the spinal canal in which he operated; the operation was followed by recovery. The patient was a girl, 7 years of age. Of 82 cases in which the region of the spine affected is given, the upper dorsal region was involved in 33 cases, or over 40 per cent. The tumor was found in the lower dorsal region in 24 cases, in the lumbosacral region in 14, and in the cervical region in 11 cases. The cause of death is given in 28 cases. One-half of these were due to shock and hemorrhage, or to infection and meningitis, there being 7 fatal cases under each of these categories. Eight patients died from exhaustion, 3 from recurrence of malignant growths, 2 from hypostatic pneumonia, and 1 from bedsores and sepsis. The technic of the operation is essentially the same as that used in traumatic cases.

Tubercular Conditions of the Spine Requiring Surgical and Mechanical Relief.

Dr. DeForest Willard, Philadelphia, stated that the principal surgical measures employed for the relief of spinal caries are laminectomy for paraplegia; forcible immediate straightening of the kyphosis; forcible gradual straightening; erasion of carious bone; wiring of spinal processes; evacuation of pus accumulations; long continued fixation of the column, and hygienic measures to prevent the necessity for operative interference. Complete, methodical and long-continued fixation of the spine with hyperextension and with helpful surroundings in the sunlight are the prime factors in securing new bone deposit necessary to replace the carious bone. Laminectomy for paraplegia is advisable only after long-continued and patient treatment along these lines for from one to two years, since the prognosis, especially in children, under these conditions is favorable and good powers of locomotion may be confidently expected. The operation is justifiable in selected cases in which loss of motion and sensation are progressively worse and the symptoms threaten life. If the tuberculous masses within the spine can be removed, and if extradural pachymeningitic deposits or pus can be evacuated, improvement may be expected, and in many cases relief occurs. The operation has a mortality of about 25 per cent. from immediate shock; 36 per cent. within a month, while one-half the patients die within the next year, their lives being probably shortened by the operations; cases in which there is no improvement and death equal nearly 65 per cent. Forcible immediate straightening of the kyphosis is an unsurgical and dangerous proceeding, in that it is liable to reawaken the tubercular disease and to weaken the column. Forcible gradual straightening by supporting the kyphotic area on a pedestal is a valuable agent in relieving deformity. Complete erasion of the carious bodies of the vertebræ is an uncertain operation, in the dorsal region requiring section of ribs, with danger of wounding the pleura. Wiring of the spinous processes has not been tried sufficiently to demonstrate its helpfulness. Spinal abscesses, which contain only liquefaction of caseation should be aspirated. When true pus forms, aseptic through drainage is advisable.

Tumors of the Spinal Cord.

Dr. J. Collins Warren, Boston, read a paper in which he reported three cases of tumor of the spinal cord operated on with good results.

Spina Bifida.

Dr. James E. Moore, Minneapolis, presented an analysis of 385 cases treated by excision. A careful study of these reported cases illustrating the experience of many surgeons, justifies him, he says, in drawing the following conclusions: 1. Operation on children of very tender age is scarcely worth while, because it is accompanied by so large a mortality rate, and because it does not stop the progressing cases. 2. Patients 5 or more years old can be operated on safely. 3. Patients with large or rapidly growing tumors, with hydrocephalus and with paralysis or deformities of the extremities are not cured. Finally, all that it can be hoped to accomplish by operation for spina bifida is to relieve the patient of an unsightly and annoying tumor after he has survived the dangers of the affliction per se.

Exophthalmic Goiter Treated Surgically.

Dr. Thomas W. Huntington, San Francisco, said that during the past three years he has treated surgically 9 patients suffering from this disease. In each instance, partial ablation of one or both lobes of the thyroid was done, and one patient was subjected to three operations successively. Seven were females and 2 were males. Their ages ranged from 28 to 56, the average age being 42 years. In 5 patients, the development of symptoms of exophthalmic goiter was associated with pre-existing enlargement of the thyroid. Two of these cases were cystico-colloid. In 4, the development of characteristic symptoms was simultaneous with glandular hypertrophy. All these cases were colloid. In the 5 cases in which the exophthalmic condition developed secondarily pre-existing glandular hypertrophy was noted during a period of of 6, 10, 34, 35 and 13 years, respectively. In this series, exophthalmic symptoms were noted 1, 2, 3, 2, and 2 years prior to operation, the average being 1 4/5 years. The duration of symptoms in the primary or pure Basedow cases prior to operation was two years, three months, two months and one year, the average being seven and one-quarter months. In this series 8 patients survived the operation and are living. One patient died on the twelfth day. The 8 living patients were carefully watched and their status definitely recorded up to date. Dr. Huntington gave a detailed account of each case as it occurred. A wider experience in this particular field, he states, has increased his faith in the value of surgical interference in carefully selected cases, and in conclusion he repeated the statement he made in an earlier communication, namely, that the argument for early operation in malignant diseases applies here with equal force. Extirpation should be undertaken before destructive changes have occurred, before the function of important organs is seriously, perhaps permanently, injured, and the patient's vitality lowered by chronic thyroid intoxication.

A Review of Five Hundred Cases of Gastroenterostomy.

Dr. William J. Mayo, Rochester, Minn., gave a summary of all the operations performed by him and by Dr. Charles H. Mayo during fourteen years in which an incision was made in both intestine and stomach, and plastic union established to increase gastric drainage. The death rate includes every patient dying in the hospital without regard to the cause of death or to the length of time after operation. Of pyloroplasty, there are 21 cases with no deaths, and 7 reoperations. Pyloroplasty has only a small field of usefulness. Finney's gastroduodenostomy, 58 cases, 4 deaths, 2 deaths from other causes at a late date, 1 death in the first 46. Dr. Mayo says that there is a large field of usefulness for this operation in narrow stricture following the healing of ulcers, but it is less useful in unhealed ulcer. Of gastrojejunostomy, there are 421 cases; benign, 307, death rate 6 per cent.; last 140 cases, 4 deaths. Malignant, 114, death rate 18 per cent; in the last 40, including radical operations for cure of cancer 5 per cent.

Murphy button, 157 operations, 139 anterior, and 18 posterior. This is the operation of choice after pylorectomy and partial gastrectomy. McGraw ligature, 38 operations. This is the operation of choice by the anterior method in gastrojejunostomy for inoperable cancerous pyloric obstruction. There were 228 posterior suture operations. Robson's bone bobbin, 43 operations, with 4 deaths, and 4 secondary operations. Moynihan operation on 9 inch loop, 53 operations, with 3 deaths; 7 patients were reoperated on for chronic bile regurgitation within 15 months. Roux-Doyen operation, 48 cases, 2 deaths, 2 secondary operations. Operation of choice is the Moynihan-Peterson without a loop, made by suture within 3 inches of the origin of the jejunum and obliquely on the posterior wall of the stomach with the inferior margin at the greater curvature near the junction of the pyloric end with the body of the stomach. In the last 80 gastrojejunostomies for benign disease there was only 1 death.

A Simple Aseptic Surgical Technic.

Dr. Dudley P. Allen, Cleveland, Ohio, related observations on a series of 377 bacteriologic examinations of the hands, made at the close of operation, and on the clinical results obtained in 3,500 cases. The bacteriologic investigations were conducted in five series. In Series A, the cleansing of the hands was with soap and water, scrub brush and nail cleaner. The hands were then sterilized in Harrington's solution. In operating the hands were encased in rubber gloves in which was sterile water. In each of 26 observations, cultures taken from the hands at the close of operation were negative. In Series B the washing of the hands was as in Series A. Twenty-four observations showed that cultures were negative in each case. In Series C the washing was as in Series A, with the addition of thorough subsequent washing in 70 per cent. alcohol. In 42 observations the *Staphylococcus pyogenes albus* was found in 8 cases, or in about 20 per cent. The conclusion reached is that alcohol is not efficient as a disinfectant and does not prevent the development of bacteria within the rubber gloves containing no germicide but simply sterile water. From these observations, it seems probable that if bacteria develop on the hands sterilized by alcohol, when in gloves containing simply sterile water, they will develop in the same manner on the hands prepared in the same way if encased in dry gloves with powder, as the hands become moist with perspiration. In Series D the hands were prepared as in Series C, and then washed in a solution of bichlorid of mercury, 1 to 5,000, and encased in rubber gloves containing the same solution. Sixty-four observations were made, all negative except one, in which the *Staphylococcus pyogenes albus* was found. In Series E, the hands were washed as in Series A, and then thoroughly washed with a solution of bichlorid of mercury, 1 to 5000, and encased in rubber gloves containing the same solutions. One hundred and two observations were made. The hay bacillus was found in one case. In Series F the hands were washed as in Series D, and then cleansed in a solution of bichlorid of mercury 1 to 3000, and encased in gloves containing the same solution. Seventy-five observations were made. The *Staphylococcus pyogenes albus* was found in a single case.

The clinical observations were made on a series of 967 laparotomies. Of these, 687 were clean, and 288 were septic before operation. There were 2,533 operations other than laparotomies. This gives a total of 2,139 clean operations. For the purpose of study the clean cases only were taken, since the question of asepsis can not be studied in cases septic before operation. Tables were presented by Dr. Allen showing the results obtained in all the various series of operations, as in hernia, varicocele, varicose veins, and laparotomies of all kinds, and in other miscellaneous operations. The results show from the whole series of 2,139 clean operations but two deaths from sepsis. Erysipelas developed but once. Stitch abscess occurred in 58 cases, or in about 2.25 per cent. The method of cleansing the hands finally adopted is to wash them thoroughly with soap and water, using the scrub brush for the palms of the hands, but only slightly on the backs of the hands, and never on the arms, the object being to avoid irritation of the integument. The nail cleaner is used only beneath the nails and not around the bases of the nails. The hands and arms are then washed in a solution of bichlorid of mercury, 1 to 5000, and encased in rubber gloves containing the same solution. Dr. Allen believes that the continued action of the solution of bichlorid of mercury in the gloves is a fundamental safeguard in preventing the development of bacteria within the gloves during operation. That this is true in practice is shown by the results obtained in the large number of cultures taken at the close of operation.

The conclusions reached from the various series of cultures and clinical cases are, Harrington's solution, although efficient, is undesirable, since it causes marked irritation of the hands and arms. The washing of the hands and arms should not be too violent, and the use of the scrub brush should be confined to the hands. The arms should be washed by rubbing with gauze or a towel. The use of the nail cleaner about the base of the nails is unnecessary. Alcohol is not adequate as a germicide when used on the hands. A solution of 1 to 5000 bichlorid of mercury, used after washing to disinfect the hands and arms, and then used in the rubber gloves, is thoroughly satisfactory in protecting against the development of bacteria within the gloves during operation. The rubber glove is a guaranty of safety, not only to the patient, but to the operator himself, when operating on infected wounds. A mask over the face is not necessary.

Suture of the Spinal Cord Following Complete Severance by Gunshot Injury.

Dr. George R. Fowler, Brooklyn, N. Y., reported the case of a man, aged 18, who was shot in the back from a 38-caliber revolver, at a distance of about 30 feet, somewhat from the right side. Shock was severe and paralysis of the lower extremities occurred at once. The bullet wound was one and one-fourth inches to the right of the median line and on a level between the tenth and eleventh dorsal spines. He was found to be paralyzed below the waist. Sensation was absent over all of both lower extremities and over the abdomen as high as one inch above the crests of the ilia, on the sides, and about half way between the symphysis and the umbilicus in front. The bowels moved involuntarily and irregularly, and without the volition or cognizance of the patient. There was considerable twitching of the muscles of both legs, especially the toes. He was operated on May 9, 1903; ether anesthesia. An incision was made, six inches long, over the spines of the vertebræ, the middle of the incision resting on the eleventh dorsal spine. The laminæ of the tenth, eleventh and twelfth vertebræ were removed by the chisel. The bullet was found lying transversely between the severed ends of the cord, concealed from view by a large blood clot, a very narrow, ragged and a contused strip of dura, scarcely more than 1/16 of an inch in width remained intact. The blood clot was carefully sponged away and the bullet removed. The ends of the cord were sutured with three fine chromicized catgut sutures, the dura being included in the sutures. No special difficulty was experienced in drawing together the ends of the cord and closing the defect, the latter representing in width the diameter of the 38-caliber bullet. The dura was further secured with a number of sutures of fine catgut and a drain consisting of a half dozen narrow strips of oiled silk protective introduced. The skin incision was sutured with silkworm gut. Twenty-six months after the injury, voluntary motion was practically lost in the affected area. The patient was able to stand when supporting himself by the hands resting on an apparatus, and to make some locomotion by swinging movements in a special frame on wheels. The bladder and rectum control was doubtful, the former acting automatically. The patient had the sensation that the bladder and rectum were about to empty themselves, and if the urinal or bedpan were brought to him promptly, soiling was prevented. The amount of urine passed in this manner probably averaged more than a pint in the twenty-four hours. The urine was sometimes voided during sleep. Sensation was practically abolished in the entire affected region, with the exception of an area about five inches in length extending down the outer side of the right thigh, in which some sensation was present. Tactile sensations were recognized, but were usually referred to a point two or three inches distant from the point touched. Marked rigidity and spasticity of both legs were present. Patellar reflex was exaggerated; the Achilles was reflex marked. Ankle clonus was present on one side and absent on the other. The reaction of degeneration was absent. Bedsores developed in the third month which extended to the muscles and were six months in healing. The skin showed but slight, if any, evidences of trophic disturbance.

Intussusception.

Dr. Maurice H. Richardson, Boston, reported a case of intussusception in a boy aged 4. The operation showed an invagination of the small into the large intestine, so firm that reduction seemed impossible. The child's condition was so bad that an enterostomy was performed, in the hope that a cure would be effected by spontaneous sloughing of the invaginated gut, life meanwhile being maintained through the enterostomy. Unfortunately the child died at the end of 18 days; the immediate cause of death being a purulent bronchitis. At the autopsy, no trace of the intussusception could be found. A careful search through the literature shows no case of spontaneous reduction of an intussusception in which the chain of evidence is absolutely complete. In this case, the diagnosis made before operation, and demonstrated before the staff of the Massachusetts General Hospital and a large audience, is unassailable. The lesson taught by this case would seem to be that greater efforts should be made for reduction, either by hydraulic or air pressure through the rectum or by manipulations after the abdomen has been opened. In Dr. Richardson's experience, however, the results have been fatally compromised by just such efforts. It seems questionable, therefore, whether in view of the great rarity of spontaneous reduction and of the almost universal failure of the milder palliative measures, one will ever be justified in selecting any but those operative measures which, undertaken at the earliest possible moment, can not fail to remedy completely and effectively the disease.

Constriction of the Duodenum Below the Entrance of the Common Duct and Its Relation to Disease.

Dr. A. J. Ochsner, Chicago, reported a series of cases in which operation was performed for the relief of cholecystitis, and in which there is frequently present a constricted condition of the duodenum just below the entrance of the common duct. This was usually accompanied with dilatation of the duodenum above this point. The dissection of a number of cadavers demonstrates a marked increase in the circular muscular fibers of the duodenum beginning at a point from 1 to 3 cm. below the entrance of the common duct, and extending for a distance of 1 to 4 cm., forming a broad sphincter. It seems likely that this sphincter has much to do with the physiologic function of the duodenum, facilitating the mixing of chyme with bile. It also seems likely that this sphincter serves the purpose of establishing a condition of rest in this portion of the alimentary canal in case of irritation of the biliary or pancreatic ducts. Dr. Ochsner gives a tabulated list of 14 cases of dilatation of the duodenum which he has met with among patients operated on for the relief of gall-bladder disease.

Perforation of the Gall Bladder.

Dr. Archibald MacLaren, St. Paul, Minn., reported ten cases of this condition, and said that gall bladder perforations are comparatively rare, especially if observations are confined to ruptures due to violence, ulceration and gangrenous inflammations. If we add to these the cases of cholecystitis in which inflammatory products have evidently escaped from, or passed through, the wall of an inflamed gall bladder, even though we may not find the perforation itself, the number of cases is considerably increased. Such abscesses about the gall bladder, either in the free peritoneal cavity or in the neighboring liver tissues are rare as compared with appendiceal abscesses; but are not uncommon and unquestionably should be included when studying perforations of that organ. Fistulous passages between the gall bladder and duodenum, stomach, or colon, are, of course, due to perforation of the gall bladder. Most perforations of the gall bladder occur in neglected cases in which gallstones have been known to exist for long periods of time and in which the patient has had ample warning through many attacks of biliary colic. Dr. MacLaren has operated in 80 gallstone cases, 9 of which were perforative in character. There were 8 recoveries and 1 death. In this fatal case, he believes that the result would have been the same even though the gall bladder had been removed, because with gangrene of the gall bladder and neighboring liver tissue, and especially in the presence of a localized abscess, any operative work which disturbs this abscess wall will only spread the infection and lessen the chance of recovery. He believes that in any perforative case which goes on to the formation of a localized abscess, the wisest course is to open and drain the abscess, waiting until a later time to deal with the gallstones or the disease of the gall bladder.

Resection of Portions of Chest Wall.

Dr. Emmet Rixford, San Francisco, read a paper in which he discussed the subject of excision of portions of the chest wall for malignant tumors and reported cases in which he had operated.

MINNESOTA STATE MEDICAL SOCIETY.

Annual Meeting, held in St. Paul, May 31-June 1, 1905.

The President, Dr. John W. Bell, Minneapolis, in the Chair.

Oppose Cheap Work.

A resolution was adopted at the opening session providing that any member who should bid for fraternal insurance or club work at prices lower than the regular fee table would be liable to loss of membership, and that any branch society permitting such procedures would be liable to lose its charter.

Equal Admission Requirements.

The committee having in charge the standard of admission to the medical department of the state university protested against the lower standard for admission to the homeopathic department now obtaining, and recommended that the standard for admission to the regular school ought to be raised and the requirements for the homeopathic school raised to the same standard. This recommendation was adopted by the House of Delegates.

Reports of Officers.

The report of the treasurer showed a balance on hand of $2,810, and the secretary reported a total membership of 984, an increase of 98 for the year.

The recommendation of the council that no county society be given a charter until it has five members was adopted.

Addresses.

In his presidential address Dr. John W. Bell reviewed the work of the society during the year.

Dr. William L. Rodman, Philadelphia, gave an exposition of the progress of surgery.

Tuberculosis Symposium.

Following the oration in surgery the tuberculosis problem was discussed from various viewpoints. Dr. Henry M. Bracken, St. Paul, discussed the care of tuberculous patients and stated that most of these cases, if taken in time, could be cured by sanatorium care. Dr. H. Longstreet Taylor, St. Paul, spoke especially of sanatorium treatment, and Dr. George D. Head, Minneapolis, of the dispensary treatment of tuberculosis.

Criticise State Examining Board.

Dr. Arthur Sweeney, St. Paul, presented a paper entitled "The State Board of Medical Examiners; a Criticism," in which he declared that the board had become useless through inactivity. It had carefully examined its applicants, but had utterly failed to prosecute medical irregulars and frauds.

Dr. Burnside Foster, St. Paul, said that county attorneys should be urged by the state board to prosecute such cases, but that this had not been done.

Dr. Ole E. Linger, Minneapolis, claimed that the board had secured only one conviction since it was organized.

Dr. Haldor Sneve, St. Paul, considered the board as at present constituted a useless body and said that it should be abolished.

State Journal Proposed.

The president recommended the publication of a monthly medical journal as the official organ of the society. On motion this matter was referred to a committee to report next year.

Election of Officers.

The following officers were elected: President, Dr. Charles H. Mayo, Rochester; vice-presidents, Drs. David N. Jones, Gaylord; Theodore Bratrud, Warren, and Samuel H. Boyer, Duluth; secretary, Dr. Thomas McDavitt, St. Paul; treasurer, Dr. Richard J. Hill, Minneapolis, and delegates to the American Medical Association, Drs. William A. Hall, Minneapolis; Harper M. Workman, Tracy, and John T. Rogers, St. Paul.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Saline Injections and Rectal Feeding in Gastric Ulcer.

The treatment of acute gastric ulcer, according to F. D. Boyd in an abstract in *Med. Review of Reviews*, is rest for the stomach. An adult resting requires on an average 2,000 calories per diem to maintain the proper balance of nutrition, and it has been found that rectal absorption ranges from 300 to 500 calories daily. Rectal alimentation, therefore, means partial starvation and, in addition, it causes an increase in intestinal putrefaction. It is the common belief that substances injected into the large intestine reach only to the ileocecal valve, but, according to this author, particles under favorable conditions may reach the stomach. In this connection he quotes the experiments of Gützner, that if starch emulsion be injected into the rectum with a normal saline solution, the starch can be washed out of the stomach in from four to six hours afterward. This occurs partly through recurrent peristalsis or, more probably, by the action of the surface epithelium of the intestine. It is probable, therefore, according to this author, that rectal feeding may interfere with gastric rest, as considerable pain and vomiting frequently follow nutrient enemata. He recommends, therefore, in the beginning a mild aperient. No food should be given by the mouth during the period of physiologic rest of the stomach. Every six hours one pint of warm normal saline solution is syphoned into the bowel by means of a soft catheter and a filter funnel. This relieves thirst. If irritability be present, a small amount of morphin may be introduced into the rectum.

No fluid should be taken by the mouth. Water is not absorbed by the stomach to any great extent, and must be passed into the intestine, and thus sets up peristalsis, consequently it must not be given, especially if gastric hemorrhage be present. The mouth and teeth must be properly cared for, as salivation and irritating secretions from the mouth are swallowed and gastric irritation is set up. In simple ulcer complete rest for from twenty-four to forty-eight hours will cause all pain and gastric hyperesthesia to pass away. If these symptoms continue under this treatment for three days it means that the healing process is not going on and that adhesions are probably present. The period of complete rest should continue for from four to six days, and after this milk in small quantities may be given. It is unnecessary to peptonize the milk, but it should be diluted with water, with the addition to a small amount of sodium bicarbonate or phosphate.

At the end of the second week the patient may take sufficient milk to maintain the nutritive balance and the diet may be gradually increased till at the end of four weeks the patient may be placed on a convalescent diet without discomfort.

The treatment of gastric hemorrhage is the same as that of acute ulcer. Severe or repeated hemorrhages may require more active treatment. Of the medicinal preparations recommended to check hemorrhage, Boyd recommends morphin hypodermically and adrenalin by the mouth. He recommends lavage in cases of hemorrhage, against the usual opinions, stating that its benefit more than counterbalances its dangers. The presence of coagulated blood in the stomach causes vomiting and increased peristalsis which is more likely to disturb clot formation than lavage when carefully carried out. He, therefore, recommends lavage, using water at a temperature of from 104 to 105 F. Iced water is not recommended, as it tends to induce shock.

F. P. Henry, in *Amer. Med.*, recommends rest, both general and local, in the treatment of gastric ulcer. He states that this may be carried out by putting the patient to bed and nourishing him by rectal enemata. He recommends Ewald's mixture for rectal feeding: Two or three eggs beaten up with a tablespoonful of cold water. A small quantity of starch is then boiled with half a cupful of a 20 per cent. solution of grape sugar to which is added a wineglassful of red Rhine wine; the egg mixture is then slowly added, taking care that the fluid is not hot enough to coagulate the eggs. Eight ounces is sufficient at one feeding, preceded by a simple saline enema. These nutrient enemata should be continued for three days, followed by small amounts of food, consisting of milk or gruel, by the mouth. When milk disagrees with the patient, buttermilk or boiled or peptonized milk is recommended, gradually increasing the diet to raw or soft boiled eggs, beef, mutton and chicken broths.

The medical treatment, according to this author, is of secondary importance. Bismuth subnitrate is recommended in half-dram doses three times daily, suspended in barley water or mucilage. Severe pain demands morphine. Vomiting may be checked by morphin or cocain. Hematemesis may be checked by hypodermic injection of ergot or adrenalin. Gallic acid and lead acetate are also of value. Some form of anemia frequently accompanies gastric ulcer. The blood should be improved by some bland form of iron after the acute symptoms have subsided. For this purpose Ewald recommends a 2 to 3 per cent. solution of the sesquichlorid of iron, taking one teaspoonful thrice daily in a wineglassful of egg water, making a solution of albumin by adding one part of egg albumin to two parts of water.

Some authorities recommend a combination similar to the following in cases of gastric hemorrhage:

℞.	Acidi tannici	gr. xxx	2	
	Glycerini	m. xxx	2	
	Aquæ dest. q. s. ad	℥i	30	

M. Sig.: To be taken at one dose. Or:

℞.	Bismuthi carb	gr. xii		75
	Pulv. tragacanthæ	gr. v		30
	Acidi hydrocyanici dil	m. v		30
	Liq. morph. hydrochlor (1 per cent.)	m. x		65
	Aquæ chloroformi q. s. ad	℥ss	15	

M. Sig.: At one dose and repeat three times a day.

Hyperchlorhydria not infrequently precedes ulcer formation. To counteract this condition bismuth subnitrate is recommended in large doses after meals, put up in wafers or suspended in mucilage.

The following combination is of value:

℞.	Sodii bicarb	gr. viii-xv		50-1
	Magnesiæ calc	gr. x		65
	Bismuthi subnit	gr. xx	1	30
	Cretæ preparatæ	gr. iv		25

M. Ft. chart. No. i. Sig.: One such powder after each meal.

Constipation may occur with the administration of the foregoing, and under such circumstances a saline laxative is indicated.

Tabes Dorsalis.

The general and symptomatic treatment of tabes dorsalis, according to *Med. News*, consists in: 1. Avoid carefully all physical and mental exertion as well as alcoholic and sexual excess. 2. Every day on arising administer friction along the vertebral column by means of a horsehair glove.

The following should be taken every other day before meals:

R.	Pulv. capsici	gr. ii		12
	Pulv. ergotæ	gr. v		30
	Pulv. glycyrrhizæ	gr. x		65
	Mellis q. s.			

M. Ft. pil. No. xxx. Sig.: One pill before each meal and repeat every second day.

During the alternate days the following is recommended:

R.	Potass. iodidi	gr. xx	1	30
	Aquæ	ʒiv	15	

M. Sig.: One to two teaspoonfuls after each meal, in a glass of milk.

If the cause of the trouble is specific, mercurial inunctions are indicated.

If the pains are very severe the following combination is recommended:

R.	Morph. hydrochlor	gr. x		65
	Cocainæ hydrochlor	gr. v		30
	Aquæ dest.	℥i	30	

M. Sig.: Fifteen drops to be injected hypodermically to relieve the pains.

To counteract the urinary and ocular affections one or two pills a day of the following combination is recommended:

R.	Ext. belladonnæ	gr. iii		20
	Ext. gentianæ	gr. v		30
	Pulv. glycerhizæ	gr. x		65
	Mellis q. s.			

M. Ft. pil. No. xx. Sig.: One or two pills daily.

The bowels must be kept active with glycerin enemata, or one of the following pills may be substituted:

R.	Podophyllin	gr. ii		12
	Ext. cascaræ sagradæ	gr. x		65
	Mellis q. s.			

M. Ft. pil. No. x. Sig.: One pill at bedtime for bowels.

Acute Anterior Urethritis of Gonorrheal Origin.

The following outline of treatment to be followed in cases of acute anterior urethritis of gonorrheal origin is recommended by E. G. Ballenger in *Southern Medicine and Surgery:* For the successful outcome of the treatment a well-regulated method of living is of the greatest importance. The patient should avoid all sexual excitement, alcohol, coffee, highly seasoned food, condiments, gravies, excessive use of tobacco and any violent exercise. The diet should consist of milk, buttermilk and other light, easily digestible substances that do not overload the urine. Large quantities of plain or lithia water, or lemonade, are of value, and the bowels should be regulated by mild laxatives or aperient mineral waters.

It should be kept in mind that the great feature of gonococci is to linger and to recur.

Internal medication is of great value. The author recommends balsam of copaiba and oil of sandalwood as of great benefit when given in doses of five minims (.30) each, three or four times daily, if no stomach disturbances arise.

In using urethral injections of the silver preparations the patient should be instructed to pass urine before the injection. The sides of the meatus are so pressed as to retain the fluid after the syringe has been removed. The fluid should be retained for five or ten minutes after each injection. The injections should be repeated once in three hours during the first three days, and gradually reduced to three a day and continued until the quantity of pus is very small. A saturated watery solution of hydrastin muriate should then be substituted for the silver and continued for from ten days to two weeks. If shreds and discharge are still present at the end of two or three weeks a more astringent preparation may be given, but always avoiding one that burns.

For this stage of the disease the author recommends the following combination:

R.	Acidi carbol	gtt. vi		30
	Cupri sulph	gr. x-xv		65-1
	Plumbi acetatis	gr. x		65
	Aquæ dest q. s. ad	℥viii	240	

M. Sig.: To be used as an injection.

If a burning sensation appears the injection should be diluted. The meatus should be anointed with vaselin during the acute stage to prevent its being glued together or to stick to the protecting cotton and thus create a damming back of the discharge in the urethra. The patient should be urged to attend to proper hygiene, diet and medication until the shreds disappear from the urine.

Medicolegal

Privilege Not Severable.—The First Appellate Division of the Supreme Court of New York says that in the personal injury case of Powers vs. Metropolitan Street Railway Company the plaintiff called as a witness, for the purpose of proving the extent and nature of his injuries, the surgeon at the hospital to which he had been taken, who examined and treated him at that time. After the surgeon had been sworn, and before his direct examination was begun, the plaintiff's counsel stated that he called the witness for a special purpose, and asked that the cross-examination be limited to that purpose; but he did not state what that purpose was. The witness, in response to questions, then testified that he had charge of the plaintiff while in the hospital, and, on being handed a card, he stated that the memorandum on it was in his handwriting, was made at the time the plaintiff was in the hospital, and that it expressed his opinion at that time of the plaintiff's case; that it was a diagnosis of the case, and that, without reference to it, he could not, from memory, state the plaintiff's condition at the time. After examining the card, apparently for the purpose only of refreshing his memory, he testified that the plaintiff had phlebitis, contusion and thrombosis of the saphenous veins, explaining the meaning of those terms. On cross-examination he testified to being connected with the Vanderbilt Clinic, where he had seen the plaintiff, examined and treated him. He was not allowed to testify as to plaintiff's condition while attending the Vanderbilt Clinic, the testimony being excluded as not proper on cross-examination. Afterward he was called as a witness for defendant; his testimony was then excluded as privileged, which the court holds was error.

By calling out the testimony which the plaintiff did from the physician as to his condition immediately after the accident for the purpose of showing the nature and extent of his injuries, the court says that the plaintiff waived the privilege granted him under Section 834 of the Code of Civil Procedure, and authorized the physician to disclose all the information acquired while in attendance on him professionally. Having once waived his privilege, and introduced the physician's testimony as to his injuries, the plaintiff could not again claim the benefit of the privilege for the purpose of excluding other testimony by the same physician as to the development and progress of the same injuries at a subsequent date. Having opened the door to let in the testimony of his physician as to the injuries at one time, he could not again close it so as to exclude the testimony of the same physician which related to the progress and development of those injuries.

It appeared that this physician, at the time of the trial, was in attendance as an expert for the defendant, and, the court says, the plaintiff doubtless feared that his opinion might be biased by that fact, and his testimony might, therefore, be prejudicial to the plaintiff's cause of action; but, while that fact might have a bearing on the weight to be given to the testimony, it was not a ground for excluding it. The plaintiff saw fit to rely on the physician to testify as to the examination made immediately after the accident and the condition then existing. Having done this, he could not close the physician's lips as to a condition existing subsequent thereto, when the condition, according to his own claim, resulted from those injuries. The plaintiff could not sever his privilege so as to waive it in part and retain it in part. Having once waived it on the trial, it then ceased to exist, either partially or entirely, at least so far as that trial was concerned.

Right to Be Paid for Attending Inquest.—Section 515 of the Iowa Code provides that the coroner "shall hold an inquest on the dead bodies of such persons only as are supposed to have died by unlawful means," etc. By virtue of Section 529, when he deems it requisite, "he may summon one or more physicians or surgeons to make a scientific examination, who shall receive a reasonable compensation to be allowed by the board of supervisors." In the case of Finarty vs. Marion County, which was brought by a physician to recover for services rendered in making such an examination on the summons of the coroner, the defense was made that the inquest was not lawful "for the reason that not the slightest suspicion or supposition existed that the deceased person had come to his death by unlawful means." But the Supreme Court of Iowa affirms a judgment in favor of the physician. It says that from the simple reading of the provisions quoted it seems clear enough that the supposition on which jurisdiction to act is made to rest must be one which arises—and, for that matter, exclusively so—in the mind of the coroner. He certainly could not justify himself for acting in any given case if the facts presented to him were such as that his own mind rejected the supposition that death had been caused by unlawful means. However, the allegation of the county amounted to nothing more than an assertion that the county, from the information gathered from it, had reached the conclusion that there was no room to suppose or to suspect that death had resulted from unlawful means. The allegation, then, was of a conclusion; not only that, but it must be apparent that the subject-matter thereof was wholly immaterial. A second sufficient answer to the county's contention was that the coroner was acting within the forms of law and in the apparent exercise of his lawful jurisdiction. In such cases it is not for a witness, whether he be subpenaed or summoned, to stand on the order of his going until a satisfactory showing is made to him that jurisdiction in the tribunal which demands his attendance is so far perfect as that he may be certain of his compensation in case he obeys. It is for him to answer, and, in cases where it is provided by statute, it is for the county, on proper demand, to pay.

Insurance Liability After Diabetes and Death After Injury to Thumb.—The Supreme Court of Minnesota says, in White vs. Standard Life and Accident Insurance Co., that an accident insurance policy provided that the company should be liable for injuries or death caused solely by accidental means, and expressly exempted it from liability if death resulted, wholly or in part, directly or indirectly, from any bodily disease or infirmity of the insured. The evidence in the case showed that, at the time the policy was issued, and at the time of the insured's death, which was claimed to have been the proximate result of an accidental injury to one of his thumbs, he was affected with diabetes, and the evidence was conclusive that such disease directly co-operated with the injury in causing death. The court holds that the company was not liable under the policy. It says that similar policies have been before both the state and federal courts, and the consensus of judicial opinion is that, subject to the exceptions contained in the policy, if the injury be the proximate cause of death, the company is liable, but, if an injury and an existing bodily disease or infirmity concur and co-operate to that end, no liability exists. If, however, the injury be the cause of the infirmity or disease—if the disease results and springs from the injury—the company is liable, though both co-operate in causing death. The distinction made in this particular is found in that class of cases where the infirmity or disease existed in the insured at the time of the injury, and, on the other hand, that class of cases where the disease was caused and brought about by the injury. And even in cases where the insured is afflicted at the time of the accident with bodily disease, if the accidental injury be of such a nature as to cause death, solely and independently of the disease, liability exists. The rule of proximate cause, as applied to actions of negligence, can not be applied in its full scope to contracts of this nature. But for the express reservation contained in this policy, the injury complained of in this case would, applying the ordinary rule of proximate cause, very properly be held the direct cause of the insured's death, but the fact that he was afflicted with diabetes at the time, which was aggravated by the injury and contributed to his death, removed the case from that rule and brought it within the exceptions of the policy. Nor was the rule in any way affected or changed by the fact that the company was informed, at the time the policy was issued, of the existence of the bodily infirmity. In such case the insurer contracts to indemnify the insured from accidental injury, knowing the existence of his bodily infirmity, but with the reservation and exception that the insurer will not be liable if such infirmity, directly or indirectly, co-operate with an accidental injury in causing death.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

July 15.

1 *Gall Spider Cases. R. T. Morris, New York.
2 Blood Pressure Observations for the Practicing Physician. C. E. Brush, Baltimore.
3 *Fractures and Dislocations of the Ulna. J. S. Wight, Brooklyn, N. Y.
4 *Cholemia in Neurasthenia. R. Hichardson, Baltimore.
5 *Recent Views Regarding the Treatment of Nephritis. J. S. McLester, Birmingham, Ala.

1. **"Gall Spider Cases."**—Morris says webs of peritoneal adhesion are found in the bile-tract region so commonly that they have come to be looked on almost as a normal characteristic of the region by postmortem examiners. The significance of these webs of adhesion has been overlooked in the same way that we overlooked the significance of adhesions in the cecal region previous to our knowledge of appendicitis. Peritoneal adhesions in the bile-tract region cause symptoms that are commonly diagnosticated as belonging to a large group of gastrointestinal disorders, and Morris believes that the subject is one that is to attract the widespread attention of physicians immediately. Rules are given for making the diagnosis in "gall spider cases," as he characterizes them. He removes the gall bladder and prevents recurrence of adhesion by the employment of Cargile membrane.

3. **Fractures and Dislocations of the Ulna.**—Wight treats this subject in a systematic manner. There are (1) fracture of the styloid process, (2) fracture of the shaft of the ulna, (3) fracture of the olecranon, (4) fracture of the coronoid process. The dynamic relations are fully treated and the mechanism of the injuries explained in detail. The results are explained in the clinical reports illustrating the different fractures. Wight gives a basis from which to determine the nature of an old fracture to the ulna. The patient suffers pain in the joint; this is sometimes severe. The power of flexion is generally lost, although in some instances there is good command over the motions of the forearm, mostly for the reason that some of the fibers of the tendon of the triceps remain attached to the upper end of the lower fragment. The patient has a sense of insecurity in his injured limb, which may be best explained by saying that the coordinate action of the elbow joint has been impaired or lost. This impairment is different in different persons. It would appear as if the coördinate circle of the joint function had been more or less broken into; this circle is made up of bone, nerve and muscle. Therefore, there should be no difficulty in understanding the disability which follows the break in the correlated bone. It would seem to be nearly impossible for the ulna to be dislocated by the application of violence to its lower end, unless we take into account those cases in which there has been a fracture of the external condyle; in such a case the ulna is dislocated backward, and is accompanied by the head of the radius and the broken off external condyle.

4. **Cholemia in Neurasthenia.**—Richardson reviews the etiology and symptomatology of cholemia, calling attention to the nervous symptoms with which it is associated. The presence of bile pigment in the plasma and the cerebrospinal fluid in certain cases of neurasthenia is the primary cause of the disease. He recommends mercury in small doses in combination with sodium glycocholate mass, with the administration of large quantities of water containing the inorganic salts of the plasma in normal proportion as well as alkalies in full doses. He considers that this form of neurasthenia has a bad prognosis, the disease often progressing to a true insanity.

5. **Recent Views Regarding the Treatment of Nephritis.**—McLester thinks that the practice of giving large quantities of fluids in cases of acute nephritis is still very general and, owing to the intolerance of the acutely inflamed kidney to water, is productive of much harm. As a diet in this disease he indorses a milk and cream mixture. In chronic interstitial nephritis he advocates moderate restriction of fluids to relieve as much as possible the heart, and thinks the diet usually prescribed is too low in proteids to maintain the necessary nutritive equilibrium.

Medical Record, New York.

July 15.

6 *American Medical Association: Its Origin, Progress and Purpose. L. S. McMurtry, Louisville, Ky.
7 *Delay of Old Age and the Alleviation of Senility. C. G. Stockton, Buffalo, N. Y.
8 *Congenital Absence of Tibia: Transplantation of the Head of Fibula: Arthrodesis at Ankle Joint. T. H. Myers, New York.
9 Examination of Rectum and Its Value in Diagnosis. C. J. Drueck, Chicago.

6.—The Journal, July 15, 1905, page 145.

7.—Id., page 165.

8. **Congenital Absence of Tibia. Transplantation of Fibula. Arthrodesis at the Ankle Joint.**—Myers' patient was a boy of 2 years, who was perfectly developed except in the right lower extremity, from which the tibia was entirely absent. The femur was normal in shape, but slightly atrophied, and the head of the fibula articulated loosely with the upper and posterior part of the external condyle of the femur. The foot was in marked equinovarus. The leg was two and three-quarters inches shorter than the other, and, as it was useless for walking, the child had always gone about on his knees. As there was no reaction of degeneration among the leg muscles, it was thought that development would follow the use of the limb if this could be secured. The head of the fibula was accordingly freed from its attachments and brought into position between the condyles of the femur, where it was secured by suitable manipulation of the ligaments. The object of this operation was to lengthen the limb (about three-quarters of an inch was gained) to secure a stable support for the body weight, and to preserve the mobility of the joint. The ankle joint was then opened, the external malleolus cut off, and the fibula placed squarely on the astragalus and united to it by sutures. The object was to lengthen the limb, to correct the deformity, and to secure a stable position of the foot. Recovery was uneventful and now, ten months after operation, the boy can walk about all day with a splint, can flex his leg ninety degrees, and can almost fully extend it. Meyer reviews the etiology of the deformity and cites six other cases, which he says are all that have been treated by transplantation of the fibula. While in cases of this sort a splint and high shoe will probably always be required, still this is usually preferable to the alternative, which is amputation.

Medical News, New York.

July 15.

10 *American Medical Association; Its Origin, Progress and Purpose. L. S. McMurtry, Louisville, Ky.
11 *Delay of Old Age and the Alleviation of Senility. C. G. Stockton, Buffalo, N. Y.
12 *Influence which the Acquisition of Tropical Territory by the United States Has Had, and is Likely to Have, on American Medicine. G. Blumer, San Francisco, Cal.
13 *Treatment of Diarrhea in Children. J. E. Winters, New York.
14 Epilepsy, the Result of Gastrointestinal Disturbance. F. H. Murdoch, Pittsburg, Pa.
15 Three Additional Cases of Primary Sarcoma of the Stomach. H. Brooks, New York.

10.—The Journal, July 15, 1905, page 145.

11.—Id., page 165.

12.—Id., page 169.

13. **Treatment of Diarrhea in Children.**—Winters calls attention to the difference between diarrhea and dysentery and states that though they are two entirely distinct diseases, they may both exist in the same patient at the same time. He states that diarrhea is purely a food disorder and is, therefore, preventable. Prompt appropriate treatment arrests it at once, therefore, it should never be fatal. The first step in the treatment is the removal of the cause, and Winters believes it can best be accomplished by prompt administration of castor oil. After the detergent, cleansing, purifying action of the oil has ended, only water should be given for about twenty-four hours. In very severe cases from thirty-six to seventy-four hours must elapse before food is given. After this period of intestinal rest, food in a modified and weakened form of that which is physiologic for a well child of the same age, may be given. Winters gives explicit directions for modifying the food for children of various ages. He does not approve of the barley water and dextrinized cereal diet for young infants either in health or in disease.

Boston Medical and Surgical Journal.

July 13.

16 *American Medical Association: Its Origin, Progress and Purpose. L. S. McMurtry, Louisville, Ky.
17 *Delay of Old Age and the Alleviation of Senility. C. G. Stockton.
18 *Neurasthenia. A Study on Etiology. Treatment by Occupation. H. J. Hall, Marblehead, Mass.
19 Senile Albuminuria. A. E. Austin, Boston.
20 Recording of Rotation Deformity by Projecting Horizontal Points. H. O. Feiss, Cleveland, Ohio.
21 Anal Fissure. T. Hill, Boston.

16.—The Journal, July 15, page 145.

17.—Id., page 165.

18. **Neurasthenia.**—Hall states that although the term neurasthenia seems about to lose its identity in a better and more accurately descriptive nomenclature, still it is a very convenient expression, and one which will be readily understood to refer broadly to a wide range of functional mental and nervous deviations. The confirmed neurasthenic with his tangle of mental and nervous symptoms, presents an appalling problem to the conscientious physician. Hall believes that some of the confusion which clouds our understanding of neurasthenia and its treatment may arise from the fact that we look at the disease as a whole, and that such a view of any complicated body is bound to be misleading. An examination of the daily life of the average neurasthenic, he states, will reveal, in most cases, the grossest maladjustments. The patient's whole personality is at war with its environment. It is evident that here is a condition which, if not relieved, can perpetuate indefinitely, some, at least, of the most important neurasthenic symptoms. We may be dealing with elaborate toxins of over and perverse functioning, with physical disease and suffering, with personal predisposition and with heredity, but we are also dealing with matters of everyday living, and we are deeply concerned with two things—the attitude of the patient toward his environment and also with that environment. If the necessity for prolonged physical rest can be eliminated, Hall believes that the ideal life for the neurasthenic is one of occupation. The life of the artisan recommends itself in the treatment of this condition because in itself it is simple and is without the complications of social, business or professional life and may be so complete and satisfying as to compel devotion. Hall believes that the neurasthenic who can drop the conditions of his old life to become a successful weaver or potter thereby simplifies life immeasurably. The kind of life chosen as most frequently applicable and least likely to foster neurasthenia is that of productive industry. The difficulties of transferring the patient to this, for him, ideal environment are not so great as might at first be supposed.

New York Medical Journal.

July 15.

22 Diagnosis and Treatment of Gastric Ulcer. C. E. Nammack, New York.
23 Safety X-ray Tube. H. G. Piffard, New York.
24 Report of Operations Performed at the Public Clinics for Students at the German Hospital During the Session of 1904 and 1905. J. B. Deaver, Philadelphia.
25 Popliteal Aneurism. Surgical Treatment. H. M. Taylor, Richmond, Va.
26 Bronchoscopy for Removal of Foreign Bodies from the Lungs. E. F. Ingals, Chicago.
27 Case of Papilloma of Kidney with Nephrectomy. J. B. Boucher, Hartford, Conn.
28 Six Lectures on the Disease of the Blood. J. M. Swan, Philadelphia.
29 *Treatment of Erysipelas of Face. P. W. Monroe, Springfield, Ill.

29. **Treatment of Erysipelas of the Face.**—Monroe says that in treating erysipelas an attempt should be made to shorten the course and to modify the severity of the disease. To

accomplish this the proliferation of the infecting organisms in the skin must be inhibited and the patient must be stimulated and supported in order to overcome and to eliminate the toxins. If a wound be the site of infection it should be carefully cleansed. The face should be washed with warm water and soap, and with alcohol, to remove all dirt, epithelial débris and oleaginous matter in order that the antiseptic applied may be more readily absorbed. The antiseptics are best applied in the form of cold wet dressings, and Monroe states that the best of these are solutions of aluminum acetate, bichlorid of mercury from 1 in 5,000 to 1 in 2,000, ichthyol 10 per cent., and carbolic acid. He believes that as there is undeniable evidence that carbolic acid is readily absorbed by the skin, it should be given the preference, but should be used with care. He applies it on gauze pads four or six layers in thickness, and remoistened about every hour. Over this he places a thin, light icebag, or better, an ice poultice, a mixture of finely crushed ice and sawdust in a bag of oiled silk. He regards the application of cold as a most important feature of the treatment, as the maintenance of a low temperature in the infected area is deterrent to the proliferation of the infecting organisms. Monroe states that erysipelas patients should be isolated and that the physician and nurse should wear rubber gloves when attending them. The patient should be kept in bed as long as the fever continues. In most cases calomel or salines are indicated in the beginning. In debilitated patients a milder cathartic or an enema is better. The diet should be fluid, its chief constituent being milk. When stimulants are necessary, alcohol and strychnin are best, in Monroe's opinion. The patient should be encouraged to drink water freely. When the temperature is high the patient should receive an alcohol sponge every four hours. As the inflammation subsides emolients and warm water will hasten resolution and desquamation. In those individuals in whom there are recurrent attacks, it is probable that in many the skin is never freed from bacteria, but that they remain quiescent in or about the hair follicles. In these cases, in addition to the general tonic treatment, local stimulation of the skin by alternate hot and cold ablutions and massage is of benefit. All abrasions and trivial wounds should be carefully cleansed and protected.

Lancet-Clinic, Cincinnati, Ohio.

July 8.

30 Conceptions of the Nature and the Management of Bright's Disease. A. C. Croftan, Chicago.
31 *Chloroform and Ether Anesthesia. C. T. Souther, Cincinnati.

July 15.

32 Tuberculosis as a Causative Factor in Sterility in the Male. G. E. Malsbary, Cincinnati.
33 Gonorrhea and Syphilis in the Causation of Male Sterility. M. L. Heidingsfeld, Cincinnati.
34 Derangements of the Nervous System Causing Male Sterility. H. H. Hoppe, Cincinnati.
35 Recognition of Important Eye Lesions by the General Practitioner. G. F. Suker, Akron, Ohio.

31. **Chloroform and Ether Anesthesia.**—Souther calls attention to the fact that often too little consideration is given to the qualifications of the anesthetist. He mentions the various appliances for the administration of chloroform and ether, and the difficulty encountered in most of them when using them for male patients who have beard and mustache, and also says that these appliances can not be used, as a rule, in excision of the jaw and in operations on the hard palate. He describes in detail the method of preparing a patient for an anesthetic, and the method of its administration. He states emphatically that the patient should not be told to take long, deep breaths, but should be encouraged to breathe easily and naturally. He also states that in the stage of excitement it is unwise to hold the patient down too forcibly. The patient should feel that he has met an inanimate object and not a human adversary to whom he can show fight. Souther calls attention to the various reflexes which should be watched and to the methods of resuscitation. He also mentioned briefly the treatment of patients after anesthetization.

St. Louis Medical Review.

July 1.

36 Onomatologia Gastrologica. A. Rose, New York.
37 Rupture of the Gall Bladder (Spontaneous and Traumatic; with and without operation). B. M. Ricketts, Cincinnati.
38 Hypnotism and Crime. C. L. Tuckey, London, England.

July 8.

39 *Inflammatory Conditions of the Appendix Accidentally Brought to Light in Pelvic Operations. H. Robb, Cleveland, Ohio.
40 Migratory Uterine Fibroids. R. Peterson, Ann Arbor, Mich.
41 Rupture of the Gall Bladder (Spontaneous and Traumatic, with and without operation). B. M. Ricketts, Cincinnati.

39. **Inflammatory Conditions of the Appendix.**—Robb states that in a long series of abdominal operations he has made it a routine procedure to examine the appendix, and if he finds it diseased, to remove it, the patient's condition permitting. In 1,000 abdominal sections for pelvic disorders Robb failed to find positive evidence that in a single case the appendix was the primary seat of disease. Of 370 appendices removed and examined microscopically, 103 were normal, 46 showed signs of a chronic and 1 of acute inflammation. In 88 cases there was a hypertrophy of the subperitoneal or internal coat, or of both coats. In 66 cases the changes were of doubtful significance. In 36 cases the lumen was occluded, in 16 dilated, in 12 the appendix contained concretions, in 1 case the appendix was cystic and had undergone myomatous degeneration, and in 1 case no lymphoid tissue was present.

Medical Fortnightly, St. Louis.

June 10.

42 Lupus Erythematosus — Lupus Vulgaris — Syphilis. J. V. Shoemaker, Philadelphia.
43 Deaf Mutes and the Instruction of the Deaf and Dumb. A. F. Koetter, St. Louis.
44 Relation of Man to Nature (A Study Prompted by "Testimonies of the Sepulchres"). A. S. Ashmead, New York.
45 Anatomic Eponyms. R. S. Gregg, Chicago.

Oklahoma Medical News-Journal.

June.

46 Medical Ethics and Common Sense. A. K. West, Oklahoma City.
47 New Lower Jaw Splint. I. B. Bartle, Carmen, Okla.

Cleveland Medical Journal.

June.

48 Anchylosing Arthritis of the Spine—Its Pathology, Recognition, and Treatment. H. O. Feiss.
49 Hyoscin Treatment of Drug and Liquor Habits. H. G. Wagner.
50 Waste of Time Incident to Defective Vision. L. K. Baker, Cleveland.
51 Microscope and Micro-Photography. F. D. Snyder, Ashtabula.

Journal of Mental Pathology, New York.

June 8.

52 Heredo-Syphilis. Form—Infantile Multiple Sclerosis. S. De Sanctis, and Dr. G. L. Lucangeli.
53 Clinical Observation on a Rare Case of Phobia. P. Timpano.

American Journal of Obstetrics, New York.

June.

54 Details Regarding the Operation of Cesarean Section in Cases of Contracted Pelvis, Based on a Series of Thirty Cases. J. M. M. Kerr.
55 *Cesarean Section in Late Labor. R. W. Holmes, Chicago.
56 *Six Cases of Cesarean Section. J. B. De Lee, Chicago.
57 Study of Four Hundred Cases of Tuberculosis in Children. S. S. Adams, Washington, D. C.
58 Three Cases of Repair of Injury to the Ureter; Two by Transplantation into the Bladder, and One by End-to-End Suture. A. L. Smith.
59 Repeated Tubal Pregnancy. E. N. Liell, Jacksonville, Fla.
60 History of the Obstetric Forceps. H. G. Partridge, Providence, R. I.
61 *Use and Abuse of the Uterine Curette. R. P. McReynolds, Philadelphia.
62 Paul Portal, His Life and Treatise on Obstetrics, with Reflections on the Science or the Obstetrical Art in France from the Renaissance to the Eighteenth Century. C. G. Cumston, Boston, Mass.

55. **Cesarean Section in Late Labor.**—Holmes believes that this procedure is not a justifiable one and that the appropriate time for abdominal hysterectomy is at term before labor has begun or not long after active contractions have been in progress. The contraindications to the Cesarean section in late labor center in the following facts: Prolonged labor lowers the woman's resistance to shock; conduces to atony of the uterus, therefore to hemorrhage, occasionally necessitating hysterectomy; it develops certain effete substances, which are eliminated more slowly than they are produced, and which lower immunity by a species of autointoxication. During protracted labor certain secretions are poured into the uterus and vagina which offer excellent culture media for the development of bacteria normally present in the parturient canal, or introduced by examinations. After the membranes are projected through the os externum, or the head has molded into the os, they are exposed to the contamination of the vagina;

in removing the secundines and the child through the uterine incision they may soil the peritoneum or wound. The prolonged labor frequently is the determining factor in the death of the child, or so jeopardizes its life that its prospects are curtailed. Holmes deprecates the Cesarean section performed with inadequate assistance, filthy surroundings and makeshift facilities. An emergency operation should not be done unless there be very pressing indications.

56. **Cesarean Section.**—De Lee is of the opinion that the results obtained in 10 cases of Cesarean section encourage one to extend the field of this operation. Of these 10 cases, 9 mothers recovered and 9 babies lived. One child died in sixteen hours under symptoms of acute sepsis, though the mother recovered. The one patient who died had been in labor three days, had been examined under ether three times, and had a solid tumor of the ovary blocking the pelvis completely. The technic of the operation varied but little in each case. The transverse fundal incision was used only twice. The uterus was amputated three times, once for obstruction to the lochial flow and twice because of a severe vaginitis. One ovary was left in each of these cases to preserve the ovarian function as long as possible. The uterus was delivered through the incision in all the cases, but the abdomen was closed in three layers and no hernia has developed in any of the cases.

61. **Use and Abuse of Uterine Curette.**—McReynolds' article is based on the study of 170 cases of curettement. He uses the sharp curette almost exclusively, but occasionally finds use for a large, dull curette. Endometritis hyperplastica chronica or polyposa, subinvolution of the uterus, and puerperal conditions of the endometrium caused by the retention of some of the products of conception, yield promptly, as a rule, through a thorough and careful curettement, unless there is already present disease of the adnexa or a general septic infection. McReynolds scarcely ever finds it necessary to leave a packing of gauze in the uterine cavity, and when he does so he invariably removes it within twelve hours. In malignant growths not permitting a radical operation, a careful curettement and the free use of the cautery, followed by chlorid of zinc, has yielded surprisingly good results in his hands; the pain, foul discharge and hemorrhage are relieved; life is rendered much more comfortable and is lengthened materially. In curettement for diagnostic purposes his results have not been entirely satisfactory. In septic conditions, when the infection has passed through the endometrium into the muscle of the uterus to the Fallopian tube or to the cellular tissue around the uterus, or has been carried by the lymph vessels through the ovaries or elsewhere over the body, no appreciable benefit comes from the curettement, except to establish the diagnosis and to prove that the uterine cavity is free from all decomposing and septic material. In endometritis accompanying the submucous fibroids he has failed to see a curettement do any permanent good. In gonorrheal endometritis he has obtained anything but satisfactory results from curetting the uterus and swabbing out the cavity with pure carbolic acid, tincture of iodin, etc. In chronic endometritis McReynolds advocates a radical operation from the start, having seen but one case benefited by curettement. In dysmenorrhea from pathologic collections, the result from a dilatation and curettement are good. Major operations on the adnexa should be preceded by curettement of the uterus, unless there is some contraindication.

Interstate Medical Journal, St. Louis.

June.

63 Actinomycosis. J. A. Matlack, Galesburg.
64 *Laryngeal Diphtheria. O. H. Wilson, Nashville, Tenn.
65 Movable Kidney, with a Report of Five Successful Nephrorrhaphies. E. E. Gelder, Peoria, Ill.

64. **Laryngeal Diphtheria.**—The objects of Wilson's paper is to emphasize the importance of early mechanical relief when mechanical obstruction threatens life. It is wrong to delay until the pressure is marked. Rapidity of progress is the characteristic feature of this form of diphtheria. Intubation is not a difficult procedure and can be learned easily by practice; yet in no other operation does skill show to better advantage. An early operation, though possibly awkward, is better than waiting to give a moribund patient to an imported consultant.

American Journal of Surgery, New York.

June.

66 *Appendicostomy. J. P. Tuttle, New York.
67 Remarks on Origin of Malignant Growths; with a Note on the Treatment of Malignant Ulcerations by Balsam of Peru. P. F. Eve, Nashville, Tenn.
68 Diagnosis and Reducibility of Inguinal Hernia. W. B. DeGarmo, New York.
69 Paraffin in Surgery, A Critical and Clinical Study (Continued). W. H. Luckett and F. I. Horn, New York.
70 Surgical Treatment of Gastric Ulcer. J. F. Erdmann, New York.
71 Keloid of Female Breast. E. Lanphear, St. Louis.
72 Submucous Resection of Deviated Nasal Septum. S. Yankauer, New York.

66. **Appendicostomy.**—The technic employed by Tuttle is as follows: The patient having been prepared as for the "interval operation," the abdomen is opened by the intermuscular method; an incision one and one-half inches long is sufficient in all uncomplicated cases. The appendix having been found and brought out over the skin, its artery is tied and the mesentery stripped down to its junction with the caput coli; a suture is then passed at the lower angle of the wound through the peritoneum, the muscular wall of the cecum at its juncture with the appendix and back through the peritoneum on the opposite side of the wound, a second suture is then passed about one-half inch above the other, through the same tissues but on the upper side of the appendix. These two sutures being tied, the peritoneum is closed by continuous suture and the wound is closed by through-and-through or layer sutures, as the operator prefers; finally, one suture is passed through the skin and the muscular wall of the appendix on either side of the wound. The appendix is then wrapped in protective tissue, the upper angle of the wound is sealed by protective tissue and chloroform, and a simple dry dressing is applied. In thirty-six hours the dressing is removed and the appendix is cut off, about one-fourth of an inch from the skin of the abdomen. It will usually be found more or less gangrenous at its tip on account of the main artery having been cut off. Some small dilating instrument is introduced through the caliber of the appendix into the cecum, and this followed by the introduction of a No. 10 to 12 soft rubber catheter. This should pass in about four inches; a little silk thread should then be thrown around the protruding portion of the appendix and tied firmly around the catheter in order to prevent any escape of feces or intestinal fluid along the sides of the tube. This also serves to cut off the stump of the appendix flush with the skin. The catheter should protrude from the skin about two inches and should be fastened with a safety pin in order to prevent its slipping in either direction. The operation can be done quickly, it affords ample access for irrigation and medication of the colon, and the disagreeable features of artificial anus are practically eliminated. The opening does not close spontaneously and yet it can be closed by cauterizing the mucous membrane when advisable. Irrigation may be begun any time after catheter is introduced.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

June.

73 Treatment of Abdominal Injuries with Special Reference to Gunshot Wounds of the Liver. J. E. Summers, Jr., Nebraska N. G.
74 Hernia in the Italian Army. Col. P. Imbriaco., R. I. A.
75 Pulmonary Tuberculosis: Its Diagnosis and Course Under Favorable Climatic Conditions. E. D. Sinks, U. S. A., El Paso, Texas.
76 Fracture of the Head of the Radius. C. E. Banks, P. H. and M.-H. S.
77 United States Naval Hospital Ship Relief, with Some Notes on Hospital Ships. W. C. Braisted, U. S. N.
78 *Operation for the Radical Cure of Congenital Inguinal Hernia. A. C. Smith, P. H. and M.-H. S.
79 Extemporized Operating Room. M. A. Rebert, U. S. V.

78. **Radical Cure of Congenital Inguinal Hernia.**—Smith has devised an operation for the radical cure of congenital inguinal hernia which he employed in four cases(out of 63 hernias operated on in 60 patients). The method is as follows: After forming a tunic for the testes out of the lower end of the sac, the remainder of the sac, except the strip which lies immediately on the vas and its vessels and nerves, is trimmed away close to the abdominal cavity. The simple wound of the peritoneum which results is closed with a continuous suture, one extremity ending at the cord. The transversalis fascia is sutured either with the peritoneum or separately, and the operation is proceeded with according to the

Bassini method. The strip which is left attached to the cord consists of peritoneal membrane and does not interfere with the closure of the openings in the sac. There is no more difficulty in closing the peritoneal wound completely and securely than in any other situation.

Journal of Nervous and Mental Disease, New York.

June.

80 *Dementia Præcox. R. Sachs, New York.
81 Traumatic Cervical Hematomyelia and Complete Division of the Cord, with Probable Dislocation of Fifth Cervical Vertebra. C. S. Potts, Philadelphia.
82 Medical Treatment of Insanity. R. Jones, Claybury, England.

80. **Dementia Praecox.**—Especial stress is laid by Sachs on the following points: There are unquestionably many cases that correspond accurately to the types described by Kraepelin and his followers. This is particularly true of the earlier forms of mental derangement occurring in members of families in which there is a very marked psychic taint. Even in such individuals, however, many years pass before appreciable dementia sets in. The term should be carefully restricted to those cases in which mental deterioration at an early stage of the disease is clearly recognizable and should be carefully considered and if possible avoided in those cases in which a dementia may possibly be developed in the far distant future. Making the diagnosis of dementia praecox put the stamp of an incurable malady on individuals who may be sufficiently alert to be useful to themselves and to others for a long period of years, and in that sense does them a distinct injustice. There seems to be little gain in grouping widely different conditions under one heading simply because the individuals so afflicted are in the first third of life. The older plan of clinical subdivision is more commendable, and the tendency to dementia should be insisted on only when there is reason to think that a deterioration is certain to develop at a relatively early period.

Archives of Pediatrics, New York.

June.

83 *Etiology and Classification of the Summer Diarrheas in Infancy. C. H. Dunn, Boston.
84 *Fat in Its Relation to the Production and Cure of Infantile Marasmus. H. Stern, New York.
85 Albumin in the Urine of Apparently Healthy Children; Renal and Cardiovascular Changes in Children as Seen in Southern California. W. A. Edwards, Los Angeles.
86 *Etherization of Children. W. G. Elmer, Philadelphia.

83. **Summer Diarrheas in Infancy.**—Dunn states that the diarrheal diseases of infancy occurring in the summer months differ in no way, either clinically or anatomically, from the diarrheal diseases occurring in the cooler months, except in their much greater frequency. Classification on an anatomic basis, as for example into functional and organic, or noninflammatory and ileocolitis is not convenient for etiologic study, owing to the variety of lesions found in cases of similar etiology and similar clinical course, and to the lack of correspondence between the anatomic and clinical pictures. The following clinical classification is suggested: (a) Acute nervous diarrhea, characterized by loose stools of normal color and odor, without abnormal constituents. (b) Irritative diarrhea. Acute intestinal indigestion of the irritative type, characterized by the absence of persistent fever, and by the presence of curds and undigested masses in the discharges. (c) Fermental diarrhea. Acute intestinal indigestion of the fermental type, characterized by the absence of fever, and by green stools of a foul or sour odor. (d) Infectious diarrhea, characterized by the existence and persistence of fever, and by the tendency toward early signs of ileocolitis, as shown by the presence of blood, and excess of mucus in the discharges. When a specific organism, the *Bacillus dysenteriæ*, is proved to be the cause, the case may be further particularized by the term infantile dysentery. (e) Rare cases occur, corresponding to the known description of heat exhaustion and cholera infantum. Of the above differentiated types, the indigestion, including the irritative and fermented cases, is by far the commonest. The chief or primary cause of all the above types is the increased heat of the weather occurring during the summer months, which probably acts in the noninfectious cases by producing functional disturbance either of the nervous system or of the digestion; and which acts in the infectious case by producing in the intestine conditions more favorable to the occurrence of infection. The name thermic diarrhea can be given to the entire group. Bacteria are the secondary cause of a certain number of cases, such cases being mainly, if not wholly, of the type classified clinically as infectious. Infection occurs by the introduction of bacteria from without, or by autoinfection with bacteria already in the intestine. The latter is probably the usual method. The *Bacillus dysenteriæ* is a cause of most of the infectious cases. Whether it is the sole cause remains to be determined. The *Bacillus dysenteriæ* can often be found in the intestine in cases in which it probably has no causal relation with the pathologic process. Such cases are usually clinically of the non-infectious type. Other organisms are probably a cause of some infectious cases. The anatomic changes of various kinds included under the term ileocolitis may occur in any of the above clinical types except the acute nervous. Anatomic changes of some kind probably occur in all infectious cases.

84. **Relation of Fat to Infantile Marasmus.**—The data which may be gleaned from Stern's paper are the following: The overwhelming majority of cases of infantile marasmus occur in artificially nourished children. The gastrointestinal disturbances underlying infantile atrophy are very often due to the character of the food and not infrequently to its fatty contents. While the quantity of fat ailment has found frequent practical consideration, the chemical character of the fatty substances entering into the baby's nutriment have hardly ever been inquired into by the clinician. The composition of the fat of cow's milk is greatly at variance with that of the fat of human milk, differing especially in its far greater contents of volatile fatty acids, among which butyric acid is the most important. Butyric acid is the mother substance of the acetone bodies to the presence of which a number of disorders to which the infant is prone have been ascribed by various observers. Butyric, caproic, caprylic and capric acids are contained in the fat of cow's milk in from six to eight times the amount in which they are present in that of human milk. The infantile organism can not cope successfully with the fat of cow's milk even in a mere physical sense. This is evidenced by the decidedly smaller absorption of the fat compound derived from cow's milk than from human milk. The occurrence in the feces of absolutely and relatively larger amounts of fat of cow's milk is *prima facie* evidence of its more incomplete utilization by the youthful organism. As the physical and chemical properties of the milk fat are dependent on the absolute and relative amount of lower and higher and uncombined fatty acids, it is evident that the vast discrepancy existing between the constitution of cow's milk fat and mother's milk fat can not be overcome by any possible modification of the former. Apart from the butyric acid origin of the acetone bodies we find that the volatile fatty acids as furnished by the fat of cow's milk are decided irritants of the delicate intestinal mucosa of the infant. The ingestion of these acids, therefore, is the primary cause of many instances of gastrointestinal irritation and disease followed by undernutrition and bodily retrogression. Alteration in the fat supply as exercised to-day is almost without exception a quantitative one, consisting of reduction, suspension and even increased supply of fat ailments. Withdrawal of milk fat in handfed infants frequently results in cessation of the local disturbance. It is obvious, however, that the infant can not exist for any length of time without fatty ingesta of some kind. Furthermore, the incipient marasmic condition can not be relieved unless a sufficient amount of assimilable fats yielding but insignificant amounts of volatile fatty acids is added to the nutriment. Yolk fat seems to be the ideal fat for infants suffering from chronic gastrointestinal disturbance together with latent or even pronounced athrepsia infantum. Yolks should not find employment in the newborn nor in the infant which thrives on the physiologic nutriment or on a modification of cow's milk. Yolks should be used only in those pathologic conditions which may lead to athrepsia infantum and in those which are due to or aggravated by the fat constituents of the nourishment. There are two essentials which must be followed for good results from the ingestion of yolks, viz., the yolk fat must completely replace the milk fat,

and the amount of yolk fat, without being in excess, must be adequate, that is, it must conform to the calorie and nutritive demands of the organism. The electrical conductivity of skimmed milk plus physiologic amounts of yolk fat is probably somewhat greater than that of native milk.

86. **Etherization of Children.**—According to Elmer, there are but few occasions in which ether may not be given to children in preference to other anesthetics. The most important of these is an abnormal state of the respiratory organs, as in acute bronchitis, pulmonary congestion or pneumonia. The preparation of children for the operation and anesthetic does not differ materially from that of adults. Solid food should be absolutely forbidden on the day of operation. If an operation is fixed for 11 o'clock in the morning, a cup of broth may be given at 7, unless there is some definite reason for not doing so, and water may be given at the same time. The fluids are promptly absorbed from the stomach, and four hours later the child should be in excellent condition for the anesthetic. The open method of administration is the one which should be adopted always. In order to lessen shock and to preserve bodily heat and energy the vital activity of the tissues should be kept up to its highest point, and for this purpose an abundance of oxygen is necessary. This can best be supplied by pure fresh air. The smaller size of Allis inhaler should be used. This should have a clean, folded towel pinned closely about it, and permitted to extend about an inch below the lower margin of the cone. The open end of the cone should always be allowed to remain free and unobstructed, admitting pure air without restraint. If the child is very much reduced from prolonged disease, and the operation is apt to be a long and dangerous one, every precaution must be taken to preserve the vital forces. The child's body should be swathed in cotton batting or an electrotherm may be used on the operating table. There must be absolute quiet in the room, and only the anesthetist and the nurse should be present. The article closes with specific directions as to the method of etherization and how to meet emergencies.

Virginia Medical Semi-Monthly.

June 9.

87 *The Use of the Uterine Curette. J. W. Bovée, Washington, D. C.
88 Treatment of Neurasthenia. J. A. Hodges, Richmond, Va.
89 Static Electrical Treatment of Neurasthenia. R. W. Miller, Barton Heights, Va..
90 Myoma of Uterus. J. M. Hundley, Baltimore, Md.
91 Tuberculosis Among the Mountains of Southern West Virginia. J. W. Preston, Keystone, W. Va.
92 Closure of Abdomen by Longitudinal Suture. E. B. Claybrook, Cumberland, Md.
93 Chronic Suppuration of Middle Ear. F. M. Cunningham, Macon, Ga.
94 Abscess of the Liver. M. E. Nuckols, Richmond, Va.
95 Principles of Surgery. S. McGuire, Richmond, Va.

87. **Use of Uterine Curette.**—As the result of an extensive experience, Bovée says he has developed the curette touch. The dull variety is to be used for the removal of shreds of tissue after abortion or miscarriage. The sharp serrated ininstrument becomes necessary in the removal of intrauterine growths. The plain, sharp curette is employed in all forms of endometritis not associated with malignant disease of the uterus that does not spring from the mucosa, carcinoma of the body, pedunculated submucous fibroids, mucous polypi, subinvolution, metritis and chronic passive uterine congestion. The dull, serrated curette is applicable to practically all the conditions for which the plain, dull curette is used, and is by some considered preferable. These, Bovée says, are practically all the conditions in which uterine curettage is applicable. Doing curettage in the office and sending the patient home afterward he considers malpractice, inasmuch as the technic of such a procedure must be very faulty and the danger of the infection enormously enhanced.

Kansas City Medical Index-Lancet.

June.

96 Etiology and Pathology of Acute Articular Rheumatism. L. G. Taylor, Kansas City, Mo.
97 Diagnosis and Prognosis of Acute Articular Rheumatism. A. Miller, Kansas City, Mo.
98 Complications of Acute Rheumatic Fever. F. Murphy, Kansas City, Mo.
98½ Treatment of Acute Articular Rheumatism. B. H. Zwart, Kansas City, Mo.
99 What Shall We Prescribe? R. P. Walker, Belton, Mo.

Postgraduate, New York.

June.

100 Epidural Abscess. W. S. Bryant, New York.
101 Transthoracic Resection of the Lower End of the Esophagus in a Dog. W. Myer, New York.
102 Case of Poliomyelitis with Multiple Deformities Corrected. H. L. Taylor, New York.
103 Case Showing the Result of the Stacke Operation for Chronic Suppuration of the Middle Ear. W. C. Phillips. New York.
104 Case of Diffuse Idiopathic Atrophy of the Skin and Scleroderma. W. B. Brown, New York.
105 Card System for Patient's Histories. G. G. Ward, Jr., New York.
106 Case of Congenital Cohesion of the Labia. Id.
107 General Practitioner's Diagnosis of Nasal Sinus Disease. H. B. Douglass, New York.

Archives of Physiological Therapy, Boston.

May.

108 Effect of the X-ray on Pregnancy. S. Tousey, New York City.
109 Value of X-ray in the Treatment of Tuberculosis. H. K. Pancoast, Philadelphia.
110 Interpretation of Radiographs of the Chest. P. M. Hickey, Detroit, Mich.
111 Notes on X-light. W. Rollins, Boston, Mass.
112 Portable Illumination Box. G. E. Pfahler, Philadelphia.

California Medical and Surgical Reporter, Los Angeles.

June.

113 History of Syphilis. R. Williams, Los Angeles.
114 Primary and Secondary Lesions of Syphilis. R. Wernigk, Los Angeles.
115 Moral Aspects of Syphilis. G. MacGowan, Los Angeles.
116 Syphilis of the Nervous System. R. Moore, Los Angeles.
117 Syphilis of the Eye and Upper Air Passages. H. B. Ellis, Los Angeles.
118 Syphilis of the Bones. J. Kurtz, Los Angeles.
119 Syphilis of the Placenta. T. J. Coffey, Los Angeles.
120 General Treatment of Syphilis. C. D. Lockwood, Pasadena, Cal.

Louisville Monthly Journal of Medicine and Surgery.

June.

121 Intranasal Deformity and Redundancy and Their Relations to Diseases of the Upper Air Passages. T. L. Brunk, Birmingham, Ala.
122 Diabetic Gangrene. H. H. Grant, Louisville, Ky.
123 Grip. B. C. Frazier, Louisville, Ky.
124 Visit to New Mexico. G. H. Chapman, Uniontown, Ky.

Illinois Medical Journal, Springfield.

June.

125 Ideals and the Practices of the Medical Profession. W. E. Quine, Chicago.
126 What We Must Learn and Unlearn in the Treatment of Tuberculosis. J. W. Pettit, Ottawa.
127 High Frequency in Insomnia. W. F. Somerville, Glasgow, Scotland.
128 Impotence and Sterility Due to Gonorrhea. F. A. Leusman, Chicago.
129 Relation of the Heart and Kidneys in Disease. C. F. Wilkinson, Danville.
130 Operative Treatment of Empyema of the Antrum of Highmore. O. T. Freer, Chicago.
131 Educational Treatment of Neurasthenics. C. D. Center, Quincy.
132 Nitrous Oxid-Ether Anesthesia. W. Van Hook, Chicago.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

July 1.

1 Presidential Address delivered before the Metropolitan Counties Branch. The British Medical Association and the Advancement of Science. A. Clark.
2 *Presidential Address delivered before the Lancashire and Cheshire Branch, Alcohol as a Therapeutic Agent. J. Barr.
3 Cold Effusion in Delirium Tremens. W. Broadbent.
4 Radium Bromid in the Treatment of Rodent Ulcer. A. R. Manby.
5 *Leucocythemia Treated by the X-rays, with a record of four cases. C. H. Melland.
6 Treatment of Ringworm of the Scalp by the X-rays. T. M. H. Macleod.
7 General Peritonitis Due to Perforative Appendicitis. A. W. M. Robson.

2. **Alcohol as a Therapeutic Agent.**—Barr states that it is impossible to foretell the action of alcohol in any particular case or to know whether it is going to do good or harm. He dissents from the popular opinion that constant use of alcohol confers immunity from its toxic effects and says that with increasing years men are able to stand less and less alcohol, while in advanced age the results of free imbibition are disastrous. From its irritating action on the nerves of the stomach alcohol may cause a temporary contraction of the splanchnic vessels and a slight rise in the general blood pressure. Once absorption takes place, however, it has a paretic effect on the vasomotor system and the arterial blood pressure falls. There

is then a rush of blood to the surface through the paretic vessels; the nerves and vessels lose their power of regulating the body temperature and consequently there is a large cooling surface which allows of a rapid lowering of the temperature. This effect may explain the value which some German physicians attach to the use of alcohol in conjunction with cold baths. Barr states that in pneumonia almost the only use of alcohol is as a specific. He also states that alcohol is not a food in the proper sense of the word and that the advice of the Apostle Paul to Timothy to take a little wine for the stomach's sake must have referred to a fairly dilute solution of alcohol, as we know that while strong potations increase the secretion of gastric juice they inhibit the digestive function. Barr refers at some length to the effect of alcohol in various diseased conditions.

5. **Leucocythemia Treated by the X-Rays.**—Melland reports 4 cases of this condition in which the *x*-rays were used, with good results in 3 cases. In each case the spleen diminished in size with improvement in the character of the blood, the degrees of improvement differing in the 3 cases. The improvement in the general health of the patients, however, was more marked and of greater importance than the changes in the blood or in the spleen. He states that though it is too soon to assert that permanent benefit has been conferred in these conditions, it can safely be asserted that great amelioration of the conditions may be secured and that even if complete cure be not effected, the patients may have months or even years of comfortable existence.

The Lancet, London.

July 1.

8 Diseases of the Heart. J. F. Goodhart.
9 *Reaction of Phenylhydrazin with Other Substances than Dextrose Occurring in the Urine. P. J. Cammidge.
10 Uric Acid: A Rational Treatment for Its Elimination in the Light of Recent Research. R. Fenner.
11 Recent Outbreak of Typhoid Fever at Lincoln. E. C. Clements.
12 Charcot's Disease of the Ankle in a Case of General Paralysis of the Insane. W. Billington.
13 Fracture of the Os Penis in Otters. J. Bland-Sutton.

9. **Reaction of Phenylhydrazin.**—Cammidge describes a modification of von Jaksch's phenylhydrazin test as follows: 0.5 gram of phenylhydrazin hydrochlorid and 1.5 grams of sodium acetate should be dissolved by gentle heat in a few cubic centimeters of water in a test tube and then from 5 to 10 c.c. of the urine added. The mixture is brought to the boiling point and maintained there for three minutes with strong, and five minutes with weak, solutions of sugar. The test tube is then set aside to cool and the deposit examined for osazone crystals in five or ten minutes. A "knife point" of sodium acetate is added to 10 c.c. of the urine, then from 1 to 2 c.c. of 10 per cent. acetic acid, and 5 drops of pure phenylhydrazin are introduced. The mixture is heated in the water bath or over the free flame in the same way as when hydrochlorid is employed. Cammidge also mentions Kowarski's modification of this test, which gives very satisfactory results and is more delicate. It consists in mixing five drops of pure phenylhydrazin in a test tube with ten drops of acetic acid, gently shaking and then adding about 1 c.c. of a saturated solution of sodium chlorid. To the solid mass that forms are added from 3 to 5 c.c. of the urine, and the test tube is heated in the free flame for two minutes after its contents begin to boil. On cooling, the osazone crystals separate from urines containing 0.2 per cent. of sugar in one minute, and from weaker solutions in about five minutes. In examining 100 normal urines Cammidge found that when heated in the water bath for an hour four of them showed a crystalline deposit, while by boiling in a free flame for five minutes six specimens gave a positive result. Using the same methods but shortening the period of heating to twenty minutes and two minutes respectively exactly the same results were obtained, so that the mere time or method of applying the heat can not be relied on to differentiate glycuronic acid from the sugar. Cammidge describes in detail his further researches on this subject and concludes by saying that it is evident that in phenylhydrazin we possess a most useful reagent for inquiring into variations in the urine accompanying certain changes in the metabolism.

Intercolonial Medical Journal of Australasia, Melbourne.

May.

14 Tuberculous Meningitis. W. H. Summons.
15 *Note on Goat's Milk. A. J. Wood.
16 Hysteria in Children. W. H. Summons.
17 Three Cases of Obstruction of the Small Intestine. A. E. Morris.
18 Case of Pylorectomy and Partial Gastrectomy—Posterior Gastro-Jejunostomy—Recovery. R. S. Stirling.

15. **Goat's Milk.**—Wood refers to the difficulty in all large cities of obtaining fresh milk for infants and advises the use of goat's milk for bottle-fed infants. He states that a number of infants under his care have been fed through the whole summer on pure goat's milk and have never had diarrhea. He says that the mother of one of the children reported that the child digested the milk without the least sign of flatulency when it was given warm from the goat, while the digestion was not so easy if the milk had stood for some hours. He says that most children can digest goat's milk undiluted and that while taking it they gain in weight and development. He calls attention to the custom in Switzerland and in some parts in Italy of shaving the udders and allowing the babies to nurse directly from the goat.

Annales de Dermatologie, Paris.

Last indexed XLIV, page 1407.

19 (VI, No. 3.) *Recherches sur l'alopécie atrophiante, variété pseudo-pelade. L. Brocq, Lenglet and Ayrignac. (Commenced in No. 1.)
20 De quelques altérations cutanées determinées par l'enveloppement humide (sudamina de maceration). C. Audry.
21 (No. 4.) *Sur le processus histologique des radio-épithélites (action des rayons X sur l'épiderme normal et sur les tissus epitheliomateux). E. Dalous and J. Lasserre (Toulouse).
22 De la compression en photothérapie. (Un nouveau compresseur mécanique enregistreur.) M. Mezerette.
23 (No. 5.) *La symbiose fuso-spirillaire. H. Vincent (Val-de-Grâce.)
24 Dermatite pustuleuse prémycosique. C. Audry (Toulouse).

19. **Atrophic Alopecia.**—An illustrated description is given in this article of a new clinical form of atrophic alopecia, for which the term "pseudo-pelade" is adopted. It is a process of atrophy and sclerosis affecting the hair-covered regions of the body, especially the scalp, terminating in patches of baldness, smooth, of pseudo-cicatricial aspect. It seems to be closely allied to erythematous lupus and keratosis pilaris. The article is based on three cases.

21. **Action of X-Rays on the Tissues.**—The microscope reveals that there are certain special lesions due to the action of the Roentgen rays on the epithelium, an actual "radio-epithelitis," as Dalous styles it. Similar modifications occur in the tissue of a neoplasm, and as they develop they induce a macrophagic connective-tissue reaction. All the cells of the neoplasm do not feel the effect of the rays to the same degree, some being more sensitive than others. In the sound epithelium the basilar layer, or *stratum germinativum*, and the cells of the mucous layer, immediately above, are affected most, and the corresponding cells in an epithelioma. On the other hand, the cells of the prickle layer and of the horny layer are too firmly interlocked and too large to be effectually attacked by phagocytosis. The latter process, besides, seems to be secondary in importance. The histologic findings described explain why epitheliomata of the type of the cancroid and the squamous epithelioma are less favorably influenced by radiotherapy than epitheliomata of the basocellular type, columnar epithelioma and rodent ulcer. The Roentgen rays are decidedly elective in their action. The most sensitive cells in the neoplasm are those which are derived from cells which normally are most sensitive to the action of the rays. In cutaneous epitheliomata, therefore, the squamous and the columnar types, the former are resistant to the *x*-rays and the latter succumb to them, corresponding to the elective action of the *x*-rays on the cells of the sound epidermis.

23. **Association of the Fusiform Bacillus and a Spirillum.**—Vincent has been continuing his researches on the symbiosis of the fusiform bacillus and a spirillum which induces the affection known as Vincent's angina. Its occurrence has been reported in all countries, generally affecting persons between 18 and 30. His own experience has been that it forms 2.26 per cent. of all cases of sore throat. The fusiform bacillus is a normal inhabitant of the buccal cavity, it is ubiquitous, like

the tetanus bacillus, and, like the latter, requires special conditions for its development. These conditions are depressed vitality from any cause, starvation, cachexia, or chemical or microbian intoxication, with a lesion caused by some other microbe. When the organic defenses are broken down, the fusiform bacillus installs itself and is liable to proliferate to an amazing extent, causing vast suppurations when air does not reach the parts. In 17 cases of subperiosteal dental suppuration he found this fuso-spirillar symbiosis in 7 instances, and once in pure cultures. This symbiosis was also found in 11 out of 19 cases of appendicitis, in periostitis of the tibia or fetid abscess of the leg, etc. He is convinced that noma and gangrene of lungs or pleura are the result of fuso-spirillar infection. The angina due to this symbiosis he regards as a kind of hospital gangrene of the mouth. The superficial lesions are identical under the microscope, but in the depths the fusiform bacillus vegetates alone, with a necrobiotic and hemorrhagic action. He adds the literature, which amounts already to 131 articles since his first publication in 1896. Inoculation of a healthy person with hospital gangrene or the fuso-spirillar combination induces merely an insignificant reaction and lesion.

Berliner klinische Wochenschrift.

25 (XLII, Nos. 24-25.) *Pathologische Anatomie und Infektions-Weg bei der Genickstarre (epidemic cerebrospinal meningitis). Westenhoeffer. Id. und Bekämpfung (prophylaxis). M. Kirchner. Id. Grawitz.
26 *Zur Pathogenese der Lungen-Tuberkulose. F. Weleminsky (Prague).
27 Schwierigkeiten der Indikations-Stellung zur Operation bei Jackson'scher Epilepsie. W. Vorkastner.
28 *Ocular Disturbances in Epidemic Cerebrospinal Meningitis.—Augenstörungen bei der Genickstarre. Heine (Breslau).
29 Fall von Bronchial-Kolik infolge Broncho-Lithiasis. A. Muszkat.
30 *Drowning and Resuscitation.—Ertrinkungsgefahr und Rettungswesen an der See. E. Margulies.
31 *Practical Aspects of Hemolysis.—Beziehungen der Hämolyse zur Praxis. Hahn (Nauheim).
32 Production of Antibodies a Secretory Cellular Process.—Die Antikörperproduktion als cellulärer Sekretions-Prozess. H. Lüdke.

25. **Epidemic Cerebrospinal Meningitis.**—Westenhoeffer's report on 29 autopsies of victims of the epidemic was mentioned on page 1996 of the last volume of The Journal.

26. **Pathogenesis of Pulmonary Tuberculosis.**—Weleminsky's research has revealed the exceptional position occupied by the bronchial glands in the lymphatic system. Guinea-pigs were infected with tuberculosis at various points and the glands examined later. It was found that the infection never occurred through the blood, but always by way of the lymphatics. The bronchial glands seem to be the terminal reservoir not only for the lung lymph, but also for the lymph from the rest of the body, before it is poured into the blood system. When animals were inoculated in the peritoneum, rectum or subcutaneously in the groin, at first it seemed as if the infection followed an arbitrary, erratic course, but the discovery of hidden glands showed the regular sequence of the progress of the infection, without an exception, in his last 300 experiments. The bronchial glands are like a kind of heart, into which the lymphatics from all sides discharge their contents, including tubercle bacilli from remote points of entrance.

28. **Ocular Symptoms in Epidemic Cerebrospinal Meningitis.**—Heine writes from the eye clinic at Breslau in regard to the ocular disturbances noted in an experience of 100 cases of epidemic cerebrospinal meningitis. The pseudo-glioma characteristic of this disease leads to atrophy of the eyeball, but, although the eye is blind, it is not disfigured and never requires operative interference. This form of severe metastatic ophthalmia never entails sympathetic ophthalmia. This finding is so characteristic of epidemic cerebrospinal meningitis that we may almost conclude from it in regard to the pronounced or abortive occurrence of the disease at some past time. In his experience, with a single exception, it has been unilateral, but the milder affections, which do not reach this severe stage, frequently appear in both eyes. The one exception was a child, blind and deaf as the result of the disease, with bilateral pseudo-glioma. He reviews the experiences at other hospitals throughout Silesia. In every 100 patients, 20 presented ocular symptoms, the total list including 15 involving the motor apparatus, 10 the optic nerve tract, and 5 the interior of the eye. In his own 100 patients, optic neuritis and disturbances in the retina were observed in 9 patients and were probable in 5 more. In 13 there were nystagmus, strabismus or paralysis, etc., probable in 2 more, and unilateral ophthalmia in 3, bilateral in 2, the total being 21 patients, with 27 positive and 7 probable ocular disturbances. In conclusion, he reviews what has been written lately on the subject. He has never had occasion to see some of the symptoms described by other authors, such as edema of the conjunctivæ and subepithelial infiltration of the cornea. He calls attention to the rarity of winking, especially at the onset of the disease. It may aid in differentiation.

30. **Death from Drowning.**—Margulies shows that the first phase of drowning—that of arrested respiration—lasts from 31 to 76 seconds, according to different authors. The second stage, that of dyspnea, lasts from 60 to 150 seconds, Brouardel favoring the shorter time. The drowning man breathes deep, with open eyes, and swallows water. The third stage—that of asphyxia—lasts for one minute, according to Brouardel, and the terminal respiratory movements for about 30 seconds longer. Rescue during the first minute of drowning has every chance of success; the chances during the second minute are less favorable, and after the beginning of the third minute they grow more and more dubious. Brouardel has further established the fact that when an animal is drowned after excessive muscular fatigue these various stages of the drowning succeed each other in less than half the time required in normal conditions. One factor that prolongs the act of drowning is that the drowning person is liable to come to the surface and get a breath of air, thus postponing the terminal stage. In sea bathing, to prevent accidents from drowning, Margulies advises that attendants be stationed where they can reach a drowning person in less than one minute. No time should be wasted in throwing life preservers, but the attendant must be ready with a boat. As the interval is so much shortened in case of fatigued muscles, a narrow limit should be set for the swimmers, any one passing beyond that limit doing so at his own risk, on account of the inability to reach him in the half of the brief interval on which one can count in the case of other drowning persons.

31. **Hemolysis in Relation to Practical Medicine.**—Hahn's numerous experiments and experiences with human volunteers confirm Koeppe's assertions in regard to hemolysis from acids and heat. He further concludes that alcohol is a decided poison for the blood corpuscles, inducing hemolysis proportionately to the concentration and, with a given concentration, proportionately to the temperature. The intensity of the hemolytic action is further dependent on its duration. When supplemented by the action of chloral, the alcohol hemolysis is reinforced. The superposed action of alcohol and chloral—even at normal temperatures—suggests the advisability of caution in administering chloral to alcoholics, and also in case of fever. The alcohol further diminished the resisting power of the red corpuscles and rendered them more susceptible to other injurious influences. The melting point of the blood corpuscles was lowered in proportion to the concentration. He believes that the alcohol plus chloral dissolves out the fatty elements in the wall of the blood corpuscles, thus inducing hemolysis by another mechanism from that of the osmosis of water hemolysis.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

33 (XXXI, No. 23.) *Die Behandlung der puerperalen Infektion. v. Rosthorn.
34 Der günstigste Zeitpunkt der Appendicitisoperation (moment for operating). L. Arnsperger.
35 *Zur Pathogenese der Hirschsprungschen Krankheit. J. Ibrahim.
36 *Pseudo-leukemic Affections due to Tuberculosis.—Ueber die durch Tuberculose bedingten pseudoleukämischen Erkrankungen und ihre Behandlung mit Neu-Tuberculin. O. Reunert.
37 Weitere Mitteilung über Syphilis-Impfung am Pferde (inoculation of horse). Piorkowski.
38 Testing Sense of Taste.—Eine neue Methode zur klinischen Prüfung des Geschmackssinnes mittels eines Gustometers. W. Sternberg.
39 Results of Koch's Research on African Horse and Cattle Disease.—Küstenfieber der Rinder und Pferdesterbe. F. K. Kleine.
40 *Zur Geschichte der epidemischen Cerebrospinal-meningitis (history). A. Gottstein.
41 Study and Practice of Medicine in Italy. Carrara.

33. **Puerperal Infection.**—Rosthorn passes in review the various methods of treating puerperal infection, remarking in regard to intravenous infusion of a solution of formol that this method of treatment has been discarded on account of its dangers, demonstrated by experiments on animals. He is convinced that intravenous injection of the silver salts is perfectly harmless, with good technic, but that their action is unreliable. They probably act by their chemotactic inhibiting influence on the bacteria, but enormous quantities of leucocytes are sacrificed in the struggle. If the blood-forming organs are unequal to the task, then the drug fails to cure. There is also a possibility of some electro-catalytic action. On account of its harmlessness and our helplessness generally, the method should be given a trial and not be dropped too quickly. He gives, in a table for comparison, the details of the six antistreptococcus sera on the market, Marmorek's, Aronson's, Tavel's, Moser's, Meyer's and Paltauf's. The reason why serum treatment fails so completely in one case and succeeds so brilliantly in an apparently entirely similar case is a matter for further research. Tavel suggests that there may be a lack of cytases or leucocytes in the negative cases, and that it may be possible to supply the missing elements when we learn which they are.

35. **Congenital Dilatation of the Colon.**—Ibrahim gives illustrations of an infant with an abnormally long and flexible sigmoid flexure, inducing tympany and stagnation of feces. He regards the case as the initial stage of idiopathic dilatation of the colon.

36. **Pseudo-Leukemic Affections Due to Tuberculosis.**—Reunert remarks that the diagnosis of the tuberculous origin of a pseudo-leukemia affection is rarely made during life. In the case he describes, the presence of a tuberculous iritis suggested the advisability of treatment with "new tuberculin." This treatment not only cured the iritis, but with it also all the symptoms of the pseudo-leukemic affection, thus demonstrating its tuberculous nature. The first manifestations of the affection were noted in the spleen and glands, predominantly the former. Nothing suggested tuberculosis until the iritis developed. It was not influenced by antisyphilitic treatment, and tuberculin was tentatively tried on the assumption that the ocular affection had possibly developed secondarily. The prompt healing of the iritis and, with it, the vanishing of all the pseudo-leukemic symptoms cleared up the diagnosis. The ocular affection is entirely healed, but whether the glandular affection has healed or merely entered on a phase of latency time alone will tell. The patient was a boy of 8. The new tuberculin was used according to von Hippel's technic, as described in the *Archiv. f. Ophthalmologie*, lix, No. 1, which is free from all danger. The injections commence with 1/500 mg. of solid substance, repeating on alternate days, and increasing the amount by 1/500 mg. until 1/50 mg. is reached. The amount is then increased by 1/50 mg. until 1/5 mg. is reached, then gradually increasing to the maximal dose of 1 mg. The temperature is taken every two hours, and if the temperature rises by .5 of a Centigrade degree the same dose is continued until there is no temperature reaction. The patient was dismissed, cured, in about three and a half months.

40. **History of Cerebrospinal Meningitis.**—Gottstein says that the history of this disease can'not be traced farther back than 1805; previously to that date it was probably confused with typhoid. He cites the older authorities and mentions that the exanthem was described even in the earliest epidemics.

Therapie der Gegenwart, Berlin.

Last indexed page 295.

42 (XLVI, No. 2.) *Zur therapeutische Anwendung (application) des Nitroglycerins. C. Binz (Bonn).
43 *Ueber den Wert des Formaldehyds für die interne Therapie. P. Rosenberg (Berlin).
44 Weitere Beobachtungen zur Salicylbehandlung (die intravenöse Injection). Th. Brugsch (Altona).
45 *Zur Behandlung des Schnupfens der Säuglinge (infantile coryza). L. Ballin (Berlin).
46 Die Behandlung der chronischen Verdauungskrankheiten im Säuglingsalter (digestive disorders of infants). H. Roeder (Berlin).
47 Early Diagnosis of Orthopedic Affections and Its Importance.—Die Frühdiagnose bei orthopädischen Erkrankungen und ihre Bedeutung für die Prognose. G. Müller.
48 Die Behandlung der Gallensteinkrankheit (cholelithiasis). G. Klemperer (Berlin).

42. **Use of Nitroglycerin.**—Binz showed long ago that nitrates may be converted in the system to nitrites. This action is the basis of the therapeutic efficiency of nitroglycerin. The results of various investigations concerning the toxic power and fatal dose of nitroglycerin have shown great differences of opinion among clinicians. Some regard it as a poison equal to prussic acid or nicotin, while others have found a tolerance of doses much larger than those usually thought safe, and two cases have been observed in which large amounts were taken without harm. Binz found, by experiments on animals, that doses much larger than those used in medicine produced no toxic effect. Man may react more readily, and there may be great differences between individuals. Binz found that one set of tablets contained scarcely a trace of the drug, while another showed more than the required quantity. The dry form, therefore, should be discarded for an alcoholic 1 to 4 per cent. solution. Of these solutions, one drop should be used as the initial dose, which may be gradually increased. Each drop represents from ¼ to 1 mg. of the nitroglycerin. This drug has the advantage over sodium nitrite that it is not decomposed in the stomach, while it is more gradual in its action and more lasting in its effects than amyl nitrite. It has no explosive action when dissolved in alcohol, and, he thinks, may well supersede the nitrites.

43. **Value of Formaldehyd in Internal Medicine.**—Contrary to the views of previous authors, Rosenberg does not believe formaldehyd to be highly poisonous and corrosive. Hundreds of patients who came under his observation showed no toxic action, and in all cases in which the blood and urine were examined there was no evidence of toxic action, no casts, and no albumin or changes in the blood. Because of their different action, formol and formalin should be distinguished from formaldehyd. The toxic action previously attributed to formaldehyd is due to its irritating qualities, and even these depend on the manner of its use. The irritating quality can be removed by combining formaldehyd with another substance from which it may be gradually split off. Jacobson experimented with such a preparation and demonstrated that it is non-toxic. When properly administered, formaldehyd has never had any bad effect on the human organism, even in pathologic conditions, and usually proved beneficial. Rosenberg claims to have found a stable preparation of formaldehyd in a compound from which it is gradually split off in the organism. It is administered in tablet form, and he regards it as a great advance in medication. The pleasant-tasting tablet may be held in the mouth, chewed, or taken in solution, but should not be swallowed whole. He is convinced that its use might be successfully extended to typhoid. It has not yielded conclusive results in tuberculosis, but it has proved very effectual in his practice in the last few months. He has used it exclusively in 6 cases of diphtheria, in 7 of scarlet fever, 2 of erysipelas, 1 of pyemia, 2 of cystitis and 45 of tonsillitis. Each tablet contains 1 cg. of formaldehyd in a loose combination with milk, sugar and menthol, with some ordinary sugar and a little pepsin, hydrochloric acid and an aromatic vehicle.

45. **Treatment of Coryza in Infants.**—Ballin believes that the treatment of coryza in infants is especially important because the local obstruction to breathing sometimes prevents nursing, thus necessitating artificial feeding and often resulting in marked loss of weight. It may cause sudden death from asphyxia or from complicating capillary bronchitis, which is due, he thinks, principally to aspiration of infectious secretions from the nose. The swelling and secretion in the nose must be reduced, and, since cocain is too dangerous, he recommends soaking a small tampon of cotton in a 1 per cent. solution of adrenalin, and placing it in each nostril alternately, leaving it from two to three minutes. The mucous membrane becomes anemic, the swelling is reduced, and a mass of secretions comes away from the nose. Since the effect of this swabbing only lasts from three to four hours, it is necessary to repeat it three or four times daily, or even before every feeding, and to continue as long as needed. In cases of weak infants, with an exceedingly stubborn, bloody, purulent secretion as the result of a marked rhinitis, he uses a .5 to 1 per cent. silver nitrate solution in addition to the adrenalin. A

drop of this should be applied once a day after the application of the adrenalin until the secretion stops permanently. Of 75 children affected with coryza, 48 were treated with adrenalin and the others were not. Only 12.5 per cent. of those so treated had bronchitis, while 44.4 per cent. of those not so treated were affected with it. In syphilitic coryza it is not only locally beneficial, but prevents a large number of deaths which would otherwise occur from aspiration pneumonia.

Virchow's Archiv, Berlin.

Last indexed page 143.

49 (CLXXIX, No. 3.) Proportion of Ash, Total and Residual Nitrogen i. Blood, Exudates and Transudates in Various Diseases.—Gehalt des Blutes, etc., an Trockensubstanz, Gesamt- und Reststickstoff, etc. K. v. Rzentkowski.
50 Zum Studium der Mast-Cellen. Fahr.
51 Negative Judgment on Cell Inclusions Described as Protozoa in Variola.—Ueber die als Protozoen beschriebenen Zell-Einschlüsse bei Variola. P. Schrumpf.
52 Vorkommen parasitärer Organismen in Geschwülsten (in tumors). L. Blum.
53 Die Protozoen des Scharlachfiebers (of scarlet fever).C. W. Duval.
54 Origin of "Implantation" Tuberculosis of Peritoneum and Its Relation to the Doctrine of Inflammation.—Implantations-Tuberkulose des Bauchfells, ihre Entstehung, etc. G. Guyot.
55 Zur Lehre vom Aneurysma spurium. W. Kallenberger.
56 Cutaneous Tumor with Gaseous Hypertrophy of Protoplasm.—Schaumzellentumor der Haut. K. Sick (Berne).
57 Islands of Gastric Mucosa in Upper Esophagus.—Zur Histologie der Magenschleimhautinseln im obersten Oesophagusabschnitte. H. Schridde.

Wiener klinische Wochenschrift, Vienna.

Last indexed XLIV, page 1971.

58 (XVII, No. 14, April 6.) *Funktionsstörungen der Nebenniere bei Allgemeinerkrankungen, Intoxikationen und Infektionen (functional disturbances of adrenals). F. Luksch.
59 Ueber die aggressive Wirkung von Diplokokken-exsudaten. E. Hoke.
60 *To Outline the Heart by Indirect Palpation.—Die Grenzbestimmung des Herzens und seiner Abschnitte mittels indirekter Palpation des Impulses. L. Kurt.
61 *Ueber Augenmuskel-Rheumatismus (of ocular muscles). K. Pichler.
62 (No. 15.) Toxin and Antitoxin. R. Grasberger and A. Schattenfroh.
63 *Hüftgelenks-Resektion mit totaler Kapsel-Exstirpation, nebst Bemerkungen über die Total-Exstirpation des tuberkulösen Huftgelenkes (hip joint). A. Lorenz and M. Reiner.
64 Ueber Autolyse in Punktions-Flüssigkeiten (puncture fluids). E. Zak.
65 Modification of Mosetig Bone Filling.—Zwei etwas modifizierte Anwendungsweisen der v. Mosetigschen Knochenplombe. B. Mayrhofer.
66 (No. 16.) Experiences with Anesthetics in 700 Cases.—Ueber neuere Narkosen-Mittel und -Methoden, insbesondere Morphin-Skopolamin. R. Puschnig.
67 Immunization Against Chicken Cholera.—Die passive Aggressin-Immunität bei Huhnercholera. E. Weil.
68 Die diätetische Behandlung des Diabetes mellitus. M. Mann.
69 Obstruction of Murphy Button by Olive Stone or Scybala.—Zur Kasuistik der Gefahren bei Anwendung des Murphy-Knopfes. Phillipp.

58. **Study of Suprarenal Functioning in Disease.**—Luksch estimates the functional disturbance in the suprarenals by the lesser pressure-raising power of the extract. His research on various animals showed that the suprarenals are not materially affected by various pathologic conditions, starvation, fever, etc., but that others, such as uremia, phosphorus poisoning, diphtheria and various infectious processes, apparently arrested the suprarenal functioning. The extract of the organs under these conditions failed to display the normal pressure-raising property. This functional disturbance in the suprarenals is probably one of the injurious factors that co-operate in serious infectious processes.

60. **Indirect Palpation to Outline the Heart: the Ictometer.**—Kurt uses a wooden rod, about 20 cm. long, with a small plate at each end, to estimate the movements of the thorax wall over the heart. He calls it the ictometer, as the heart beat is sometimes called the ictus. It is possible with this little instrument to note delicate variations in the heart action, over different segments of the heart, as he describes in detail.

61. **Rheumatism of Ocular Muscles.**—Pichler has observed 4 cases of involvement of the tendons of the muscles of the eye in 160 cases of acute articular rheumatism. He believes that this rheumatic eye affection is liable to be diagnosed as episcleritis, and treated on a mistaken basis, when antirheumatic remedies would soon cure it.

63. **Extirpation of Tuberculous Hip Joint.**—Lorenz and Reiner advocate operating far into sound tissue, removing the capsule entirely, and not opening into the joint until the capsule has been completely detached from all the soft parts. To do this it is necessary to make an incision both in front and at the back of the joint. The connection between the trochanter major and the femur is left undisturbed. By this technic the unopened joint with the intact sac of the capsule is extirpated *in toto*. The leg is not much shortened, as the entire length of the femur from the tip of the trochanter is retained. They assume that the period of greatest painfulness coincides with an intra-articular abscess, and that this is the best time for the operation. Their experience with this technic has been very favorable.

Gazzetta degli Ospedali, Milan.

Last indexed page 227.

70 (XXVI, No. 28.) *Contributo clinico alla patogenesi vasomotoria dell' asma bronchiale. F. Galdi.
71 Iodo-Iodid Injections in Malarial Spleen.—Metodo Parona nei tumori cronici di milza da malaria. E. Grande.
72 High Frequency Currents in Ozena.—Intorno alle applicazioni delle correnti ad alta frequenza nell'ozena. Hahn.
73 (No. 31.) Diminished Resist[illegible] Infections as Cause of Death After Removal of [illegible] in Frogs.—Morte delle rane dopo l'estirpazione dei [illegible]. G. A. Pari.
74 Sul valore terapeutico del si[illegible]antibacillare. G. Ricci.
75 *La terapia delle appendiciti. E. Maragliano.
76 (No. 34.) N-Rays.—Sui cosi-detti raggi N. V. Maragliano.
77 *Arterial Pressure in Disease.—Tensione arteriosa nell'uomo allo stato patologico. A. Torchio.
78 *Infectious Icterus, etc.—Ittero infettivo, atrofia giallo acuta del fegato e cirrosi biliare ipertrofica. G. Zanardini.
79 *Il trattamento dell'eclampsia gravidica con la paratiroidina. G. Vassale.
80 (No. 37.) Interpretazione di alcuni rumori sistolici dell'aorta (systolic aortic sounds). [illegible]. Curlo.
81 Present Status of Edebohl [illegible]ecapsulation.—La cura chirurgica nelle nefriti medic[illegible]. L. Cesari.
82 (No. 40) Right pleural [illegible]ffusion in Heart and Liver Affections.—Versamento pleurico a destra nelle cardiopatie e nella cirrosi epatica. V. Giauni.
83 *Inconstancy of Salicylates.—Sull'azione incostante dei salicilici nel reumatismo poliarticolare. A. Cerioli.
84 (No. 41.) *X-Rays in Recurring Leukemia and Banti's Disease.—I raggi X nella malattia di Banti, etc. C. Bozzolo.
85 (No. 43.) *Prognostic Importance of Alkaline Phosphates in Urine in Pneumonia.—Sul valore pronostico dei fosfati alcalini nelle orine dei polmonitici. F. Sicuriani.
86 *Operation for Umbilical Hernia.—Cura delle ernie del cordone ombelicale. A. Dal Vesco.
87 In Defence of General Anesthesia.—In difesa dell'anestesia generale. G. Stella.
88 Cure of Tuberculous Peritonitis with Local Injections of Iodo-iodid Solution.—La guarigione della peritonite tubercolare colle iniezioni iodo-iodurate alla Durante. G. Reale.

70. **Vasomotor Pathogenesis of Bronchial Asthma.**—Galdi's patient exhibited typical bronchial asthma in childhood, but it vanished at puberty and did not reappear for ten years. It then returned, accompanied by symptoms indicating pronounced vasomotor disturbances, these symptoms sometimes appearing as an equivalent for the attack of asthma and subsiding as the latter became established. They included hyperidrosis, urticaria, formication and edema or sialorrhea, swelling of part of the tongue, diarrhea and intestinal disturbances. There was also copious secretion from the eyes, nose and ears. The attacks recurred at any season of the year, but they were almost entirely banished by general tonic measures, tepid sulphur baths and revulsion to the spine. The patient left before the treatment outlined had been entirely completed, regarding himself as cured.

75. **Maragliano on Appendicitis.**—This Italian clinician is an advocate of prompt intervention, urging that the simple operation harms no one, even if the person might have recovered without it, while it saves many who would have been lost without it. He quotes a writer who asks: "Which is better, to save a few appendices or the lives of your patients?"

77. **Arterial Pressure in Disease.**—Torchio has been studying the influence on the arterial pressure of various diseases and also of certain drugs. He examined 528 patients, besides a number of healthy persons, and tabulates the results. The first impression derived from study of the tables is that the arterial tension is lower in children, in both health and disease, than in adults, the proportion of cases of hypertension increasing from 7 per cent. under the age of 13 to 19 per cent. from 13 to 25, and 36 per cent. from 25 to 50, while after this age it is 61 per cent. A pressure of 115 mm. may represent medium pressure in a lad of 15, while it would be hypertension for a child and hypotension in an adult. Hypotension is the rule in typhoid fever and in pneumonia, also in tuberculosis unless complicated by lead poisoning, arteriosclerosis or alcoholism. In tuberculosis he found the arterial tension lower

the more rapid the course of the disease. The tension was higher in the cases with hemoptysis. In pneumonia the cases with very low tension and rapid pulse terminated fatally, while the patients all recovered when the pulse was more nearly normal. The tension findings in twenty-five different diseases and a miscellaneous group show that hypertension is the rule in heart and kidney affections and chronic bronchitis, less marked in neuralgia and neuroses, and medium in malaria. Rest in bed seems to reduce the tension, as also a milk diet; steam baths in nephritis and venesection also have a transient action. Adrenalin and saline infusion raise the tension. Further research on 28 persons demonstrated that injection of tuberculosis toxin materially reduces the tension.

78. **Liver Affections.**—Zanardini classifies liver affections as belonging all to a single group, with gradations of intensity. Simple catarrhal icterus leads, followed by mild but protracted icterus, and this, in turn, by cirrhosis of the liver with hypertrophy. This is favor[illegible] advanced age, by the menopause and by the liquor habit. The last member of the group is acute yellow atrophy of the liver. In this the state of the nerves and the morphologic conditions in the abdomen have a predisposing action, as also syphilis, pellagra, influenza, pregnancy and worry or a fright.

79. **Parathyroid Treatment of Puerperal Eclampsia.**—Vassale reports that the effect of an extract of the parathyroid glands in cases of puerperal eclampsia has been surprising. The convulsions were arrested so promptly that the assumption of a specific action seems almost inevitable, as it resembles so much that of the thyroid gland in myxedema. He has found the parathyroid extract useful also in tetany, and expatiates on the way in which the clinical experience harmonizes with this conception of the parathyroid origin of convulsive attacks. He is now trying the parathyroid extract in epilepsy. (See also notice on page 193.)

83. **Inconstancy of Salicylic Medication in Articular Rheumatism.**—Cerioli remarks that the curative action of the salicylates is in direct proportion to the spontaneous defense of the organism, reinforcing it but not able to cure without the co-operation of the organism. He quotes Maragliano to the effect that statistics show that the course of articular rheumatism has not been shortened since the advent of salicylic medication, to which he does not ascribe much therapeutic importance. Cerioli urges that the phases of the disease should be watched and the salicylates be given with discretion to aid Nature, not blindly and insistently, in which case they do more harm than good.

84. **Roentgen Treatment of Leukemia and Banti's Disease.**—In this communication, Bozzolo describes the subsequent history of the cases reported last July as improved under Roentgen treatment, mentioned in The Journal on page 1670 of vol. xliii. The young woman with leukemia has remained in apparent health, feeling constantly well. On one occasion the blood findings showed again a marked leukemic tendency, and Roentgen treatment was again instituted, with the same favorable effect as before. His experience with three cases of Banti's disease shows that Roentgen treatment has a beneficial action, but that it is much slower and more gradual than in leukemia. In this affection the fibrous part of the spleen is hypertrophied, and this tissue yields more sluggishly to the action of the rays than the lymphatic follicles which are involved in leukemia. The great advantage of Roentgen treatment is that the general condition improves and the patients feel constantly well, even although the blood findings fluctuate.

85. **Prognostic Importance of Phosphates in Urine in Pneumonia.**—Sicuriani concludes from his research on 25 patients with pneumonia that the alkaline phosphates vanish from the urine during the course of pneumonia. Their reappearance in the urine is the precursor of the crisis and a sign of good omen.

86. **Operation for Umbilical Hernia.**—Dal Vesco makes a short incision below the hernia and works a gauze compress between the viscera and the abdominal wall. He then passes a stout thread through the lips of the incision, over the gauze, fastened on one side by a roll of gauze, and held on the other by hemostatic forceps. He then carries the incision farther up, working the gauze along and introducing another suture, continuing this until he has the hernia well under control, the viscera held in place by the gauze spread out over them, reinforced by the suture threads passed over across it. After taking care of the hernia as usual, he completes the operation by tightening the suture threads, thus drawing the lips of the incision together, and then pulling out the gauze, concluding by fastening the ends of the threads over rolls of gauze and suturing the skin. The recuperating power of the tissues of infants insures rapid repair, while the simplicity and security of this operation commend it for general adoption, he thinks. The entire procedure is complete in less than twenty minutes, even in extensive cases.

Riforma Medica, Palermo and Naples.

Last indexed page 228.

89 (XXI, Nos. 19 and 20.) *Sulla sieroterapia della pneumonite. E. De Renzi.
90 *Methylene Blue Urine Test.—Le bleumetilenereazione, suo valore clinico. M. Russo.
91 Sull'infezione sperimentale del micrococco tetragono settico. E. Claramelli.
92 *2 casi di enditelioma dello stomaco. O. Cignozzi. (Commenced in No. 17.)
93 *Reflexes and Tremor in Neurasthenia.—Riflessi profondi e superficiali ed il tremore vibratorio delle dita delle mani nella neurastenia. G. Severino.
94 (No. 21.) Tubercle Bacillus Absent in Urine in Pulmonary Tuberculosis.—Sul preteso reperto positivo del bacillo di Koch nelle orine di malati di tuberculosi polmonare. R. Supino.
95 *Changes in the Leucocyte Formula After Injections of Iodo-Iodid Solution.—Sulle modificazioni indotte dalle inezioni iodo-iodurate sulla formola emo-leucocitaria dei bambini. A. B. Glanasso.

89. **Serotherapy of Pneumonia.**—The conclusions of De Renzi's experiences with 26 patients treated with Pane's antipneumococcus serum are that the general condition always improved under the serotherapy. The patients say they feel better after the injection of serum, and this is not due to suggestion. The pneumonia had attacked strong men and reduced them to an alarming condition. When they said that they felt much better after the injection of serum, it could not have been the effect of suggestion under these circumstances. The temperature always subsided after the injection. When made in the morning, by evening the temperature was found reduced. As the general condition and the temperature improved, the pulse and respiration became less rapid. He has never seen any evidence that the local manifestations of the pneumonia are improved by the serum, but, as the general condition is so much better, the local phenomena dwindle in importance as we see that the general resisting powers have been so powerfully reinforced. Another fact noted is that resolution does not occur with a crisis, but by lysis. The serotherapy evidently reduces the intensity of the disease, while it improves the general condition. The patient recovers without such loss of strength as is usual in the disease. Further evidence of this is the approximately normal blood pressure instead of the low pressure characteristic of pneumonia. Food can be taken early with a little alcohol.

90. **Methylene Blue Urine Test.**—Russo proposes a methylene blue test which he thinks may advantageously substitute Ehrlich's diazo reaction. It is much simpler, while he has found the results equally reliable. In typhoid it affords more information than the diazo test, as it indicates the exact phase of the disease. The reagent is readily made and keeps perfectly. Methylene blue added to typhoid urine gives a characteristic color reaction, the tint changing to a pronounced emerald green. He uses a 1 per thousand aqueous solution of methylene blue. Four drops are added to a test tube containing from 4 to 5 c.c. of urine, and if the reaction is positive the fluid turns an emerald or mint green. A light green or bluish green represents a negative reaction. Boiling the urine or previous ingestion of quinin, salol, calomel, euchinin, caffein or digitalis does not affect the reaction. It was encountered as early as the second or third day of typhoid in many instances, and was invariably positive in the 41 cases of typhoid and in the 32 of measles examined, paralleling the diazo reaction. In 10 cases of smallpox it was always positive, while the diazo reaction was negative in 2 of these cases. It was always negative in 10 cases of pulmonary tuberculosis in the first stage, while it was positive in 10 and negative in 20

out of 30 cases in the second stage. It was invariably positive in 25 cases in the third stage, also in 6 of tuberculous pleurisy, in 5 of tuberculous empyema and in 4 of tuberculous peritonitis, and was positive in 3 out of 5 cases of glandular tuberculosis, while the diazo reaction was positive in 4 of this latter group. Otherwise the diazo reaction nearly paralleled it. The methylene blue reaction was invariably negative in cases of scarlet fever, varicella, varioloid, influenza, bronchitis, pneumonia, and in gastric catarrh, in febrile gastroenteritis, in appendicitis, in renal lithiasis, in nephritis, in articular rheumatism, in cases of abscess in the liver, in mitral insufficiency, epilepsy, neurasthenia and malarial fever. The "mint" green tint is observed first, the emerald tone appearing as the disease reaches its height, while the tint grows more and more bluish as the patient progresses toward recovery, or the emerald tint persists till death. The constant presence of the reaction in smallpox and its absence in varicella and varioloid is an important differentiating sign.

92. **Endothelioma of the Stomach.**—Cignozzi's article is a comprehensive illustrated monograph and historical sketch on the subject of gastric endothelioma and plastic linitis. He thinks that the latter is much rarer than generally assumed.

93. **Reflexes and Tremor in Neurasthenia.**—Severino found tremor of the fingers in 88 per cent. of 75 neurasthenics examined. The tendon reflexes were increased or exaggerated in 92 per cent., while one or more of the superficial reflexes were abolished in from 70 to 85 per cent.

Revista de Medicina y Cirugia, Havana.

Last indexed XLIV, page 1892.

96 (IX, Nos. 16-17.) *Sobre infecciones piohemicas. M. G. Lebredo.
97 Lecciones de anatomia topografica (stomach). G. Pedroso.
98 (No. 18) La hemorragia post-partum. G. L. Brodhead (New York).
99 *Three Mistaken Diagnoses of Extrauterine Pregnancy.—Tres diagnosticos erroneous de embarazo extrauterino. E. Fortun.
100 (No. 21.) *Third Anniversary of Eradication of Yellow Fever.—Tercer aniversario de la eradication de la fiebre amarilla de la Habana. J. Le-Roy y Cassa.
101 (No. 22.) *Anakhre, Goundou? A. Ayala.
102 (No. 23.) Cuerpos extranos multiples de la cornea (foreign bodies). J. L. Dehogues.
103 *Caso de hemoptisis filarica. R. G. Mon and N. Carballo.
104 (No. 24) Contribucion al estudio del parasitismo humano y animal. E. Cuervo.
105 (X, No. 1.) Cistitis colli proliferans edematosa. J. Diago.
106 Regulations in regard to Milk in Cuba. G. Arostegui.

96. **Pyemic Infections.**—Lebredo draws the parallel clinical picture of three pyemic infections—glanders, general streptococcus and general staphylococcus infection. Differentiation is difficult in the clinic, and he urges physicians to apply to the Board of Health or elsewhere for bacteriologic examination of the pus without delay, if unable personally to attend to such tests. By this means, it will be possible in time to stamp out the almost invariably fatal glanders. He mentions a case of glanders personally observed, terminating in recovery. The patient was in the hospital a year and a half. The multiple abscesses were opened, in turn, and disinfected. When all had healed, except a single old one, an actual intermittent fistula, as he calls it, in the left inguinal glands, this was treated by radical extirpation. The cultures from the pus of this final lesion were negative toward the last.

99. **Mistaken Diagnoses of Extrauterine Pregnancy.**—In 2 of the cases described, there had been abortion after a few weeks of uterine pregnancy. The signs of the pregnancy were accompanied by an abdominal tumor, a sarcoma of the broad ligament in one, and an ovarian cyst in the other. In the third case, a dermoid cyst of the right ovary, with a long pedicle, induced symptoms suggesting pregnancy. As the uterus showed no signs of such a condition, an ectopic pregnancy was assumed.

100. **History of Yellow Fever in Cuba.**—In this sketch Le-Roy traces the history of yellow fever in the island and its extirpation a few years ago. The three years of exemption are the most eloquent proof, he remarks, of the truth of the doctrine which Finlay proclaimed in the Havana Medical Society as long ago as 1881.

101. **Anakhre, Goundou.**—Ayala writes from Venezuela to describe a case of this affection in a white merchant, 39 years old, a resident of Caracas, previously healthy. A large lump has developed on each side of his nose. The lumps are never painful and cause no disturbances except the mechanical ones.

103. **Filarian Hemoptysis.**—Mon and Carballo describe the case of a man of 33 who presented nocturnal hemoptysis on twelve occasions, and a single embryo of the *Filaria Bancrofti* was discovered in the specimen of his blood. Under treatment with tincture of iodin, the hemorrhages promptly ceased, and after slight fever for two days he rapidly recovered and has been in perfect health since, with no signs of cough, fever or hemoptysis.

Siglo Medico, Madrid.

Last indexed XLIV, page 1892.

107 (LII, No. 2,674-6.) La pustula maligna. Su tratamiento por el acido fenico. C. Clemente.
108 *Auditory Affections in Schoolchildren.—Las enfermedades del oido, etc. C. Compaired.
109 (No. 2,677.) *Dificultades para el diagnostico del embarazo en las solteras (of pregnancy in the unmarried). M. Sanchez.
110 (No. 2,679.) La tuberculosis en los pueblos (in villages). J. G. Castro.

108. **Defective Hearing in School Children.**—Compaired urges that the hearing capacity of every child should be examined when it enters school and again at stated periods. Teachers should be informed when a child is defective in this respect, and should be instructed to favor it as far as possible. Parents should be educated to detect the early symptoms, and the children should be treated in special otologic clinics, separate from the ordinary hospital or other ear clinics. The teachers might test the hearing of the children if a simple card of instructions were given them, and by this means incipient disturbances might be detected in time for treatment to be effectual. In his own experience, out of 1,366 cases of deafness between the ages of 10 and 16, 16.55 per cent. were due to affections of the outer ear which could easily have been cured by simple measures, and thus have saved the child's hearing. In 18.89 per cent. the deafness was due to obstructions which might readily have been removed. In 33.79 per cent. it was the result of some infectious disease, and this proportion would certainly have been less if the ear complications had received prompt treatment. He regards adenoid vegetations as one of the most frequent causes of deafness. In 320 recent cases in which adenoid vegetations were removed he found bilateral purulent otitis media in 37 and unilateral in 41, catarrh of the tube in 68, hypertrophy of the turbinates in 79, enlarged tonsils in 59, enlarged glands in the neck in 14, and nasal catarrh in 17. In his general examinations of school children he has become convinced that fully 20 per cent. suffer from some ear affection. Districts with a moist, hot climate show much the larger percentage of purulent and catarrhal affections of the nose, throat and ears.

109. **Diagnosis of Pregnancy in the Unmarried.**—Among the practical points mentioned by Sanchez is the necessity for rectal palpation in dubious cases, as vaginal is out of the question in the supposed virgin. On the pretext of a tumor, rectal palpation will usually be permitted. When not certain of the findings, the physician can postpone the examination to a later date, "as the tumor shows no signs of malignancy." He adds that when the physician is convinced in regard to the pregnancy, he should inform the mother alone, ignoring the young woman herself and the other members of the family.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

The Pharmacopeia of the United States of America. By Authority of the United States Pharmacopeial Convention held at Washington, 1900. Eighth Decennial Revision. Revised by the Committee of Revision and published by the Board of Trustees. Official from Sept. 1, 1905. Cloth. Pp. 692. Price, $2.50. Philadelphia: P. Blakiston's Son & Co.

Hand Book of Anatomy, Complete Compend of Anatomy, including the Anatomy of the Viscera and Numerous Tables. By J. K. Young, M.D., Second Edition, revised and enlarged: 171 Engravings, with some in colors. Flexible cloth. Pp. 402. Price $1.50 net. Philadelphia: F. A. Davis & Co., 1905.

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Addresses

UNITY, PEACE AND CONCORD.

A FAREWELL ADDRESS TO THE MEDICAL PROFESSION OF THE UNITED STATES.*

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OXFORD, ENGLAND.

On this occasion I have had no difficulty in selecting a subject on which to address you. Surely the hour is not for the head but for the heart, out of the abundance of which I may be able to express, however feebly, my gratitude for the many kindnesses I have received from the profession of this country during the past twenty-one years, and from you, my dear colleagues of this state and city, during the sixteen years I have dwelt among you. Truly I can say that I have lived my life in our beloved profession—perhaps too much! but whatever success I have had has come directly through it, and my devotion is only natural. Few men have had more from their colleagues than has fallen to my lot. As an untried young man my appointment at McGill College came directly through friends in the faculty who had confidence in me as a student. In the ten happy years I lived in Montreal I saw few but physicians and students, among whom I was satisfied to work—and to play. In Philadelphia the hospitals and the societies absorbed the greater part of my time, and I lived the peaceful life of a student with students. An ever-widening circle of friends in the profession brought me into closer contact with the public, but I have never departed from my ambition to be first of all a servant of my brethren, willing and anxious to do anything in my power to help them. Of my life here you all know I have studied to be quiet and to do my own business and to walk honestly toward them that are without, and one of my chief pleasures has been to work among you as a friend, sharing actively in your manifold labors. But when to the sessions of sweet, silent thought I summon up the past, not what I have done, but the many things I have left undone, the opportunities I have neglected, the battles I have shirked, the precious hours I have wasted—these rise up in judgment.

A notable period it has been in our history through which we have lived, a period of reconstruction and renovation, a true renaissance, not only an extraordinary revival of learning, but a complete transformation in our educational methods; and I take pride in the thought that, in Philadelphia and in Baltimore, I have had the good fortune to be closely associated with men who have been zealous in the promotion of great reforms, the full value of which we are too close to the events to appreciate. On the far-reaching influence of these changes time will not permit us to dwell. I propose to consider another aspect of our work of equal importance, neither scientific nor educational, but what may be called humanistic, as it deals with our mutual relations and with the public.

Nothing in life is more glaring than the contrast between possibilities and actualities, between the ideal and the real. By the ordinary mortal, idealists are regarded as vague dreamers, striving after the impossible, but in the history of the world how often have they gradually molded to their will conditions the most adverse and hopeless! They alone furnish the *Geist* that finally animates the entire body and makes possible reforms and even resolutions. Imponderable, impalpable, more often part of the moral than of the intellectual equipment, are the subtle qualities so hard to define, yet so potent in every-day life by which these fervent souls keep alive in us the reality of the ideal. Even in a lost cause with aspirations utterly futile, they refuse to acknowledge defeat and, still nursing an unconquerable hope, send up the prayer of faith in face of a scoffing world. Most characteristic of aspirations of this class is the petition of the Litany in which we pray that to the nations may be given "unity, peace, and concord." Century after century from the altars of Christendom this most beautiful of all prayers has risen from lips of men and women, from the loyal souls who have refused to recognize its hopelessness, with the war-drums ever sounding in their ears. The desire for unity, the wish for peace, the longing for concord, deeply implanted in the human heart, have stirred the most powerful emotions of the race, and have been responsible for some of its noblest actions. It is but a sentiment, you may say, but is not the world ruled by feeling and by passion? What but a strong sentiment baptized this nation in blood, and what but sentiment, the deep-rooted affection for country which is so firmly implanted in the hearts of all Americans, gives to these states to-day unity, peace, and concord? As with the nations at large, so with the nation in particular, as with people so with individuals, and as with our profession so with its members, this fine old prayer for unity, peace and concord, if in our hearts as well as on our lips, may help us to realize its aspirations. What some of its lessons may be to us will be the subject of my address.

UNITY.

Medicine is the only world-wide profession, following everywhere the same methods, actuated by the same ambitions and pursuing the same ends. This homogeneity, its most characteristic feature, is not shared by the law,

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[*] Delivered at the annual meeting of the Medical and Chirurgical Faculty of Maryland, Baltimore, April 26, 1905.

and not by the church, certainly not in the same degree. While in antiquity the law rivals medicine, there is not in it that extraordinary solidarity which makes the physician at home in any country, in any place where two or three sons of men are gathered together. Similar in its high aims and in the devotion of its officers, the Christian Church, widespread as it is, and saturated with the humanitarian instincts of its Founder, yet lacks that catholicity—*urbi et orbi*—which enables the physician to practice the same art amid the same surroundings in every country of the earth. There is a unity, too, in its aims—the prevention of diseases by discovering their causes, and the cure and relief of sickness and suffering. In a little more than a century a united profession working in many lands has done more for the race than has ever before been accomplished by any other body of men. So great have been these gifts that we have almost lost our appreciation of them. Vaccination, sanitation, anesthesia, antiseptic surgery, the new science of bacteriology, and the new art in therapeutics have effected a revolution in our civilization to which only can be compared the extraordinary progress in the mechanical arts. Over the latter there is this supreme advantage, it is domestic—a bedroom revolution, which sooner or later touches each one of us, if not in person, in those near and dear—a revolution which for the first time in the history of poor, suffering humanity brings us appreciably closer to that promised day when the former things should pass away, when there should be no more unnecessary death, when sorrow and crying should be no more, and there should not be any more pain.

One often hears as a reproach that more has been done in the prevention than in the cure of disease. It is true, but this second part of our labors has also made enormous progress. We recognize to-day the limitations of the art, we know better the diseases curable by medicine, and those which yield to exercise and fresh air; we have learned to realize the intricacy of the processes of disease and have refused to deceive ourselves with half knowledge, preferring to wait for the day instead of groping blindly in the dark or losing our way in the twilight. The list of diseases which we can positively cure is an ever-increasing one, the number of diseases the course of which we can modify favorably is a growing one, the number of incurable diseases (which is large and which will probably always be large) is diminishing—so that in this second point we may feel that not only is the work already done of the greatest importance, but that we are on the right path, and year by year as we know disease better we shall be able to treat it more successfully. The united efforts of countless workers in many lands have won these greatest victories of science. Only by ceaseless co-operation and the intelligent appreciation by all of the results obtained in each department has the present remarkable position been reached. Within a week or ten days a great discovery in any part of the world is known everywhere, and, while in a certain sense we speak of German, French, English and American medicine, the differences are trifling in comparison with the general similarity. The special workers know each other and are familiar with each other's studies in a way that is truly remarkable. And the knowledge gained by the one, or the special technic he may devise, or the instrument he may invent is at the immediate disposal of all. A new life-saving operation of the first class devised by a surgeon in Breslau would be performed here the following week. A discovery in practical medicine is common property with the next issue of the weekly journals.

A powerful stimulus in promoting this wide organic unity is our great international gatherings, not so much the International Congress of the profession, which has proved rather an unwieldy body, but of the special societies which are rapidly denationalizing science. In nearly every civilized country medical men have united in great associations which look after their interests and promote scientific work. It should be a source of special pride to American physicians to feel that the national association of this country—the American Medical Association—has become one of the largest and most influential bodies of the kind in the world. We can not be too grateful to men who have controlled its course during the past ten years. The reorganization so efficiently carried out has necessitated a readjustment of the machinery of the state societies, and it is satisfactory to know that this meeting of our state society, the first held under the new conditions, has proved so satisfactory. But in the whole scheme of readjustment nothing commands our sympathy and co-operation more than the making of the country societies, the materials out of which the state and national associations are built. It is not easy at first to work out such a scheme in full detail, and I would ask of the members of this body not only their co-operation, but an expectant consideration, if the plan at first does not work as smoothly as could be desired. On the county members I would urge the support of a plan conceived on broad national lines—on you its success depends, and on you its benefits will chiefly come.

Linked together by the strong bonds of community of interests, the profession of medicine forms a remarkable world-unit, in the progressive evolution of which there is a fuller hope for humanity than in any other direction.

Concentration, fusion and consolidation are welding together various subunits in each nation. Much has been done, much remains to do, and to three desiderata I may refer briefly.

In this country reciprocity between the state licensing boards remains one of the most urgent local needs. Given similar requirements, and examinations practically of the same character, with evidence of good character, the state board should be given power to register a man on payment of the usual fee. It is preposterous to restrict in his own country, as is now done, a physician's liberty. Take a case in point: A few months ago a man who is registered in three states, an able, capable practitioner of twenty years' standing, a hard student in his profession, a physician who has had charge of some of the most important lives of this country, had to undergo another examination for license. What an anomaly! What a reflection on an united profession! I would urge you all most strongly to support the movement now in progress to place reciprocity on a proper basis. International reciprocity is another question of equal importance, but surrounded with greater difficulties and, though a long way off, it will come within this century.

The second urgent need is a consolidation of many of our medical schools. Within the past twenty-five years conditions have so changed that the tax on the men in charge of the unendowed schools has become ever more burdensome. In the old days of a faculty with seven professors, a school with 300 students was a good property, paying large salaries, but the introduction of laboratory and practical teaching has so increased the expenses that very little is now left for distribution at the end of the year. The students' fees have not increased proportionately, and only the self-sacrifice and devotion of men who ungrudgingly give their time, and often their means, save a hopeless situation. A fusion of the schools is the natural solution of the problem. Take a concrete example: A union of three of the medical schools of this city would enable the scientific departments to be consolidated at an enormous saving of expense and with a corresponding increase in efficiency. Anatomy, physiology, pathology, physiologic chemistry, bacteriology and pharmacology could be taught in separately organized departments which the funds of the united school could support liberally. Such a school could appeal to the public for aid to build and endow suitable laboratories. The clinical work could be carried on at the separate hospitals, which would afford unequaled facilities for the scientific study of disease. Not only in this city, but in Richmond, in Nashville, in Columbus, in Indianapolis and in many cities a "merger" is needed. Even the larger schools of the larger cities could "pool" their scientific interests to the great advantage of the profession.

And the third desideratum is the recognition of our homeopathic brethren that the door is open. It is too late in this day of scientific medicine to prattle of such antique nonsense as is indicated in the "pathies." We have long got past the stage when any "system" can satisfy a rational practitioner, long past the time when a difference of belief in the action of drugs—the most uncertain element in our art!—should be allowed to separate men with the same noble traditions, the same hopes, the same aims and ambitions. It is not as if our homeopathic brothers are asleep—far from it—they are awake—many of them at any rate—to the importance of the scientific study of disease, and all of them must realize the anomaly of their position. It is distressing to think that so many good men live isolated, in a measure, from the great body of the profession. The original grevious mistake was ours—to quarrel with our brothers over infinitesimals was a most unwise and stupid thing to do. That we quarrel with them now is solely on account of the old Shibboleth under which they practice. Homeopathy is as inconsistent with the new medicine as is the old-fashioned polypharmacy, to the death destruction of which it contributed so much. The rent in the robe of Æsculapius, wider in this country than elsewhere, could be repaired by mutual concessions—on the one hand by the abandonment of special designations, and, on the other, by an intelligent toleration of therapeutic vagaries which in all ages have beset the profession, but which have been mere flies on the wheels of progress.

PEACE.

Many seek peace, few pursue it actively, and among these few we, alas! are not often to be found. In one sense every one of us may be asked the question which Jehu returned to Joram: "What hast thou to do with peace?" since our life must be a perpetual warfare, dominated by the fighting spirit. The physician, like the Christian, has three great foes—ignorance, which is sin; apathy, which is the world, and vice, which is the devil. There is a delightful Arabian proverb, two lines of which run: "He that knows not and knows not that he knows not is a fool—shun him. He that knows not and knows that he knows not is a simple—teach him." To a large extent these two classes represent the people with whom we have to deal. Teaching the simple and suffering the fools gladly, we must fight the wilful ignorance of the one and the helpless ignorance of the other, not with the sword of righteous indignation, but with the skillful weapon of the tongue. On this ignorance the charlatan and the quack live, and it is by no means an easy matter to decide how best to conduct a warfare against these wily foes, the oldest and most formidable with whom we have to deal. As the incomparable Fuller remarks: "Well did the poets feign Æsculapius and Circe, brother and sister, . . . for in all times (in the opinion of the multitude) witches, old women and imposters have had a competition with doctors." Education of the public of a much more systematic and active kind is needed. The congress on quackery, which is announced to take place in Paris, with some twenty-five subjects for discussion, indicates one important method of dealing with the problem. The remarkable exhibit held last year in Germany of everything relating to quacks and charlatans did an immense good in calling attention to the colossal nature of the evil. A permanent museum of this sort might well be organized in Washington in connection with the Department of Hygiene. It might be worth while to imitate our German brethren in a special national exhibit, though I daresay many of the most notorious sinners would apply for large space, not willing to miss the opportunity for a free advertisement! One effective measure is enforced in Germany. Any proprietary medicine sold to the public must be submitted to a government analyst, who prepares a statement (as to its composition, the price of its ingredients, etc.), which is published at the cost of the owner of the supposed remedy in a certain number of the daily and weekly papers.

By far the most dangerous foe we have to fight is apathy—indifference from whatever cause, not from a lack of knowledge, but from carelessness, from absorption in other pursuits, from a contempt bred of self-satisfaction. Fully 25 per cent. of the deaths in the community are due to this accursed apathy, fostering a human inefficiency, and which goes far to counterbalance the extraordinary achievements of the past century. Why should we take pride in the wonderful railway system with which enterprise and energy have traversed the land when the supreme law, the public health, is neglected? What comfort in the thought of a people enjoying great material prosperity when we know that the primary elements of life (on which even the old Romans were our masters) are denied to them. What consolation does the "little red school house" afford when we know that a Lethean apathy allows toll to be taken of every class from the little tots to the youths and maidens? Western civilization has been born of knowledge, of knowledge won by hard, honest sweat of body and brain, but in many of the most important relations of life we have failed to make that knowledge effective. And strange irony of life, the lesson of human efficiency is being taught us by one of the little nations of the earth, which has so far bettered our instruction that we must again turn eastward for wisdom. Perhaps in a few years our civilization may be put on trial, and it will not be without benefit if it arouses the individual from apathy and makes him conscious of the great truth that only by earnest individual human effort can knowledge be made effective, if it arouses communities from an apathy which permits medieval conditions to prevail without a protest.

Against our third great foe, vice in all its forms, we have to wage an incessant warfare, which is not less vigorous because of the quiet, silent kind. Better than any one else the physician can say the word in season to the immoral, to the intemperate, to the uncharitable in word and deed. Personal impurity is the evil against which we can do most good, particularly to the young, by showing the possibility of the pure life and the dangers of immorality. Had I time, and were this the proper occasion, I would like to rouse the profession to a sense of its responsibility toward the social evil—the black plague which devastates the land. I can but call your attention to an important society, of which Dr. Prince Morrow of New York is the organizer, which has for one of its objects the education of the public on this important question. I would urge you to join in a crusade quite as important as that in which we are engaged against tuberculosis.

CONCORD.

Unity promotes concord—community of interests, the same aims, the same objects give, if anything can, a feeling of comradeship, and the active co-operation of many men, while it favors friction, lessens the chances of misunderstanding and ill-will. One of the most gratifying features of our professional life is the good feeling which prevails between the various sections of the country. I do not see how it could be otherwise. One has only to visit different parts and mingle with the men to appreciate that everywhere good work is being done, everywhere an earnest desire to elevate the standard of education, and everywhere the same self-sacrificing devotion on the part of the general practitioner. Man will tell you that commercialism is rife, that the charlatan and the humbug were never so much in evidence, and that in our ethical standards there has been a steady declension. These are the Elijahs who are always ready to pour out their complaints, mourning that they are not better than their fathers. Few men have had more favorable opportunities than I have had to gauge the actual conditions in professional private life, in the schools, and in the medical societies, and as I have seen them in the past twenty years I am filled with thankfulness for the present and with hope for the future. The little rift within the lute is the absence in many places of that cordial professional harmony which should exist among us. In the larger cities professional jealousies are dying out. Read Charles Caldwell's "Autobiography" if you wish for spicy details of the quarrels of the doctors in the first half of the last century in this country. I am sorry to say the professors have often been the worst offenders, and the rivalry between medical schools has not always been friendly and courteous. That it still prevails to some extent must be acknowledged, but it is dying out, but not so rapidly as we could wish. It makes a very bad impression on the public, and is often a serious stumbling block in the way of progress. Only the other day I had a letter from a most intelligent and appreciative layman who was interested in a large hospital scheme about which I had been consulted. I quote this sentence from it in sorrow, and I do so because it is written by a strong personal friend of the profession, a man who has had long and varied experience with us: "I may say to you that one of the distressing bewilderments of the layman who only desires the working out of a broad plan is the extraordinary bitterness of professional jealousy between not only school men and non-school men, but between school men themselves, and the reflections which are cast on one another as belonging to that clique, which makes it exceedingly difficult for the layman to understand what way there is out of these squabbles."

The national and special societies, and particularly the American Medical Association, have brought men together and have taught them to know each other and to appreciate the good points which at home may have been overlooked. As Dr. Brush said yesterday in his address, it is in the smaller towns and country districts that the conditions are most favorable for mutual misunderstandings. Only those of us who have been brought up in such surroundings can appreciate how hard it is for physicians to keep on good terms with each other. The practice of medicine calls equally for the exercise of the heart and the head, and when a man has done his best, to have his motives misunderstood and his conduct of a case harshly criticised, not only by the family, but by a colleague who has been called in, small wonder, when the opportunity arises, if the old Adam prevails and he pays in kind. So far as my observation goes there are three chief causes for the quarrels of doctors. The first is lack of proper friendly intercourse by which alone we can know each other. It is the duty of the older man to look on the younger one who settles near him not as a rival, but as a son. He will do to you just what you did to the old practitioner, when, as a young man, you started—get a good many of your cases; but if you have the sense to realize that this is inevitable, unavoidable, and the way of the world, and if you have the sense to talk over, in a friendly way, the first delicate situation that arises, the difficulties will disappear and recurrences may be made impossible. The young men should be tender with the sensibilities of their seniors, deferring to their judgment and taking counsel with them. If young graduates could be taken more frequently as assistants or partners, the work of the profession would be much lightened and it would promote amity and good fellowship. A man of whom you may have heard as the incarnation of unprofessional conduct, and who has been held up as an example of all that is pernicious, may be, in reality, a very good fellow, the victim of petty jealousies, the mark of the arrows of a rival faction, and you may, on acquaintance, find that he loves his wife and is devoted to his children, and that there are people who respect and esteem him. After all, the attitude of mind is the all-important factor in the promotion of concord. When a man is praised, or when a young man has done a good bit of work in your special branch, be thankful—it is for the common good. Envy, that pain of the soul, as Plato calls it, should never for a moment afflict a man of generous instincts and who has a sane outlook in life. The men of rival schools should deliberately cultivate the acquaintance of each other and encourage their students and the junior teachers to fraternize. If you hear that a young fellow just starting has made mistakes or is a little "off color," go out of your way to say a good word to him, or for him. It is the only cure; any other treatment only aggravates the malady.

The second great cause is one over which we have direct control. The most widespread, the most pernicious of all vices, equal in its disastrous effects to impurity, much more disastrous often than intemperance, because destructive of all mental and moral nobility, as are the others of bodily health, is uncharitableness—the most prevalent of modern sins, peculiarly apt to beset all of us, and the chief enemy to concord in our ranks. Oftentimes it is a thoughtless evil, a sort of tic or trick, an unconscious habit of mind and tongue which gradually takes possession of us. No sooner is a man's name mentioned than something slighting is said of him, or a story is repeated which is to his disadvantage, or the involuntary plight of a brother is ridiculed, or even his character is traduced. In chronic and malign offenders literally "with every word a reputation dies." The work of a school is disparaged, or the character of the work in a laboratory is belittled; or it may be only the faint praise that damns, not the generous meed from a full and thankful heart. We have lost our fine sense of the tragic element in this vice, and of its debasing influence on the character. It is interesting that Christ and the apostles lashed it more unsparingly than any other. Who is there among us who does not require every day to lay to heart that counsel of perfection: "Judge not according to the appearance, but judge righteous judgment." One of the apostles of our profession, Sir Thomas Browne, has a great thought on the question:

> While thou so hotly disclaimest the devil, be not guilty of diabolism. Fall not into one name with that unclean spirit, nor act his nature who thou so much abhorest; that is, to accuse, calumniate, backbite, whisper, detract, or sinistrously interpret others. Degenerous depravities, and narrow-minded vices!, not only below St. Paul's noble Christian, but Aristotle's gentleman. Trust not with some that the Epistle of St. James is apocryphal, and so read with less fear that stabbing truth, that in company with this vice thy religion is in vain. Moses broke the tables without breaking of the law; but where charity is broke the law itself is shattered, which cannot be whole without love, which is the fulfilling of it. Look humbly upon thy virtues; and though thou are rich in some, yet think thyself poor and naked without that crowning grace, which thinketh no evil, which envieth not, which beareth, hopeth, believeth, endureth all things. With these sure graces, while busy tongues are crying out for a drop of cold water, mutes may be in happiness, and sing the Trisagion in heaven.

And the third cause is the wagging tongue of others who are too often ready to tell tales and make trouble between physicians. There is only one safe rule—never listen to a patient who begins with a story about the carelessness and inefficiency of Dr. Blank. Shut him or her up with a snap, knowing full well that the same tale may be told of you a few months later. Fully half of the quarrels of physicians are fomented by the tittle tattle of patients, and the only safeguard is not to listen. Sometimes it is impossible to check the flow of imprecation and slander, and then apply the other rule—perfectly safe, and which may be commended as a good practice—never believe what a patient tells you to the detriment of a brother physician, even though you may think it to be true.

To part from the profession of this country and from this old faculty, which I have learned to love so dearly, is a great wrench, one which I would feel more deeply were it not for the nearness of England, and for the confidence I feel that I am but going to work in another part of the same vineyard, and were it not for the hope that I shall continue to take interest in your affairs and in the welfare of the medical school to which I owe so much. It may be that in the hurry and bustle of a busy life I have given offense to some—who can avoid it? Unwittingly I may have shot an arrow o'er the house and hurt a brother—if so, I am sorry and I ask his pardon. So far as I can read my heart I leave you in charity, with all. I have striven with none, not, as Walter Savage Landor says, because none was worth the strife, but because I have had a deep conviction of the hatefulness of strife, of its uselessness, of its disastrous effects, and a still deeper conviction of the blessings that come with unity, peace and concord. And I would give to each of you, my brothers—you who hear me now, and to you who may elsewhere read my words—to you who do our greatest work laboring incessantly for small rewards in towns and country places—to you the more favored ones who have special fields of work—to you teachers and professors and scientific workers—to one and all, throughout the length and breadth of the land—I give a single word as my parting commandant:

> "It is not hidden from thee, neither is it far off. It is not in heaven that thou shouldst say, 'Who shall go up for us to heaven, and bring it unto us that we may hear it and do it?' Neither is it beyond the sea that thou shouldst say, 'Who shall go over the sea for us and bring it unto us that we may hear it and do it?' But the word is very nigh unto thee, in the mouth and in thy heart, that thou mayest do it—Charity."

INDICATIONS FOR SCIENTIFIC PROGRESS IN STOMATOLOGY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON STOMATOLOGY, AT THE FIFTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, PORTLAND, ORE., JULY 11-14, 1905.

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In looking over the long list of papers to which we are to listen we are again struck with the enormous importance of the modern principles of dental surgery. You will pardon me when I emphasize the importance of the special study of diseases of the oral cavity and its surroundings, for I am jealous of the reputation of this Section. It is a matter of pride to show that we have not only held our work in respect but have been followed by a conservative country, i. e., England, which at the last meeting of the British Medical Association (1904) founded the Section on Dental Surgery, putting it in its right place in relation to the sciences of medicine and surgery. As a step forward this should do much to raise the standing of the dental profession and, more important still, to impress the general public. Dental surgeons now will, it is hoped, take a larger interest in general medicine, pathology and surgery, both in their practical and in their scientific requirements; and the medical men themselves will be found to take more interest in some of the special points relating to our science and its pathology.

Oral pathology, indeed, bears a startling and unexpectedly close relationship to general medicine and surgery and may elucidate many obscure cases. I refer to the work of oral sepsis as first studied by Dr. William Hunter[1] of London in 1900 and his special division into *oral sepsis,* i. e., the various effects of streptococcal and staphylococcal infection found in the mouth and oral infection or infection through the mouth in diphtheria, tuberculosis, influenza and pneumonia.[2] To the valuable work of this author, we can add the results of Mr. Goodlee, Mr. Owen, Dr. Sidney Martin, Professor Grawitz and Sir Thomas Barlow, men whose observations are entitled to the highest appreciation and from whose papers valuable data can be secured. How much does the improvement in surgery owe to the dental surgeon? Certainly in the results of excision of the tongue, removal of the maxillæ, operations on the nasopharynx, cleft palate and cosmetic operations, more radical cures have been done, not only because ordinary hemorrhage and septicemia are far less common, but the danger of septic pneumonia, parotitis and erysipelas is much diminished.

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[1] Hunter, William: British Medical Journal, July, 1900. Monograph on "Oral Sepsis."

[2] Hunter, William: British Medical Journal, Nov. 19, 1904. Turner, J. G.; "Oral Sepsis," Practitioner, February, 1905.

The first step in advance was Campbell de Morgan's application of zinc chlorid to the raw surface at the end of an operation. Then carbolic acid had its day, followed by iodoform, then Whitehead's varnish and other applications of a similar nature. The greatest advance, however, lies in sending the cases to a dental surgeon, for the important steps needed are: 1. Scaling teeth. 2. Opening and cleansing pyorrheal pockets. 3. Extracting and filling carious teeth. 4. Waiting for the operation till after a thorough cleansing toilet orally and systematically. 5. The insisting on antiseptic mouth washes, which, according to their length of use and ingredients, become deodorants, disinfectants, detergents, antiseptics and germicides.

It may be asked how this work can be accomplished by one or even by two dental surgeons who are attached to a large hospital, and who unfortunately may forget that holding several such appointments cannot always be conducive to the welfare of the patients. True, many of these appointments carry only the honor, and nothing else, with them and much valuable material is never utilized in any way and I would suggest that the method of handling such hospital work be considered. Is it by increasing the dental staff or in the simpler methods of preventive medicine? In the limited time at my disposal I can only point out the national importance of avoiding septic conditions of the mouth, as they are a frequent cause of cervical tubercular adenitis—a fact seldom considered by either department of the medical or the dental professions. If a child has a tendency to enlarged glands, shall the teeth be extracted, especially when we have gingival abscesses, stomatitis and live teeth present, as is so often the case in primary dentition?

Tuberculosis is another disease which shows the need of careful investigation. Tuberculosis of the tonsil is rarely a primary condition in children, but is considered by Kingsford[3] as a common condition, for, in spite of the opportunities afforded the dentist of noting the oral conditions of children, especially in regard to adenoids and their sequel, mouth breathing, as a common antecedent to phthisis, the connection between these conditions seems to be inadequately recognized, but it is obviously of practical importance, if only as regards prophylaxis. That one-fifth of an unselected series of consumptives are found to be mouth breathers and that such a trifle as projecting teeth may conspire with unfavorable conditions to make a patient phthisical seem facts worthy of our attention.

Another statement we often hear, especially from the older medical men and from the laity in regard to a suppurative tooth is: "Wait till the swelling goes down before you have anything done to it." Are there any grounds for this idea, any danger in opening the abscess or in extracting the tooth if badly diseased, thereby saving the patient pain, danger and delay? We are warned against extraction of the sequestrum in cases of necrosis before complete separation, for violent septicemia and death have been reported in patients with unhealthy mouths. Godlee[4] mentions septic thrombosis of the facial vein which has spread upward and caused fatal thrombosis of the cavernous sinus; and embolic pyemia has been known to occur in the same way.

Necrosis of the mandible and of the maxillæ has been seen in children as a sequence of alveolar abscess and even of infection of the antra and of other air sinuses, especially following attacks of influenza. A question for your consideration is the origin of the parotitis following laparotomies. The theory now advanced seems to depend on the patient's having been starved so long that the functions of the salivary glands are in abeyance, septic organisms follow the largest salivary duct which would not occur if it were acting in a normal physiologic manner. However this theory may be, it seems a welcome explanation of this painful and dangerous sequel, sometimes occuring even when every aseptic precaution was taken. The theory of starvation is not acceptable in all cases, for we know that when wearing artificial dentures, patients may have this condition, even in the submaxillary and sublingual glands, which I suppose is due to pressure on the ducts. Again, conditions in which the saliva is ropy and viscid produce the same state and on dilatation the saliva may be taken out in thick ropy masses, thus relieving the swelling, pain and discomfort.

Another subject for some thought is the question of treating the open wound following extraction of teeth. How many of the operating rooms of the big concerns called "extracting parlors" ever pay much attention to aseptic and antiseptic treatment. Would the wounds benefit by local applications, as recommended by Prof. R. J. Godlee, of zinc chlorid (40 gr. to 1 oz. of water) and iodoform to the raw surfaces?

To Harvey Cushing[5] of Baltimore we are indebted for first showing surgeons the importance in operations on the stomach and intestines of a preliminary sterilizing of the mouth and of all foods administered by the mouth.[6] With the rapid advance of science it is impossible to keep pace with all that is being done, and it requires nearly all one man's attention along one line of research to enable any study to be well done. It must not be exclusive, however, for, as a rule, pure specialism tends to narrowness. "There must," said Dr. Billings "be specialties and specialists, and the results will be good or evil, but the evils fall largely on those specialists who have an insufficent general education, who attempt to construct the pyramid of their knowledge with the small end as a foundation." If the field of any specialty be narrow it can be dug deeply. In science, as in mining "a very narrow shaft, if only it be carried deep enough, may reach the richest stores of wealth and find use for all the appliances of scientific art." So in special branches into which all practitioners of medicine are being divided, it is necessary to recognize the influence and the presence of the general practitioner, whose wide knowledge of his patient's condition must prove of invaluable assistance to any special worker, and nowhere do we need it more than in dental surgery, for even blepharospasm has been known to have a dental etiology. The mechanic can never be the true dentist, without a knowledge of general science and pathology, which gives the etiology of disease and general medicine and surgery; but the true scientific dentist can by experience become more than a mechanic and with far better success, for he knows the pitfalls and the dangers to his foundation from his principles of mechanics.

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[3] Kingsford: Lancet, London, 1904.

[4] Godlee: Brit. Med. Jour., Nov. 19, 1904.

[5] Cushing, Harvey: "Experimental and Surgical Notes on the Bacteriology of the Upper Portion of the Alimentary Canal, with Observations on the Establishment there of an Amicrobic State as a Preliminary to Operative Procedures on the Stomach and Small Intestine." Vol. ix, Johns Hopkins Hospital Reports.

[6] Hewetson, John T.: "Bacteriology of the Human Alimentary Canal and of the Inflammatory Processes Arising Therefrom." British Medical Jour., Nov. 26, 1904.

In diagnosis we need further teaching and study. Take for example the use of transillumination of the antrum of Highmore.[7] Expertness in this method (Druchleutung) was attained by Czermak in 1858 in studying the larynx and by Voltolini in 1888, who first transillumined the antrum while studying the bones of the face, Heryng placing it on a practical base. Vohsen in 1890, by using a stronger light, showed that the eye also might be transillumined, the pupil appearing as a red disc. In 1892 H. Brown Kelly of Glasgow showed that by this method a person with closed eyes sees a dull red glow if the antra be normal, but if the antral *tache* be absent the subjective light sensation will also be absent, and its value as an agent in chronic affections of the nose and antra, etc., needs more study. The field of investigation for the x-ray and stereoscopic radiography is new to us, but is yielding much valuable information as well as warnings of its dangers to both subject and operator, and showing that only skilled workers should be allowed to operate such far-reaching agents as the x-rays.

At the present time dental bacteriology is in its infancy. If, as Arkövy and Goadby[8] point out, we have a new form of microbe of a very pathogenetic variety in connection with pyorrheic pus, an explanation of pyorrhea or caries alveolaris specifica or interstitial gingivitis or osteomyelitis may be found, and we hope a terrible scourge in oral pathology stopped. With the present unsettled work in connection with the group of pus germs and their varieties much has to be done to prove their identity and their relationship before we can profit by the serum treatment or the effect of toxins on the peripheral nerve endings of the gingivæ. Mikulicz has recently developed a most interesting problem. By injection of nucleic acid or even of normal saline solution, an artificial hyperleucocytosis may be produced which may combat bacterial invasion even when this has already made itself manifest, such as in diseases of the stomach and intestines which demand surgical interference.

So far as I know, little or no work has been done on the influence of the growth of bone on the positions of teeth. Who has not noted pathologic effects from bone changes without any seeming cause, or with an early gingival and pyorrheal condition which may lead to atrophy, osteomalacia, crowding and even turning of the teeth from the normal?

The question of having or not having some softened dentine over a pulp nearly exposed is often wrongly interpreted; consequently excavation is too superficial and masses of carious dentine left, notwithstanding energetic disinfection. Partsch has demonstrated in his valuable work on decay of the dental pulp, that bacteria will soon migrate into the pulp and lead to its decay. By far reaching removal, however, of carious masses we reduce the danger of pulp infection to a very low point, but should we risk it unless we carefully note the type of patient? It is claimed by some that pyorrheal teeth are improved if the pulps are removed and if so how has it been proved scientifically?

Other features of interest, on account of the disfigurement and serious trouble likely to follow, are the changes which take place in the bone and tissues surrounding the teeth, causing their change of position, crowding or erosion, altering all the ordinary articulation of the teeth. So far no work on the pathology, etiology or treatment has been considered and the subject is one that requires some attention from this Section as falling within the province of oral surgery and pathology. Our public institutions, such as asylums, jails, county hospitals, and industrial homes have outbreaks of dysentery, stomach and intestinal troubles which are attributed to dyspepsia due to unsuitable food and to confinement with crowding. How many are really due to unhealthy conditions of the gums, mouth, teeth, and are often classed as scurvy? Let these patients be urged to clean the teeth and mouth, using some toothpick, brush, dentifrice or antiseptic wash, and many patients would recover without any change of diet. Let the cleansing of feeding vessels with sterile sand, plenty of soap and hot water be insisted on and diarrhea, dysentery and alimentary troubles generally would become *nil*. Why should not a dentist be appointed to inspect mouth, gums and teeth of every inmate in the Monday parades? The dental outfit should be paraded with the rest of the prisoner's or inmate's equipments. A few extra marks given for attention to these details, and for the neglect of them punishment, would benefit both health and discipline. Prisoners and patients, like other human beings, when dyspeptic or with sore teeth, mouth and gums or when otherwise out of sorts, are liable to take a distorted view of things and to become fractious. Picture a patient without proper means of cleaning his teeth for long periods at a time. The accumulations of tartar, a certain amount of septic material or the *Oidium albicans* (the latter especially if the person is debilitated from some exhausting disease as typhoid, pneumonia, influenza, malaria, and if he is receiving milk in his diet) are not long in working their effects. The gums and teeth become congested, tender and lead to the bolting of food, which, being held in the stomach, causes fermentation with dilatation and cardiac gastric and intestinal troubles and the natural sequences, diarrhea, colitis, appendicitis, biliary catarrh and dysentery. If one believes in the "dysentery ulcers" of the mouth (Cheyne and Burghard) although their exact relation to the stomachic condition is not clear, it is easy to infer how the etiology is established and the course of disease continued. I believe that in many jails in Bengal steps are taken to enforce cleanliness of the teeth by toothpicks, use of toothpowder made of charcoal and powdered burnt alum. The East Indian and African in free life is very careful of his teeth and every opportunity should be given him in prison to keep up this cleanly practice.

The question of the teeth of children in elementary schools is one of our greatest difficulties and since we know the dangers of oral sepsis and its possible origin of septic, pyemic conditions, pneumonia, diphtheria, etc., it becomes one of the greatest gravity. The estimation of dental caries can be better made and its progressive increase will be seen. To arrive at the etiology we shall have to go to the infancy period and see that the chief predisposing causes are heredity and malnutrition; the determining cause is the general neglect of the mouth, but especially allowing the food to accumulate about the teeth and so, by the lactic acid and such micro-organisms as yeast or streptococci acting together, the albuminous substance is dissolved and decalcification of dentin takes place. Improper and insufficient feeding of the mother before the birth of the child should be carefully guarded against. The tendency to use only patent foods instead of pure milk is known to affect the two sets of teeth seriously. Some recent observations by Dr. William Hall of Leeds, England, between the children of Jewish and Gentile parents at various ages shows the Jewish child was not only better developed physically but suffered less from bad teeth. In Mrs. Watts Smyth's book, "Physical Deterioration," we find the following:

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[7] British Medical Journal, March 25, 1905.

[8] British Medical Journal, Nov. 19, 1904.

> Comparing a Gentile school in a good district with a Jewish school in a similar one, Dr. Hall says that the Gentiles had 8 per cent. rickets, 38 per cent. bad or backward teeth; the Jews 5 per cent. rickets and 11 per cent. defective teeth. In a Gentile school in a poor district there was 50 per cent. rickets and 60 per cent. bad or backward teeth; in the Jewish school 7 per cent. rickets and 25 per cent. bad or backward teeth. The percentage in the Jewish poor district town school was better than the country school, where 7 per cent. had rickets and 33 per cent. bad or backward teeth. As evidence that this condition of the teeth is associated with better physical development the Jewish child aged 7 years weighed on an average four pounds more than the Gentile, at 9 years seven pounds more. Jewish women are better taken care of during pregnancy, more anxious to nourish their children, more attentive in early chilhood and feed them more intelligently.

Once a tooth is formed, nothing will change it for the better, so that the effects of imperfect nutrition will only influence the portion of the teeth then being calcified. Damage done during calcification can never be undone and we are well acquainted with the effect of any serious illness on the hair and nails. Carious teeth give pain of a recurring and most wearing and aggravating character, as well as loss of rest and subsequent impaired usefulness, not only to the sufferer but to all the household as well. This is bad enough for one of mature years, but is more serious for a young child, as it leads to fear, pain, imperfect mastication, dyspepsia, anemia, defective nutrition, intestinal and gastric troubles with toxic effects local and remote, and stunting of the growth—to say nothing of the irregularities in the jaws and teeth—and, added to all this, the infliction of much suffering on others, for his exhaled breath is even worse than that which reaches his lungs. The remote effects are so great as to be legion: Suppurating glands of the neck, diseases of accessory cavities of the jaws, to say nothing of the cancers of the tongue and jaws. If, instead of teaching unnecessary subjects, a little more time were spent in cleaning teeth with some antiseptic tooth powder on the child's arrival in school and before leaving, something might be done. Where some children are taught cleanliness, many are not, for with mixed schools, all classes of children work together and disease is carried from one to another and unclean mouths should be rejected as we would suppurating eyes, ears, or necks.

A subject which has interested me during some histopathologic work is the cause and frequency of a condition resembling obliterative arteritis in the pulps and periodontium. It has some bearing, I believe, on the question of alveolitis, gingivitis and their sequelæ, for in some cases examined pathologic conditions similar to those found in the lower extremities (i. e. in the dorsalis pedis artery, and in the popliteal and tibial vessels) have been described. The lumen is wholly or nearly obliterated by fairly dense connective tissue and round-celled infiltration, and in others are organized thrombi, with well marked and thickened intima and media. Further study of a collective series of cases would perhaps aid in the understanding of so-called pyorrheal conditions, atrophy and recession of the gums with corresponding loss of the teeth. If I might suggest, there should be a collective investigation committee or bureau to which material could be sent and members could then by mutual help, discussion and literature, aid in determining some of the leading questions as to etiology and treatment of many conditions. In a country so large and widely scattered, much valuable material is lost, but, if a bureau of workers were formed, material could be placed in the hands of those competent to study it and could be reported on at the meetings and through the journals, for we sadly need a dental literature index, so we could know something of what others are doing. The loss to workers through the discontinuation of the bibliography by the *Dental Cosmos* can hardly be realized, for few can afford to file all the journals necessary to follow up that work. Tropical diseases are everywhere taking lead with our scientists and it is interesting to see some of the work that is being discussed which has an important bearing to oral pathology and which is bringing to light facts in relation to the teeth, jaws and tongue. Our program shows very nicely the wide application of medicine to dental surgery, of tropical medicine to pathology; the close relationship of the M.D. to the D.D.S.; the need of a broad scientific education as well as its mechanical principles; the value of the bibliographic study; the need for special research; the appointment of dental surgeons to act in public institutions as well as in the Army and Navy; the utilizing of material for study by a bureau of investigation and the early teaching of hygiene to the mother and child so as to increase the physical and economic improvement of our people.

DISCUSSION.

Dr. M. L. Rhein, New York, stated that he is in thorough accord with Dr. Latham's idea of a central bureau for scientific study of pathogenic or other specimens that might be sent from various parts of the country, and hoped that such a plan could be put on foot.

Dr. Eugene S. Talbot, Chicago, said that, though the average dentist does not see anything in relation to his specialty but the mechanical side, within the last few years certain men in the country have demonstrated that there is hardly a pathologic condition of the mouth that is not due to some constitutional cause. He considered that, perhaps, the most important point in Dr. Latham's paper is that in regard to the treatment and care of the mouth during the development of the child. Almost all of the deformities and pathologic conditions of the mouth, he said, can be produced by a want of proper nourishment; the first period of stress is probably the most important period in the development of the child, and deformities of the jaws, irregularities, etc., are apt to occur when the tissues begin to form. He agreed with Dr. Latham that nerve-end degeneration has much to do with the development and disease of the teeth. In the specialty of stomatology, as well as in other specialties in medicine, autointoxication and mouth infection are important causes of disease, and if this specialty is to take rank with other specialties of medicine these three important points must be considered.

Dr. M. I. Schamberg, Philadelphia, declared that workers in this field are better able to realize its scope than the average dentist or the average practitioner of medicine. It is always a great pleasure to be able to do for patients that which so many others fail to accomplish, and it is for the purpose of spreading this information to the general practitioners of medicine and dentistry alike that the Section takes up these topics. It is a pernicious practice to retain abscess teeth until beyond the acute stage, but extraction of those teeth invariably is not to be advised. In Philadelphia there has recently been established a corps of medical examiners, but it may be some time before it will be possible to place dental examiners in the public schools. From what Dr. Rhein is able to learn there are very few children in the schools whose teeth are not badly neglected; and it shows the necessity for a united effort on the part of dentists throughout the country.

Dr. John S. Marshal, San Francisco, believed that with absolute oral cleanliness it would only be two or three generations before dentists would be scarce. Diseases of the mouth are usually diseases of neglect and sometimes of filthiness. Some individuals, even ladies, are perfection in dress, in the way they take care of their skin, their finger nails, etc., and yet when they open their mouths the odor of their breath, the discoloration of mouth and teeth, are disgusting. We make the mistake of not beginning early enough with children. Though they may become lax for a time, after they get a little older they will fall into line. Dr. Marshal believed that a great many gastrointestinal diseases and many diseases of the respiratory organs are due to infections from the mouth. He reported briefly several cases illustrating this point. A woman who had been suffering for three or four years with what she supposed was malarial trouble, and who had changed physicians a dozen or more times, getting no better, but being in wretched health, finally came to Dr. Marshal. She had salivary calculi all over her teeth, the gums were badly inflamed and could not be touched without bleeding, pus oozed up around the teeth. It was two weeks before he even got the teeth clean. He then gave her mouth washes and taught her to clean her teeth and to use a toothpick and to use floss silk, and in about four months she was well. The difficulty was entirely due to constant infection from the mouth. Another woman, pale and emaciated, said that she had not been well for four or five years, and that physicians did not seem to be able to do anything for her. She said that her mouth was sore and her teeth loose. She had a partial silver plate with clasps in the upper jaw, and it was utterly buried with salivary calculi between the teeth. It was so bound in position by the calculi that it could not be removed. She did not know that she should remove the plate at night. She said that she had worn it for seven years without taking it out. She was suffering from infection from her mouth and tonsils. On cutting away the salivary deposit, the gum beneath the plate was found to be as raw as fresh beef; the mucous membrane was all destroyed. She recovered after several months' treatment. Dr. Marshal considered this another illustration of constitutional conditions coming from infection from the mouth. He has also seen many soldiers from the Philippines. The majority of these men are from the lower walks of life and have very little education—certainly no idea of hygiene except what is taught them after they come into service. They know absolutely nothing of the care of the mouth; probably never even owned a tooth brush. It is a part of the dentist's duty to teach these men the use of the tooth brush. Those coming home from the Philippine Islands frequently have salivary deposits all over the teeth, the gums badly inflamed, and many of them suffering from pyorrhea. Some of these men are sent home with dysentery or diarrhea. Dr. Marshal said that a thorough cleansing of the mouth, the use of a proper tonic, and giving good mouth washes to keep the mouth clean and to tone up the tissues, have produced wonderful results in many cases of diarrhea. Some have been under treatment for four or five months; others eight or ten months; they usually become well finally. With those having dysentery it has not always been so beneficial. Some are markedly improved, and a few have been cured. Amebic dysentery can not really be traced to infection from the mouth. Dr. Marshal believes that many of these gastrointestinal disturbances are due to secondary infections from the mouth.

Dr. Frank L. Platt, San Francisco, stated that he is particularly interested in the examination and care of the teeth of the children in school, though he does not know what course can be taken to bring about that much desired condition of affairs. He said that he was appointed on a committee to interview the Board of Education in San Francisco to see what could be done there, and he does not believe that he was ever treated more shabbily in his life, and he really started out with honest intentions. After reviewing the work done in Europe and some of our eastern cities and states, the committee did not seem to be at all impressed with the importance of the matter. When Dr. Platt referred to the fact that several years before the board had appointed an oculist to examine the eyes of the children in schools, it was insinuated that pecuniary profit had a part in the motives of the professions concerned. These bodies must be impressed with the importance of this work. Back of it all there must be a change in education, dentists must be better educated. With men and women who realize the importance of this specialty, and who are enthusiastic, there will be an impulse that will not be put down. Dr. Platt stated that he has spent considerable time in work along this line and is utterly disheartened to find how few men or women are really enthusiastic. Most of them are working for bread and butter. It is hard to arouse any enthusiasm, and I think the fault lies in the foundation—in the teaching. It is of vital importance to the coming generation of people in this and every civilized country that mouths be taken care of. If the authorities could be impressed with the importance of this matter so that they could not pass it over with a slur, then something might be accomplished. It might be a good plan for some of the profession to be elected mayors of cities. Back of it all, he said, there is the question of scientific education and enthusiasm of the student; that it may not be simply a means to an end, and that end bread and butter.

Dr. G. V. I. Brown, Milwaukee, declared that the stomatologist must himself be educated; the members of his profession must be better educated; the general practitioner of medicine should be educated in this direction; the people should be educated, and the patient should be educated. Dr. Brown said that when he hears discussions of this sort he always feels that some tribute ought to be paid to the men who for years and years in the face of great discouragement have patiently persisted and lent their best efforts to the fixation of one idea, that this branch of medical science needs special care and education, and that it is of unusual value to the human race. This can be accomplished, first, by elevating the science in such a way that scientific men can be made to understand that these things are true. Other people can be impressed by actual demonstration with the seriousness of these affections, and demonstration also of the simplicity of their correction at an early period. Everybody knows in a general way the possibility of infection of the mouth causing serious disturbance, but they do not, and dentists do not, recognize these conditions in an incipient state. Patients with these disturbances come first to the dentist, and the dentist does not recognize them. Dentists can all recognize them when they have reached a serious stage, but they fail to understand early enough that they are serious conditions.

Dr. V. A. Latham said that a better medical training is needed, not a dental training. Dentists are all apt to become mechanical; they do not connect the medical work closely enough with the dental. It is like teaching students histology and pathology without anatomy; they do not get foundation principles, and in that way they miss the anatomic bearings to the detriment of all their work. Crowning, bridging, etc., are always taught because the dentist is supposed to replace lost organs and in that way to strengthen them; but he must first see that the primary organs are in good condition. Therefore, Dr. Latham thinks that some pressure should be brought to bear on the dental schools. She asked why dentists are the only specialists who are required to have a special degree, and why the dentist should be anything other than a doctor of medicine. Every man, Dr. Latham thinks, should be trained as a physician for dentistry, and then allowed to specialize; mechanical training is not the only thing. Her experience with girls about the age of puberty is that many cases of chlorosis come with inflammation of the gums and ultimately lead to pyorrhea. If the medical man could be trained in the early symptoms of pyorrhea, she believes that much good could be done. Dr. Latham declared that none of us know the etiology of half the mouth infections, and that it is only by the co-operation of both the medical and the dental branches that the best results can be obtained.

Original Articles

THE TREATMENT OF SUPPURATIVE AFFECTIONS OF THE FACE AND NECK EMANATING FROM THE MOUTH.*

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Early in the history of medical science, surgeons realized that to render the human economy a service meant to imitate and to anticipate Nature's own method of disposing of disturbing elements. Thus the evacuation of pus whenever it is found within the body became one of the cardinal principles of surgery.

Suppuration is a cleansing process, an effort to throw off a virulent irritant. Unaided, the vital forces will ultimately effect an evacuation of a pus cavity, but the method is slow and is attended with certain dangers, prominent among which may be mentioned a change in the integrity of the surrounding structures.

For a long time, the use of poultices which would bring boils "to a head" and cause abscesses "to point" was considered proper treatment. Now most surgeons advocate the prompt evacuation of suppurating areas as soon as the presence of pus is determined. Why many should fail to apply this more advanced method of treatment to abscesses associated with the teeth and jaws it is difficult to say. There is no part of the body surface where a scar following the rupture of an abscess is more disfiguring than on the face or neck, and yet how often do we meet with extensive suppurations in these regions which have been encouraged by the use of the hot water bag or the poultice. Unfortunately, relief from pain is frequently effected by the application of heat to the face during attacks of dentalgia and patients are ever ready to apply this treatment. It, therefore, becomes the duty of medical and dental advisors to discourage this unwise practice, for most affections about the jaws which can be relieved temporarily by heat are suppurative in nature.

The larger proportion of pyogenic infections of the face and neck, save those which occur through the skin, emanate from the mouth. The throat and nose are occasionally the seats of initial infections which spread to other parts of the face; but the oral cavity proves to be the most prolific source for the invasion of pus-producing organisms. This is evidently due to the fact that the teeth, by virtue of their presence in the mouth and the various diseases to which they are subject, invite the lodgment of food and other oral débris and transmit infections to the deeper structures. Edentulous mouths are seldom troubled with extensive suppurative processes. It is true that pus organisms may gain entrance into the tissues through wounds within the mouth, by way of the ducts of the salivary and mucous glands and by direct absorption, but such infections are unusual and are of serious moment only in patients with markedly debilitated constitutions.

Suppurative parotitis and other deep-seated infections which have no etiologic relation to the teeth are usually handled intelligently by the general surgeon, and, therefore, will not be considered at length in this paper.

So often do patients present themselves with swollen faces indicating suppurative foci in the superior maxillary, inferior maxillary and submaxillary regions in which the symptoms of tooth involvement are obscure, that a careful examination of the mouth becomes necessary for the proper detection of the underlying trouble. It must be remembered that the exciting cause of a maxillary, palatal, pharyngeal, tonsillar, buccal or cervical disease may be located in or about a tooth and that the successful treatment of any suppuration is dependent on the true recognition of its etiologic factors. Some of the most usual abnormalities about the teeth which cause a breaking down of the adjacent tissues are the apical and peridental abscesses, and these are occasionally difficult of detection until such time when a fistula is created or the parts become swollen. A putrescent pulp in a tooth with little evidence of its presence has been known to produce maxillary troubles of considerable magnitude. Ofttimes a pyorrheal pocket may go unobserved for some time and may cause involvement of the nearby tissues, and, secondarily, of the lymphatic glands. It is evident, therefore, that to properly treat suppurations which take place about the face, a just regard must be given mouth conditions which may be active in causing such infections.

Another class of cases are those in which infection takes place in distant parts through the lymphatics. During the past year, a number of patients came under my observation in whom the lymphatic glands of the submaxillary and cervical regions had become enlarged through infection which took place about impacted third molars and from other pus areas in the mouth. These conditions in themselves appeared to be of little consequence and might readily have gone unobserved had not a careful examination of the mouth been made. Inflammations spread very rapidly to the deeper tissues from pockets formed about lower third molars and may extend to the throat, leading to suffocation, as a result of an inflammatory edema of the glottis. A case in which the throat was so badly swollen as to interfere with respiration, came under my care last summer and received prompt relief by the removal of a crowded third molar. When inflammation extends to the temperomaxillary articulation, the examination of the mouth is frequently rendered difficult through fixation of the jaw. In some cases in which the lymphatics become involved, the glands are so badly overworked that they break down and require surgical means of ridding them of their contents. The suppuration of the neck in two cases seen by me during the past winter was so extensive as to suggest Ludwig's angina. In fact, it is not unreasonable to suppose that in most, if not in all cases of Ludwig's angina, the avenues of infection, if sought for, might be located within the mouth. The statement made by many authors that such cases usually occur after typhus fever and other debilitating diseases, merely substantiates this belief, for during the course of most protracted fevers unless the greatest care is given to cleansing the mouth it will be found to be in a deplorable state of filth.

The treatment of suppurative affections of the face and neck which emanate from the mouth may be considered under the heads of preventive, abortive and curative treatment.

PROPHYLAXIS.

Preventive treatment consists of the proper attention to the care of the mouth and teeth. The scope of this work is so broad as to include all departments of dentistry. It would, therefore, be manifestly impossible, as well as inadvisable, to deal in this short paper with all that might be embodied in the practice of oral prophylaxis. Suffice to say, that if all mouths were to receive a reasonable amount of intelligent care in the hands of competent dentists and if this work were supplemented by the patient's personal attention to oral cleanliness, many of the extensive suppurations about the face and neck would be averted.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

In connection with preventive treatment, too much stress cannot be laid on the importance of curing every abscess, checking the pus discharge in every pyorrheal case and removing other infective foci, even though the loss of teeth is thereby necessitated. An emphatic stand must be taken in this regard for the reason that the prolonged retention of uncured teeth not alone endangers the integrity of the surrounding tissue, but ofttimes lays the patient liable to constitutional disorders of a more or less grave nature.

ABORTIVE TREATMENT.

Abortive treatment is applicable in cases in which there has been little suppuration, and is dependent primarily on the removal of the cause, and secondarily on the institution of such measures as will check the inflammatory changes which have taken place in the tissues, and thus aid Nature in restoring the parts to the normal. The intermittent application of cold compresses or the ice bag has proved to be of considerable value in reducing the inflammatory swellings about the face and neck, and has frequently prevented the breaking externally of abscesses in these regions. While a cold application to the face does not afford the comfort or relief from pain that heat does, its tendency is to prevent rather than to encourage suppuration. Ichthyol ointment and other similar preparations are occasionally of value in mild inflammations affecting the soft tissues of the face and neck, but have the disadvantage of acting like a poultice when pus has already formed. In all cases in which an infection is known to have occurred from within the mouth, the patient should be instructed to use with regularity a good antiseptic mouth wash. If the lymphatic glands of the neck have become enlarged, the therapeutic application of the *x*-rays will be found of service in reducing them. In all cases, when enlarged glands of the neck have not disappeared after the initial trouble has subsided and when other methods of treatment have failed, the *x*-rays should be given the opportunity to cure before resorting to excision. X-ray treatment in my hands has been a valuable adjunct in dealing not alone with enlarged glands, but with many suppurative conditions about the face, including alveolar pyorrhea.

CURATIVE TREATMENT.

Curative treatment consists primarily in the evacuation of pus as soon as its location is detected. If the case is seen early, this can usually be done by incising the abscess from within the mouth. If the disease is at the end of the tooth and has not yet passed through the alveolar process and drainage can not be readily accomplished through the root canal, the abscess can be reached by piercing the process with a spear-pointed drill.

The extraction of the tooth at fault is usually followed by relief and little or no subsequent treatment is necessary in the vast majority of cases to produce a permanent cure. The sacrifice of a tooth is justifiable in cases in which the patient's life or health is put in jeopardy by its retention, or when the removal of a tooth will prevent the necessity for draining an abscess through an external opening on the face or neck.

When once the decision is reached that a tooth will be of no further service to the patient, or that its removal is essential to the cure of an abscess, no time should be lost in relieving the patient of the offending member. The antiquated method of awaiting the passing of the acute stage is without justification and this practice should be condemned as obsolete and pernicious.

Removal of teeth will not, however, invariably effect a cure or adequately drain an abscess. Recognition must be given to cases in which the pus has burrowed its way through a small fistula in the jaw bone and set up a more extensive abscess in the soft tissues beyond, as sometimes occurs in the infraorbital region above and in the submaxillary triangle below.

Abscesses from the upper teeth which spread to the roof of the mouth or infiltrate the cheek can be readily evacuated by incisions made within the mouth. Many abscesses in the lower jaw can likewise be opened into the oral cavity, but when, as sometimes takes place, the pus has reached the submaxillary triangle, the extraction of the tooth or an external opening on the neck becomes necessary.

In operating on abscesses of the face and neck which require external openings, large incisions are seldom, if ever, warranted. For some time I have been using a trocar and cannula in place of the knife for puncturing these abscesses. The pus will readily drain through the cannula. As soon as the trocar has been removed, a small piece of rubber drainage tube with mural apertures can be inserted in place of the cannula and allowed to remain until all pus discharge has ceased. The resultant scar from this surgical method, in most cases, will prove to be nothing more than a submaxillary dimple, and in some instances is no more conspicuous than the average pock mark. In all these cases every effort should be made to produce as little facial disfigurement as possible, and the method of operative procedure that has just been outlined will do much to overcome the unsightly scar that follows the gaping wound that many surgeons make. A very small opening with a trocar and cannula, followed by curettement and the insertion of a small-caliber drainage tube, will be sufficient to assist Nature in ridding itself of the most extensive abscess that appears in the regions referred to.

It might be well to keep in mind the necessity for passing a safety pin through the outer end of the tube, or for adopting some other means to prevent its being lost in the abscess cavity.

A large, wet bichlorid of mercury dressing applied to the part and held by an oblique bandage will prevent the tube from slipping out and will catch the discharge from the wound. It will be found necessary to shorten the tube as the swelling subsides. The daily change of dressing and syringing of the abscess through the drainage tube will be followed by a cessation of pus-discharge within a week or two. The tube may then be removed and the wound allowed to close. During its healing, an ichthyol ointment dressing will act as a convenient protection. If the induration of the subcutaneous tissues and the enlargement of the glands are slow to disappear, the *x*-rays might be applied to hasten the resorption of the inflammatory infiltrate.

DISCUSSION.

Dr. John S. Marshall, San Francisco, said that he recently had a case of infection either from a hypodermic needle which had not been properly cleansed, or else the cocain solution had spoiled. The operation was performed by his assistant during his absence, and when he returned the patient had a bad infection abscess in the maxillary triangle. Cocain had been used for the extraction of a tooth. Of course there is the possibility of infection having come from the tooth itself, but it was so much further forward than the location of the tooth that Dr. Marshall was inclined to think infection came from the injection of cocain. A patient with a badly swollen jaw consulted Dr. Marshall, who could find no tooth on that side that could by any possibility have been the cause of the trouble; on further examination he discovered an ulcer under the tongue near the base, and could form no other opinion than that this abscess was caused by absorption through this ulcer. Both of these operations had to be external. In the first case he removed at least a teacup full of pus; in the other less. He was called to see a patient with an impacted lower third molar with tremendously swollen face and neck. He operated and took out at least a pint of pus. That was an infection from the molar. He did not see the patient until long after suppuration had been established, so there was no opportunity for either of these patients to have done anything in the way of prevention. Sometimes these cases result in septicemia. In the case of a man who had a large abscess in the neck, there was a tremendous amount of swelling, the facial artery had been injured in an operation to evacuate the pus, and later emphysematous gangrene occurred in the location of the ligature, which slipped off in the night and the man bled to death.

Dr. G. V. I. Brown, Milwaukee, said that to him there is nothing more puzzling than to know when to make an opening from the outside, and just what kind of an opening. He said that it sounds like a confession of weakness, but it is a grave question early in a case whether to continue in the effort to evacuate on the inside, or to operate.

Dr. M. L. Rhein, New York City, said that infection proceeded by absorption through the lymphatic glands in pyorrhea, but only when there are other complications than true pyorrhea alveolaris. He has never known of a simple pyorrhea alveolaris, in which the pathogenic conditions were preceded by absorption. He has always found some subsidiary complication.

Dr. Schamberg maintained that pus in the mouth can gain entrance into the lymphatic channels by absorption. Opening through the canal is contraindicated, except to give vent to organisms before they have invaded the surrounding tissue, and that only when there is no fistula. In wisdom teeth, the prompt removal of those teeth is the best cure. This treatment is only good in acute cases.

THE ETIOLOGY OF TOOTH AND NAIL CORRUGATIONS.*

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Very early in my professional career, the peculiar markings I frequently noticed on the teeth of some of my patients excited my curiosity and I determined to ascertain, if possible, their cause and significance.

These markings, in some cases, were in the form of opaque spots and in others they were latitudinal corrugations somewhat resembling the wrinkles on a cow's horns. These signs were not always present in the teeth of all of the members of the same family. In my researches, I often noticed similar markings on the nails; the lines being both latitudinal and longitudinal. I could not, however, always find these markings in both the teeth and the nails of the same individual at the same time.

I could find but little in medical books or periodicals relating in any way to the subject of tooth markings. References to and descriptions of the pits in the enamel which were supposed in some way to be associated with the eruptive fevers occurring during the period of dentition, and Hutchinson's notches, included nearly everything that had any scientific value. Even now I find but little in addition to what was then given by Hutchinson.

This paucity of literature is undoubtedly due to the widely spread belief that these markings indicate nothing of importance to the practitioner. Such an opinion I regard as erroneous. They have at least an etiologic place in medical literature and, for this reason alone, are worthy of the attention of those who are interested in the general study of causes and effects. They also have other and more practical features of interest—features of which no one engaged in the practice of medicine or dentistry should be ignorant.

It is true that these markings point only to abnormal and interrupted changes in nutrition that occurred perhaps a number of years in the past, when the enamel was soft and impressionable and which, consequently, can have no direct connection with present conditions. But, even so, they serve the very important purpose of revealing and confirming the existence of past diseases, a knowledge of which is necessary to complete the history of any given case. Moreover, they are particularly valuable if detected in their formative stage, because they indicate the origin and nature of the malnutrition which, by proper treatment, at this early period, can be corrected.

After studying and comparing the history of many cases, I became satisfied that the transverse lines on both the nails and the teeth were caused by auto-intoxication of which rheumatism is the result, and that they were more plainly developed, and perhaps alone present in the more painful varieties of this affection, such as lumbago, sciatica, and arthritis, while the longitudinal lines pointed to intestinal indigestion and were especially prominent in colitis, proctitis and hemorrhoids.

It then occurred to me that the corrugations on the teeth of young children might have been caused by an attack of rheumatism from which the mother suffered during gestation.

Years afterward, I found this hypothesis to be correct by the discovery, substantiated by ample evidence, that mothers who suffer from rheumatism during gestation bear children whose teeth are corrugated, and that the teeth of children who have rheumatism during the period in which the enamel of the permanent teeth is developing are also corrugated.

From these facts I was forced to conclude that the responsible cause of the corrugations on both the teeth and the nails was auto-intoxication. Auto-intoxication, as is well understood, results from the absorption of certain toxins, as ptomains, etc., which arise from the intestinal fermentation. These interfere with normal functional activity, clog the emunctories, pollute the blood stream, and produce a substance, readily seen in the blood, called rheumatic fibrin.

That the auto-intoxication which occurs from the absorption of these bodies is the cause of rheumatism, is a conclusion I arrived at eleven years ago, while suffering from an attack of this affection so severe as to render me helpless for many weeks. This opinion was amply verified, afterward, by clinical experience and research.

Formerly, the presence of fibrin in the blood was believed to be compatible with a healthy condition of the system, but now its existence is held by some to have a pathologic significance only, and to afford the most reliable means of verifying the diagnosis of fibrinogenous disorders, as apoplexy, valvular disease of the heart, tuberculosis, rheumatism, etc. According to this view, even the slight traces of fibrin which some pathologists still maintain is an ingredient of healthy blood, are really due to the prodromal manifestations of disease. The nature of the disease is determined by the appearance and its severity by the quantity of fibrin present.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

It is interesting to know that Drs. Watkins and Salisbury claim that the leucocytes produce fibrin after the manner in which the spider spins its web. It is a question in my mind, however, whether these active organisms, instead of creating fibrin as these authors maintain, are not in reality laboring to destroy it. This view is certainly more in harmony with the relation leucocytes are known to sustain toward many other pathologic elements in the blood.

Opaque spots, when found in either the enamel or nails are also an indication of auto-intoxication. As the finger nails of some patients are so carefully and sedulously manicured that all signs, which would otherwise appear, are obliterated, the toenails, in doubtful cases, should be examined, as they will exhibit similar markings.

The lines on the nails will disappear if the system is freed and kept free from auto-intoxication; for the corrugations which appear at the matrix to-day will disappear at the tip in the course of three or four months. When these markings are absent, it is fairly sure that your patient is not suffering with any serious form of either rheumatism or intestinal indigestion.

The fineness or coarseness of the markings correspond with the degree of the severity of the attack, and the position of the latitudinal corrugations determines the date of the attack. If they are found near the end of the nail, it is safe to conclude that the attack occurred about four months previously; if they are found at the center of the nail, about two months will cover the time that has passed since the attack appeared; if the lines are near the matrix, the disease has not existed longer than two or three weeks.

If the longitudinal lines are broken and irregular, they indicate an attack of intestinal disturbance of unusual severity, such as occurs in colitis, proctitis and gout. The position of these angular interruptions in the longitudinal lines, denotes, as is the case with the corrugated lines, the period of time that has elapsed since the attack occurred. It is interesting to note how thin and how brittle the nails become in certain stages of rheumatic affections.

From the foregoing facts and illustrations deduced from clinical experience, it is easy to understand how greatly familiarity with these physical signs will aid the practitioner in making a correct diagnosis of the condition of his patient.

7 West Fifty-eighth Street.

DISCUSSION.

Dr. M. H. Fletcher, Cincinnati, said that the markings on the nails are an established guide to physicians, and that they are especially indicative of disorders of the alimentary canal; but any acute wasting disease which so reduces the assimilative processes of the body that destructive metabolism is present for a period of one or more days will cause transverse corrugations in the nails. The number, size and depth of these are determined by the severity and length of time that destructive metabolism is present. Pneumonia, pleurisy, or any acute attack will show these markings as surely as derangement of the alimentary tract. On this principle, Dr. Fletcher agreed that auto-intoxication of sufficient intensity to bring on an attack of rheumatism would show just as quickly as though it resulted in some other form, but he was not prepared to accept the idea that these markings are especially connected with rheumatism any more than with other diseases. Under the same conditions the enamel organ would be affected while enamel is being formed and leave the markings on the teeth. Dr. Fletcher said that he did not see how Dr. Curtis would know that markings were being formed on the enamel before the teeth were erupted, so that he could "administer proper treatment at this early period."

Dr. John S. Marshal, San Francisco, said that all dentists see those cases and attribute them to some disease occurring in early childhood during the formation of the enamel. One can tell within six months or a year when these changes took place, and at what period this child suffered from an arrested nutrition or an arrest in the growth of the teeth themselves. A child suffering from measles, scarlatina, diphtheria, in fact, from anything that disturbs the process of nutrition for a time, even a few days, may have marks developed on the enamel. In syphilis also and after the use of mercury cases show more or less notches, which Mr. Hutchinson first described. He first thought that they were entirely due to syphilis, but later he said that the use of mercury to salivation would cause them. These striæ occur in persons suffering from acute rheumatism. Dr. Marshall is in the habit of examining the finger nails of patients, but he has never seen a gouty individual with those striations.

Dr. M. I. Schamberg, Philadelphia, said that there is no doubt, when these striæ appear on the teeth and nails, that it means that during the formation of the tooth or nail there has been some defective nutrition. He said that this is evidenced by the fact that these markings occur on the teeth of children from measles, scarlet fever, and other exanthemata of childhood, as well as in syphilis, but he doubted that anyone has been able to find that they are due to any one cause, or that constitutional disease might be diagnosed thereby. The only marking on the teeth that is absolutely pathognomonic when it is typical, is Hutchinson's notch, and even that is frequently improperly diagnosed. Other markings only mean that the patient has at some time during development suffered from some constitutional disease which has influenced nutrition. Dr. Schamberg considered that Dr. Curtis' allusion to the formation of these markings in the embryo-child as due to rheumatism indicates that he has not given the subject mature thought for the reason that during embryo life the permanent teeth can not be influenced. The formation of the enamel takes place in the permanent teeth after birth.

TO WHAT EXTENT ARE TEETH NECESSARY TO CIVILIZED MAN.*

M. H. FLETCHER, D.D.S., M.D.
CINCINNATI.

This discussion as to the doubtful necessity of teeth to civilized man, is not from the view point of "a bald and toothless future," nor is it to imply that I do not believe in their utility, comfort and beauty; on the contrary, I believe that the full number of perfect teeth in their normal position, with healthy environment, gives the best balance, the best harmony and the most satisfaction from every view point, but what civilization may evolve in the future, seems so many ages ahead that it hardly need concern us at the present time. Nature is so kind, however, that she has fixed on us a wide margin of variation from our present standard of normal, and still preserves to us a good state of health.

This is true both in anatomy and physiology, otherwise the callings of surgery and medicine would not exist, in fact, perfect physique with perfect function is so rare that it is hypothetical rather than real. The labors of a physician seem largely to be spent in endeavors to assist nature in restoring the patient to what they consider a normal state; and yet what we consider being well, is most likely quite a distance from perfection.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

In any event, many persons live, with comfort, a moderately long life, maimed in some way, or with known defects in some function. There may be loss of tissue in kidney, lungs, brain, teeth and many other organs without serious impairment of health; some of these defects man has learned to supply mechanically, notably artificial limbs, teeth and eyes.

There seems to be something about man, when he finds he is able to supply these losses, which so sets him up in his own estimation that he never loses an opportunity to try his hand, and in regard to mouth and teeth, it is my opinion that many times people are worse off for the effort.

In cases where all the teeth are lost, great benefit may result from substitutes, but no artificial denture is at all comparable to good natural teeth, even if the work be perfect, but poor work seems to be the rule and perfect work rare.

In partial losses of teeth, a large per cent. of attempts at restoration by bridgework and plates, are an injury to the mouth and remaining teeth, and little assistance in mastication, serving only as a matter of appearance, the same as a wig or a glass eye. Appearance, of course, is not to be ignored, but the insertion of jacket crowns, bridges or plates, to replace a partial loss of grinding surface is oftener a detriment than a benefit. First, because their attachments injure the teeth to which they are fastened and bridgework especially becomes filthy and serves as a place of incubation for all varieties of disease germs. Second, because they are not needed, for two molars properly opposing each other do more good work than several substitutes. Third, the actual necessity for chewing the food is not so great as is usually held.

With civilized man, the teeth have ceased entirely to be of use as prehensile organs, that is, for seizing or grasping, or as organs of defense, and the necessity of grinding the food can be replaced by machinery and cooking.

Let us consider then the manner in which the teeth assist in carrying out the processes of life. Toothless animals live on practically the same foods, as to the chemistry, that other animals do. Foods in order to sustain animal life must contain proteids, fats, carbohydrates, water and salts. The necessary chemicals for the digestion and assimilation of their proximate principles are supplied by the various glands and specialized cells of the organism. In the higher organisms these cells are largely located in the alimentary canal and its accessory glands. As digestive organs, the teeth are first, for prehensile purposes, and second for grinding, but monkeys, apes and men neither have to seize their food, nor pick it up with their teeth, because of the perfect development and adaptation of the arms and hands to prehensile uses.

The evolution of human teeth for grinding purposes, has been directed by the necessity of triturating vegetable substances in order to liberate proximate principles from their cellulose envelops (cellulose being indigestible), but since the advent of civilization this object is more effectually accomplished by milling and proper cooking, and the necessity for masticating food is almost completely done away with in man.

Carnivorous or flesh eating animals have no need for grinding because their food is all animal, and all parts of animal substances are soluble in some of the secretions of the alimentary tract. This is especially verified in the edentates whose food is exclusively animal in the form of insects.

Birds and reptiles are omnivorous, that is, they eat both animal and vegetable substances, their food is swallowed without chewing, then soaked in their crops or first stomach and afterward ground by the gizzard, or disintegrated by long maceration in the canal, as the case may be. The alimentary tract, however, supplies all that is necessary for the digestion of all nourishing material found in either the animal or the vegetable kingdoms, dissolves bones with the same certainty as other foods, and liberates starches and other carbohydrates from their cellulose surroundings.

Grass and grain-eating animals of necessity must grind the food well in order that the digestive fluids may better attack and dissolve vegetable substances, to the end that the desired proximate principles may be extracted and assimilated. The preponderance of indigestible material in vegetable matter is so great that the herbivores of necessity have larger abdomens and more ample intestines for the purpose of receiving and holding large quantities, in order that they may utilize enough food to sustain life.

All these animals have two dstinct types of teeth, namely, incisors for seizing or grasping, and molars for grinding. Their molars are all large and suitable for grinding their peculiar kinds of food. These animals are provided with other means of defense than the teeth, such as horns, tusks and sharp hoofs, or with unusual running powers.

Flesh-eating mammalia use their teeth for defense and prehensile purposes, but, as stated, have no need of teeth for grinding, the food being taken care of by the juices of the alimentary canal. Animal substances contain a very much larger percentage of nutritious material than vegetable, consequently there is not the necessity for eating such great quantities; as a result, the alimentary canal is less capacious and usually the animal is smaller than in vegetable and grain eaters. The teeth are long, sharp and strong for tearing and for defense, the claws assisting in defense and in seizing food.

Man is classed with the primates, eating all varieties of food, and for this reason is called omnivorous, the hands are used for defense and for prehensile purposes, hence the lack of necessity of long, sharp front teeth for grasping, tearing or defense. Even prior to civilization the superior intelligence of primates enabled them to select their foods, which consists of flesh, fruits, nuts, succulent roots, etc., the grinding of which is neither so difficult nor so necessary as that of twigs, grasses and raw grain.

It is easy to understand how great the loss of one or more teeth would be to an animal which depends entirely on these organs for not only procuring the food, by nipping grass, twigs, etc., but for its trituration and separation; whereas the loss of one or more teeth to a flesh eating animal would not mean so much providing enough were left for seizing and killing its prey. With the intelligence of primates, such a loss can be supplied to a great measure, by the selection of foods.

With the superior intelligence of civilized man, assisted as he is by milling and cooking, the actual necessity of teeth is almost *nil*. Laying aside the delights and entertainment of masticating palatable foods, and also the conventional ideas of beauty of the teeth, let us consider the part which chewing the food plays in carrying out the process of life and health in man.

The following quotations from the last edition of Kirke's "Physiology" seem a fair sample of the generally accepted idea of the subject:

> Page 518.—The act of chewing or mastication is performed by the biting and grinding movement of the lower range of teeth against the upper. The simultaneous movements of the tongue and cheeks assist partly by crushing the softer portions of the food against the hard palate and gums, and thus supplement the action of the teeth, and partly by returning the morsels of food to the action of the teeth, again and again, as they are squeezed out from between them, until they have been sufficiently chewed.
>
> The act of mastication is much assisted by the saliva, and the intimate incorporation of this secretion with the food is called insalivation.
>
> Mastication is much more thoroughly performed by some animals than by others. Thus dogs hardly chew their food at all, but the esophagus is protected from abrasion by a thick coating of very viscid saliva which lubricates the pieces of rough food.
>
> In vegetable feeders, on the other hand, insalivation is a much more important process. This is especially so in the ruminants; in these animals the grass, etc., taken is hurriedly swallowed, and passes into the first compartment of their four-chambered stomach. Later on, it is returned to the mouth in small installments for thorough mastication and insalivation; it is then once more swallowed and passes on to the digestive regions of the stomach. This is the act of rumination or "chewing the cud."
>
> In man, mastication is also an important process, and in people who have lost their teeth severe dyspepsia is often produced, which can be cured by a new set of teeth.

This "cure by a new set of teeth" I believe to be often overestimated, since many mouths are of such a shape, or the tissues in such a condition that the greatest skill can hardly create artificial teeth that are usable, and if the teeth be necessary, advice to have them extracted should be well considered before it is given. It is a fact that many never learn to wear artificial teeth with benefit, even though they are perfectly made, the whole of the digestive work being done in the stomach and intestines.

As to insalivation, the saliva in reptiles is almost entirely for lubrication, it being copious and viscid. It seems to be largely so in all animals, but more especially in the carnivorous and omnivorous animals, its chemical action, according to Kirke, being small. He says:

> Page 478.—The action of saliva is two-fold: physical and chemical. The physical use of saliva consists in moistening the mucous membrane of the mouth, assisting the solution of soluble substances in the food, and in virtue of its mucin, lubricating the bolus of food to facilitate swallowing.
>
> The chemical action of saliva is due to its active principle, ptyalin. This substance belongs to the class of unorganized ferments, which are called amylolytic (starch splitting), or diastatic (resembling diastase), the similar ferment in germinating barley and other grains.
>
> The starch is first split into dextrin and maltose; the dextrin is subsequently converted into maltose also; this occurs more quickly with erythrodextrin, which gives a red color with iodin, than with the other variety of dextrin called achroödextrin, which gives no color with iodin.
>
> $10\ (C_6H_{10}O_5)_n$ (starch) $+\ 4n\ H_2O = 4n\ C_{12}H_{22}O_{11}$ (maltose) $+ (C_6H_{10}O_5)n$ (achroö-dextrin) $+ (C_6H_{10}O_5)n$ (erythro-dextrin).
>
> Ptyalin acts in a similar way, but more slowly, on glycogen: it has no action on cellulose; hence it is inoperative in uncooked starch grains, for in them the cellulose layers are intact.
>
> Ptyalin acts best at about the temperature of the body (35-40 C.). It acts best in a neutral medium; a small amount of acid stops its activity. The conversion of starch into sugar by saliva in the stomach continues for a short time, from fifteen to thirty minutes. It then ceases, owing to the action of the hydrochloric acid secreted by the glands of the stomach. The acid which is first poured out neutralizes the saliva, and combines with the proteids of the food, but when the free acid appears ptyalin is destroyed, and so it can not resume work when the acid is neutralized in the duodenum. Another amylolytic ferment contained in pancreatic juice (to be considered later), however, digests starch in the intestine.

It would seem, then, that the chemical action of saliva is so soon cut off by the effect of the hydrochloric acid in the stomach, that this action might be dispensed with, and also that moistening and lubrication can be replaced by the various beverages. Kirke further says:

> Page 488.—The conversion of starch into maltose is the most powerful and rapid of all the actions of the pancreatic juice. It is much more powerful than saliva, and will act even on unboiled starch. The absence of this ferment in the pancreatic juice of infants is an indication that milk, and not starch, is their natural diet.

Now, assuming this to be the best we know of this feature of physiology, let us add further evidence to the point in question by asking each one how many teeth he has lost and to what extent this loss actually cuts any figure in regard to his health? If you be a physician, what actual knowledge have you that the loss of even eight or ten grinding teeth really makes any difference in the health of the individual? In other words, how necessary are teeth to civilized man?

This feature is well summed up in "Tripler's Manual on the Examination of Recruits," by Chas. R. Greenleaf, Col. Asst. Surgeon General U. S. Army, April 10, 1890.

Under the heading "Loss of Teeth," he says:

> The condition of the teeth is to be considered solely with reference to the proper mastication of food. If there are not enough in the mouth for this purpose food is swallowed without the necessary preparation, and indigestion with imperfect nutrition and its consequent evils are the result. If several of the teeth are decayed, especially about the crown, it is probable that before the expiration of an enlistment they will be so far destroyed as to render mastication imperfect; hence, men who have lost the front teeth from decay and have many unsound back teeth should be rejected. The loss of front teeth through accident is not cause for rejection, provided a sufficient number of back teeth are sound.
>
> Unless an applicant has at least four sound double teeth, one above and one below each side of the mouth, and so opposed as to serve the purpose of mastication, he should be rejected. Exception may be made by the Adjutant General in the case of a soldier who desires to re-enlist, if a report is made showing his age, physicial condition as to nutrition, and the number and location of the sound teeth.
>
> If the front teeth remain and the double teeth are gone rejection is demanded.
>
> If the loss of natural teeth is supplied by artificial ones, the fact should be noted on the enlistment papers; but the artificial substitutes can not be considered as equivalent in value to the natural teeth or as removing the disability on this account for military service.

The foregoing seems a practical summary of the situation; that is, that the loss of two-thirds or eight of the "back teeth" does not debar entrance, and if "back teeth," in this case, includes the bicuspids, fourteen grinding teeth could be missing and still the applicant be accepted.

These instructions also indicate that artificial teeth are not at all considered a substitute for natural ones. It must be remembered in this connection that there is not much choice in army rations, a point which no doubt is taken into consideration by the examiner.

I believe, however, that there is no question but that in any modern civilized community, the demands of health can better be met by the proper selection of foods and their proper preparation, where the molars may all have been lost, than by the use of artificial substitutes without such care.

The mutilation of one or more good teeth for the purpose of supplying one or two back teeth in the form of a bridge, seems to be a wholly unjustifiable procedure, even if the work always remained good. In a large percentage of cases, however, either the material or the mechanical work goes to pieces in a comparatively short time, or the anchorage teeth are loosened and lost from the excessive work put on them; the anatomy being insufficient to stand the extra strain to which they are subjected.

The present status of civilized justice, and the general acceptance of the golden rule by high minded people in all walks of life, demands of our specialty that we have the knowledge, first, to advise against the loss of teeth; second, when losses must be or have been made, to be sure that substitutes will be of more use than proper instruction as to suitable diets to meet the case. Advice as to diet seems quite necessary, since the average layman's idea of physiology seems to be based on taste or opinion instead of on facts; as to this point, I am afraid some of our physicians and dentists come in for the same criticism. Justice also demands that we be above advising work of any kind for the sake of the paltry dollar.

The dollar, however, is acceptable to us as to others, and from this view point, the teaching of the desirability of perfect natural teeth, with perfect cleanliness and how to keep them so; accompanied by the necessary treatment to produce healthy, aseptic conditions, is much more remunerative, and of much more benefit, as well as of more satisfaction to the patient, than the other plan.

Now while clinical and scientific facts seem to show that man can live without teeth, or with a greatly reduced number, it certainly is most becoming in us to advise strongly against the popular idea of the slight importance of the teeth, and to renew our vigor in efforts to preserve them by preventing decay and disease of the surrounding tissues, thus escaping the trouble of premasticating foods and avoiding the undesirableness of substitutes for teeth, also being spared the chagrin and comical pathos of a toothless smile.

DISCUSSION.

Dr. Eugene S. Talbot, Chicago, said that the dentist believes that it is impossible for a man to live without teeth. Dentistry due to uncleanliness in the insertion of bridges, etc., has as much to do with disease as any other one thing. The collection of germs about an ill-fitting crown is more detrimental to man than no teeth. In the lower vertebrates teeth are necessary not only for masticating, but for prehensile purposes. As man rises in evolution the jaws and teeth are of less importance, until at the present time it is questionable whether teeth are necessary. For years Dr. Talbot has believed that men can get along without teeth. Men have lived to be 90 or 100 years of age and have been without teeth for fifty or sixty years. Methods of preparing food to-day do not require mastication, and the jaws show in the evolution of man a shortening up, decay and loss of the teeth due to disuse, and as evolution advances it will be seen that man can get along without teeth. Loss of the teeth due to interstitial gingivitis is a marked illustration of the fact that the teeth are passing. If man lives long enough he will lose his second teeth. In the snake, elephant, etc., teeth are continuous; they come into the mouth, are used a short time, and then pass and a new set comes in. This condition is illustrated in man by the fact that he has two sets of teeth. The first set is lost and a new one takes its place. Interstitial gingivitis is set up and the alveolar processes are absorbed. In regard to bacteria in the mouth, there is no question that modern dentistry is doing more to injure the teeth and the alimentary canal than any one thing. The filthy condition of the mouth under bridges and crowns is certainly not conducive to health. Crowns should never be placed under the gums—should only extend to the line of the gum margin. Immediately the gold margin passes under the margin of the gum interstitial gingivitis is set up and Nature produces absorption, and in a short time the gum margin will recede.

Dr. Frank L. Platt, San Francisco, said that although it is possible for man to live without teeth, he did not think it a good plan for him to do so. He is heartily opposed to eating prepared food that is easily digested; he is opposed to vegetable food and health food. Patients who have taken up this mode of living are all losing their teeth, show evidence of malnutrition, are anemic and miserable specimens of humanity. Bridge work and crown work properly prepared is unquestionably beneficial. Dr. Platt said that he had lost a bicuspid and molar on each side; about ten or twelve years ago he commenced to suffer from indigestion; he consulted physicians and was placed on different kinds of foods; he had a test meal and the contents of the stomach were examined an hour after. That settled it. He took no more prepared foods. He had some bridgework put in one side, which served all purposes so well that he has never taken time to put it in on the other side. He was cured of his indigestion in a few weeks; having learned to grind his food. He believes that if work is well performed it is beneficial. He does not believe teeth should be left standing alone. A single tooth is better braced by a properly made and fitted bridge; it retains it in position. Teeth were given for a definite purpose, they should be maintained as long as possible, and if any are lost, they should be replaced.

Dr. G. V. I. Brown, Milwaukee, said that the question is not, "Can we live without teeth?" but "Can we live as well without teeth?" The assumption is that because there are bridges and crowns they must necessarily be uncleanly. They often are. These people without teeth have just as many bacteria as those with teeth. A man can get along without legs or arms, but nobody is going to advise him to do so. The surgeons can now remove almost any organ, and yet the patient will live, yet who wants to give up any of his organs? There is a good deal more in this subject than the subject of bacteria. Gingivitis is a natural process taking place in an unnatural way. The animal economy gets along better with a good full complement of teeth than it does without them. The mere fact that the chemist has prepared artificial food that can be digested without mastication is no argument against the use of teeth for masticating purposes. They have been obliged to do this to help out the people without teeth or the people who are too lazy to use their teeth. In a certain sense Nature after a time gets rid of the teeth, but why? Not from a physiologic standpoint at all; it is senile decay. With proper care of our teeth, and of the general health, and by eating proper foods, senile decay can be put off. The natural life of man used to be called sixty years. It is not so now. It is getting to be 90, because we have learned to take better care of our bodies. Mr. Gladstone, Premier of England, was once asked "To what do you attribute your good health and long life?" He replied, "To proper mastication of my food." On being asked what he meant, he said, "I have 32 good teeth, and consequently when I masticate my food, I give every morsel of food that goes into my mouth 32 bites." Dr. Brown expressed his opposition to the idea that we can get along without teeth. We can do it, but with the greatest of care in the preparation of food.

As to the examination of soldiers' teeth, at the Presidio in San Francisco there was a large recruiting camp, and for a time nearly all of the operations performed were on recruits. The regulation required as a minimum 4 teeth that would oppose. Many times examination was made by a physician, and all they did was to look in and see if there were 4 teeth opposing each other. No examination was made as to whether decay was present. These teeth would soon decay after these men went on duty, and indigestion follow; probably these men would be sent home without having done a day's work. Dr. Brown wrote an official letter suggesting that the number of teeth should be raised, that each man should have four opposing molars on either side of his mouth, and greater care exercised in examination of these teeth. This was done, and Dr. Brown thinks that the dental corps did one good thing in raising the standard of the teeth required. Many men invalided home are men with very poor teeth and they have dyspepsia, acute gastritis, acute enteritis, colitis, etc., rendering them useless for service.

Dr. M. I. Schamberg, Philadelphia, said that the time may come when people will be able to get along just as well without teeth. Undoubtedly teeth are deteriorating because of lack of proper mastication. It is also true that the use of the third molar tooth is being gradually lost. The jaws are no longer able to accommodate the teeth, and it is possible that in time to come there will be a peculiar formation of head, in which the upper portion will be very broad to accommodate the immense brain, and tapering to a point at the chin, with an aperture sufficiently large to breathe and to take food without mastication. It should not be allowed to go out that dentists believe teeth are useless organs and can be dispensed with.

Dr. A. E. Baldwin, Chicago, considered that there is nothing more productive of a healthy mouth than the use of the teeth. If a man or woman has been so unfortunate as to loose a portion of these organs which Nature supplied for masticating food, bridges and plates—although but substitutes—are good substitutes and to be commended. Some work is detrimental, not only to the conditions in the mouth, but to the durability and efficiency of the natural teeth that remain. Dr. Baldwin considered it possible that a tooth with a crown extending below the margin of the gum might, usually, with certain possible exceptions, produce interstitial gingivitis, but from over twenty years' experience, having seen a great many teeth that had been crowned, he would hardly think Dr. Talbot's position tenable. In some cases it is absolutely necessary to place the crown below the margin of the gum to cover the destroyed portion of the tooth. Crowns are still doing good service after twenty years. Teeth, health, and all vital principles will be better sustained by using foods which demand mastication. Dr. Baldwin urged that patients be instructed as to what they ought to do with the teeth they have.

Dr. M. L. Rhein, New York City, agreed with Dr. Baldwin in regard to a crown that necessarily goes below the gum line. It is all a question of the technic. Dr. Rhein differed decidedly with Dr. Fletcher's contention against the practicability of artificial substitutes. He also opposed the views presented about the future outcome of the race, saying that he could see nothing in the statistical history of the human form that will agree with that view. There is always a diverging point where Nature steps in and saves the day, generally by cross breeding of the races.

Dr. V. A. Latham, Chicago, said that teeth are not the only things to be considered. Man demands a number of things by which his existence must be carried on. Teeth are only one adjunct of the whole. So soon as teeth are extracted jaws are changed. There is a change in the cusp, and degeneration and a change in the nervous mechanism. Without natural articulation there is an atrophied condition. Recession of the gum follows atrophy. If the tooth is crowned the mouth should be able to take care of that tooth; foreign bodies are encysted in the heart, why should not the gum encyst and take care of that foreign body without being irritated? Dr. Latham expressed her opposition to artificial food.

IS KERATITIS EVER CAUSED BY RHEUMATISM?*

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Rheumatism is a "symptom complex" rather than a definite disease; an infection, though the germ or germs are not agreed on. It must be separated from the joint diseases due to infected wounds, typhoid fever, acute follicular tonsillitis, gonorrhea, scarlatina, dysentery, pneumonia or septic pyemia in this discussion.

For our purpose, rheumatism may be classed as (1) acute articular and (2) indefinite, the first having well-defined symptoms, the second shading off to phenomena hard to characterize, and yet representing a pathologic entity of defective metabolism in fibrous tissue and insufficient elimination of certain waste products.

Clinical experience shows that eliminative agents influence most favorably both rheumatism and associated keratitis. Typical among these are the salicylates, of which Cushny says, "they increase by 12 per cent. the excretion of sulphur; augment the excretion of uric acid from 30 to 100 per cent., and correspondingly increase the leucocytes in the blood. In acute articular rheumatism they have a specific action comparable to quinin in malarial fever."

In rheumatism the fibrous tissues are chiefly attacked. Whether the cement between the fibers and cells be loosened by infection or an excess of lactic acid in the blood admit substances foreign to them is unknown.

Experiments have shown that ligation of the long ciliary arteries of the venæ vorticosæ produces a parenchymatous keratitis, with changes in the posterior epithelium, but observations on the human subject are lacking to indicate their force. There is no *a priori* reason why the cornea should always escape the fate of tendons, endocardium or joints, so the question is pertinent does it escape?

We know that the superficial corneal planes have close relation with the conjunctiva being nourished by an anastomosis of the conjunctival vessels with the superficial ciliary, and enervated by superficial nerves; the middle planes have similar relations with the sclerotic, and the inner with the uveal tract.

As rheumatism may first appear in one valve of the heart and then in the endocardium, so it may appear primarily in the sclera and secondarily in the cornea or primarily in the cornea and secondarily in the sclera; or simultaneously in sclera, cornea, iris, etc.

Whether we regard rheumatism as a germ, a toxin, or other substance foreign to blood or fibrous tissue, it must reach the cornea through the vessels, transversing the sclera, conjunctiva or uveal tract. Unless immune, these are liable to infection before the substance reaches the cornea. Thus is apparent why we see so few cases of primary rheumatic keratitis and so many secondary or simultaneous, and why rheumatic keratitis has so many and varied forms.

The question before us is one of fact: Has the cornea suffered from rheumatism, directly or indirectly?

Most ophthalmologists declare that they have never recognized such keratitis (70 out of 129). Most of the books and medical journals do not even mention the subject. If we knew the specific germ of rheumatism we might extract it from the diseased cornea and joint of a person suffering from rheumatism and by modern methods prove or disprove their identity. Ignorant of such germ, we must answer our question in terms of clinical diagnosis.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

In general the varieties of keratitis from constitutional causes are many, but few if any present so distinct a form as to declare their parentage. The interstitial keratitis of children is generally due to inherited specific disease, but no clinician rests his diagnosis exclusively on the appearance of the cornea; he examines the teeth, the family history, etc. In like manner a case of rheumatic keratitis is established only when syphilis, tuberculosis, struma, local injury or infection be excluded; when it is shown that the patient suffers from rheumatism and possibly that he has had one or more previous attacks associated with keratitis, when the keratitis is non-suppurative, when the pain and photophobia are disproportioned to the corneal lesion, and when the case responds favorably to anti-rheumatic treatment after other treatment has failed.[1] A family history of rheumatism strengthens the diagnosis.

As in other constitutional diseases, there are all degrees of intensity—some so clear that a fool need not err, others so obscure as to puzzle an expert. Hence it is possible that in some cases of keratitis a mild form of rheumatism may be overlooked. This is the more likely because the ophthalmologist rarely sees a case of acute articular rheumatism, and because if a patient with keratitis consults him after convalescence from rheumatism, he pays little attention to the constitutional condition, regarding it outside his sphere. Besides, as the acute forms of disease occasion so much suffering, the patient and the physician easily overlook a slight attack of keratitis—the more so as such attacks are in the deep layers of the cornea.

The following are brief abstracts of personal observations:

Case 1. *Primary keratitis profunda in acute articular rheumatism.*

History.—Feb. 20, 1886, Dr. H. W. Longyear asked me to see Mr. G. W. S., for sudden blindness of his right eye. Mr. S. was a real estate dealer, aged 43, tall, slender and of correct habits. Two weeks previously he was attacked with acute articular rheumatism, involving all the larger limb joints. About a week later he noticed his right eye growing dim, until at my visit he could simply distinguish light from darkness. The pain had not been great nor the circumcorneal injection, only profuse lachrymation.

Examination.—Inspection showed the cornea of whitish gray, most dense at the center and shading to clear cornea ere reaching the limbus; the surface of the cornea was perfectly smooth, and the superficial layers clear, the cloudiness being in the deep layers.

Treatment.—Fearing an iritis, the eye was kept under the influence of atropin and 15 grains of sodium salicylate given every hour till profuse perspiration, and then every two hours. The eye was soaked in hot water for ten minutes before every drop of atropin and the bowels kept free.

Result.—In three weeks the cornea began to clear and in about four months was entirely so. The secondary iridocyclitis left some adhesions. Sixteen years later, with proper correction of refraction, he could see 20/30 and Jaeger No. 1. There has been no return of the disease.

Case 2.—*Primary keratitis interstitialis with necrosis of cornea, in acute articular rheumatism.*

History.—July 29, 1896, Dr. R. A. Jamieson asked me to see Mr. J. D., who had become blind during an attack of acute rheumatism. He was an old soldier, aged 68, of fairly good habits, but illy nourished owing to poverty and successive attacks of acute articular rheumatism. He had suffered great exposure during migrations of his regiment and many attacks of acute rheumatism, each accompanied with more or less blindness, though in the intervals he saw well. At times one eye was attacked, then the other, and occasionally both. His friends and attending physicians had told him that his eye passed from fogginess to a whitish tint, and then with convalescence gradually returned to a normal look. Generally the pain and redness had not been great or had been overshadowed by the greater suffering from the rehumatism.

Course.—In this last attack, for some unknown reason, the right cornea had necrosed, its substance being a pulpy mass on my first visit, which dropped off, leaving the bare iris, bound by adhesions to the lens. The left cornea was in nearly the same condition, a small portion remaining firm. In both the lost cornea was replaced by cicatricial tissue. During this attack there had been little pain or circumcorneal injection, and only watery discharge.

On recovery, Mr. D. sought to have his pension raised from $24 to $72 per month. In presenting his claim to the Pension Department "rheumatic parenchymatous keratitis" was given as the cause of blindness. The application was refused because the department said no such disease was known. Being pushed, it sent experts from Washington to study the case; it had many eye men in Detroit, Cleveland and elsewhere to study it; it followed up his medical history in all the places where he had suffered blind attacks; he was sent before examining boards other than his own. Finally, after an examination extending over three years the pension was granted, and "rheumatic parenchymatous keratitis" has a place in the Pension Office.

Ere making a diagnosis, I had been careful to eliminate syphilis, gonorrhea, tuberculosis and local injury, and to establish the relationship of the recurring attacks of keratitis to the acute articular rheumatism.

Case 3.—*Band-like vascular growth on the cornea in a case of subacute rheumatism.*

History.—July 21, 1904, Dr. Moore of Farmington asked me to see a woman, aged 35, long a sufferer from subacute rheumatism and neurasthenia. Two months previously the left cornea began to cloud in its lower and outer segment.

Examination.—At my visit the cloud was more than one-eighth inch broad and of nearly uniform width from the scleral junction to above the middle of the cornea. The vision was greatly limited, but the pain was considerable, there was slight irritation of the iris and circumcorneal injection. The entire opacity was distinctly raised above the surface of the cornea.

Treatment.—I asked permission to dissect the growth with a knife, but was refused. The treatment was antiseptics, hot water and yellow oxid of mercury applied by massage, and antirheumatics.

Result.—Five months later Dr. Moore reported that the opacity had disappeared, leaving a slight film discernible only on close inspection with oblique illumination.

Case 4.—*Primary keratitis, interstitial, discrete, with subacute rheumatism.*

History.—March 20, 1890, Mrs. W. C. S., aged 28, applied for relief from an irregular interstitial keratitis, plus a small abrasion near the sclerocorneal junction on the inner side of the right cornea. There was moderate conjunctival injection adjacent thereto, much pain and photophobia, all of which had appeared during an attack of subacute rheumatism. Since a child she had suffered from similar attacks of keratitis during recurring attacks of subacute rheumatism, for which she had been treated by the late Dr. G. E. Frothingham of Ann Arbor.

Treatment.—Ordinary tonic and local treatment proving unsatisfactory, antirheumatic was pushed and convalescence rapidly established.

Since then I have observed several similar attacks, more or less severe, all of which readily yielded to antirheumatic management.

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[1] F. Mendel (Munchener Med. Woch.), from an experience of over eight thousand intravenous injections of salicylic acid, says that disappearance of pain proves a doubtful case to be rheumatic, so a diagnosis is cleared up by a single injection.

Case 5.—*Primary marginal keratitis in subacute rheumatism.*

History.—Nov. 20, 1903 Mr. R. McL., a minister, aged 75 applied for relief for a painful eye. For three weeks he had suffered from an attack of subacute rheumatism, and about ten days ago he began to notice an irritation of his left eye, as from a foreign body, a moderate redness of the eyeball, and a whitish spot on the cornea, with abundant discharge of tears. In former rheumatic attacks he had noticed a similar feeling in his eye, which passed away after a time under the use of household remedies; he again resorted to them, but the eye grew worse.

Examination.—There was a shallow crescentic abrasion of the cornea near the upper and inner border, about one-quarter of an inch long and an eighth broad. This was surrounded by a grayish infiltration.

Treatment.—He was treated by hot water, boric acid and dionin, with yellow mercury oxid ointment locally, and large doses of soda salicylate internally. The pain was speedily relieved, and the keratitis rapidly vanished.

Of the first three cases I could find no duplicates in my records; of the last two many duplicates.

In three cases there was a clear history of recurring attacks of keratitis with rheumatism during a period of many years; the keratitis appeared during the rheumatic attack and faded as it declined; all were benefited by anti-rheumatic treatment. All were classed as rheumatic keratitis for the following reasons:

1. They started in the cornea during an attack of rheumatism.
2. Some recurred many times.
3. All other constitutional causes were eliminated.
4. All were non-suppurative.
5. Three were attended with pain and photophobia disproportionate to the corneal lesion.
6. Antirheumatic treatment alone favorably promoted a rapid recovery of either keratitis or rheumatism. In all these five cases the keratitis antedated other involvement of the eye; in two the rheumatism was acute articular; in the others subacute; iritis occurred only in the two profunda cases.

In many people suffering from "indefinite" rheumatism I have observed "Descemetitis associated with iritis;" "interstitial keratitis with scleritis or episcleritis or cyclitis," and have thought rheumatism the cause of all eye lesions. All were most benefited by antirheumatic treatment.

To secure a larger number of clinical observations on the point at issue, the aid of colleagues in every portion of the United States was enlisted by the following queries:

1. Have you seen cases of corneal disease caused by rheumatism?
2. If so, how many? What part of the cornea was attacked?
3. Did the corneitis have any distinctive features?
4. Did any case have more than one attack? If so, how many?
5. Complications observed. If any, what were they?
6. Were the cases male, female, black or white? Their ages, and occupation, if any.
7. What treatment did you find most helpful, and what were the ultimate results?

More or less full answers were received from one hundred and twenty-seven. Sixty-seven replied that they had never seen cases of corneal disease which they could ascribe to rheumatism. Several had seen keratitis which they ascribed to gout. Sixty replied that they had seen one or more cases of keratitis which they believed due to rheumatism. The full text of positive answers accompanies this paper.

The cases of keratitis are divided into three classes, according to the starting point of the lesion. As three reported under two classes, a discrepancy of figures will be noted.

Of primary keratitis in acute articular rheumatism, six observers report one or more cases each.

Of primary keratitis in indefinite rheumatism, twenty-nine observers report one or more cases.

Of secondary keratitis in indefinite rheumatism, twenty-eight had seen one or more cases.

It may be questioned whether the secondary cases should be classed as rheumatic keratitis because either the sclerotic or the uveal tract was first attacked, but it is quite as fair as to call scleritis following a keratitis rheumatic. Without rheumatism there would have been no keratitis in either case, so far as known, the same agencies produced the keratitis, so that the relative time when they attack the cornea or sclerotic does not alter their cause, more than in other parts of the body.

PARTS OF THE CORNEA INVOLVED IN RHEUMATISM.

The outer layers of the cornea are reported primarily involved by nine observers, the inner layers by thirteen, the substantia propria by forty-five. It is quite impossible to determine the actual number of cases included in these reports because some used the term "many cases," others "several cases," or a "few cases," or a "number of cases." If we counted three in each of these indefinite reports, the total number of cases of keratitis caused by rheumatism would exceed one hundred and fifty. The actual number stated was sixty-three. Since the reports were made mostly from memory, the actual number found in case books would be far larger.

In cases of keratitis secondary to scleritis or uveitis the middle or inner layers were always involved and occasionally the outer.

Thus we have the positive testimony of sixty expert observers supporting the proposition that "rheumatism has caused keratitis in most of its non-suppurative varieties"—though all agree that it is a rare complication.

These observers report rheumatic keratitis, giving the following names:

OF THE OUTER LAYERS.	
Superficial erosion	1
Dendriform keratitis	1
Superficial keratitis	5
Marginal keratitis	4
Calcium deposit in cornea	1
Phlyctenular keratitis in aged	1
	13

OF SUBSTANTIA PROPRIA.	
Steamy cornea	2
Interstitial keratitis	8
Diffuse interstitial keratitis	2
Punctate interstitial keratitis	2
Band-like deep seated opacity	1
General haziness of cornea	2
Keratitis profunda (Fuchs)	2
Keratitis profunda (Spicer)	1
Discrete keratitis	1
Fine sandy cornea	1
Kerato-scleritis	15
Parenchymatous keratitis	6
Deep central keratitis	2
Keratitis (indefinite)	1
	46

OF INNER LAYERS.	
Descemetitis	7
	7

TEXT-BOOKS ON RHEUMATIC KERATITIS.

Nearly all text-books and monographs on eye diseases, old and new, fail to mention rheumatic disease of the cornea. In only eight was I able to find the subject mentioned, viz.: Norris and Oliver's "System of Ophthalmology"; Darier's "Ophthalmic Therapeutics";

Posey and Wright's “Diseases of Eye, Ear, Nose and Throat”; Fuchs' “Ophthalmology,” de Schweinitz's “Text-Book on Ophthalmology,” and the works of Mackenzie and Wharton Jones on the eye.

Neuel and Fenton (Norris and Oliver's “System of Ophthalmology”) say (p. 231): “Rheumatism, gout, influenza impaludium, uterine affections and contusions of the cornea are among the rare causes of parenchymatous keratitis” (p. 235). “Different forms of deep interstitial keratitis occur after a chill or attack of acute articular rheumatism” (p. 236). “Descemetitis is caused by syphilis, rheumatism and gonorrhea.” Thus rheumatism (indefinite) is said to cause parenchymatous keratitis or Descemetitis, and acute articular rheumatism causes different forms of deep interstitial keratitis.

Darier (p. 153) describes two cases termed “rheumatic parenchymatous keratitis.” On page 164 it is stated that “there are forms of scleritis, of sclerokeratitis, of keratitis and marginal ulcers of the cornea resulting from the rheumatic diathesis.”

Mackenzie (1855, p. 516,) speaks of an “arthritis corneitis characterized by roughness of the cornea, with haze from interstitial deposits, a bluish-white ring close to the corneal edge and sometimes a slight iritis.”

Wharton Jones (1855, p. 126) says: “Rheumatic parenchymatous keratitis occurs in middle life accompanied by rheumatic characters in rheumatic subjects, pain over the brows and temples, cornea dim and rough on its surface; circumcorneal injection most intense at corneal margin; treatment eliminative and antiseptic.”

Posey and Wright (p. 313) say: “Rheumatism and gout are causes of parenchymatous keratitis in perhaps a very few cases.”

Fuchs (p. 182) describes keratitis profunda thus: “A gray opacity develops in the center of the cornea, in its middle and deep layers and over which the cornea is gray and punctate but not depressed. After several weeks it gradually abates without ulceration. Vessels are few, if any. In rheumatism the pain is violent and the photophobia great. The iris is mildly hyperemic. Lasts from one to two months. Light cases leave clear cornea; severe ones a permanent, diffuse opacity of the cornea. When this disease occurs with intermittent fever or contusions, it is free from pain and is more protracted.”

De Schweinitz (p. 315) describes the rheumatic keratitis of Fuchs, confirming the views stated by personal observations.

Thus the authors in these seven text-books teach the causative relation of rheumatism, to the following forms of keratitis, viz: “Parenchymatous keratitis,” “checkered interstitial keratitis,” “Spicer's keratitis profunda,” “interstitial keratitis with roughened external corneal layers,” “keratitis punctata,” “kerato-iritis,” “Descemetitis.”

MEDICAL JOURNALS ON RHEUMATIC KERATITIS.

A careful search of the medical journals within reach revealed only seven references to keratitis.

Asmus[2] regards as “characteristically rheumatic the cases of corneal disease, near the limbus, causing a porcelain-white color, lying first in the parenchyma with a covering of stippled epithelium. Later a deep defect is found. The sclera is but slightly involved. The affection yields readily to salicylate of soda.

R. Kalish[3] says that “he has often seen striated, more or less checkered keratitis disappear, after failure of usual remedies, by use of antirheumatic remedies and restricted diet.”

F. W. H. Spicer[4] says he has found “a new variety of interstitial keratitis. Of fifty-four cases personally studied, free from any trace of syphilis, three-fourths were associated with alcoholic excess, gout, rheumatism and intestinal sepsis. The average duration of the cases was three months. The condition was a vascular ingrowth with a progressive corneal opacity; in the rest, a conical opacity advancing from periphery to center. The opacity was striated, the lines being slightly uneven, sometimes crossing, and becoming obscured by the advance of the disease. The opacity was either uniform or formed by the union of a number of maculæ and had soft, smooth edges, gray colored. Surface of the cornea was roughened like orange skin—the essential pathologic change being edema of the cornea. Iritis was observed in fourteen cases—no fundus change. He thinks disturbance in the blood supply is the occasion of the disease.”

H. Greef,[5] says: “We must regard interstitial keratitis as some particular anomaly of general metabolism, which may be induced by many different morbid conditions, as syphilis, tuberculosis or rheumatism.” He reports cases of elderly people in whom interstitial keratitis developed in connection with rheumatism. “Leber, Parinaud, Knies, and v. Hippel describe cases in which they placed rheumatism and interstitial keratitis as cause and effect.”

C. Ortale[6] reports the case of a healthy man aged 30 who suffered a kerato-conjunctivitis, with each relapse of an attack of acute rheumatism, which disappeared with the joint symptoms.

Howard F. Hansell[7] reports the following case, which he terms rheumatic keratitis. “A man aged 36, after several days of suffering with dimness of vision, intense photophobia, and excessive lachrymation, exhibited a cornea dotted behind Bowman's membrane with twenty-four small gray discrete spots, scattered throughout its area. Otherwise the cornea was clear, the iris unaffected but the anterior chamber was deeper than normal and the tension plus 1. Eserin relieved the symptoms, the cornea cleared in a few days, to be followed by an acute inflammation of the sclera.”

Jonathan Hutchinson[8] reports “a slow, painless, unsymmetrical keratitis punctata in a woman aged 49, subject to rheumatism since childhood, with a hereditary history of rheumatism, but no evidence of syphilis; also a case of kerato-iritis in a man aged 40 with rheumatic antecedents, coming on during a rheumatic attack.”

Thus contributors to these medical journals give unquestioned evidence of a belief in rheumatism as a cause of various forms of disease in the substantia propria, as “parenchymatous keratitis,” “checkered interstitial keratitis,” “Spicer's keratitis profunda,” “interstitial keratitis,” “keratitis punctata,” “kerato-iritis,” and an “uncomplicated Descemetitis.”

Finally in favor of a rheumatic keratitis we have (1) cases presented in abstract of five different varieties; (2) one or more cases covering about all varieties of keratitis from each of sixty observers—all expert ophthalmologists; (3) authors in seven different standard text-books on ophthalmology; (4) and seven contributors to medical journals.

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[2] Klin. Monat. f. Augen., September, 1903.

[3] Med. News, April 23, 1904.

[4] Lond. Lancet, August 20, 1904, p. 543.

[5] Oph. Review, Vol. XVI, p. 182.

[6] Abstract, Jour. A. M. A., Nov. 14, 1903, p. 1240.

[7] Oph. Record, Vol. XII, p. 523.

[8] Oph. Hosp. Reports, Vol. VII.

While these data seem to establish the existence of a rheumatic keratitis, they also emphasize its rarity. This is as might be expected from the peculiar anatomic structure of the cornea and its relations to adjacent tissues. Besides, any rheumatic affection of the eye is rare. Thos. McCrae[9] reports two hundred and seventy cases of acute articular rheumatism treated at Johns Hopkins Hospital without finding any specific germ, any corneal disease and but one eye affected with iritis. If it be rare that an iritis or scleritis can be traced to rheumatism, much more should we expect to find keratitis rare.

No especial form of keratitis can be called rheumatic, as under changing conditions, in different persons, with varied intensity of the disease, it may assume any form. In general the substantia propria is most frequently affected, as is shown by clinical reports.

There is ground to hope that a keener study by all ophthalmologists may reveal a rheumatic origin for some cases of keratitis now classed as "unknown," and so supply the key for more successful treatment.

APPENDIX: OBSERVATIONS OF LIVING OPHTHALMOLOGISTS ON THE EXISTENCE OF RHEUMATIC KERATITIS.

PRIMARY KERATITIS IN ACUTE RHEUMATISM.

G. F. Suker, Chicago: Yes, one case; middle aged man in whom each cornea would become hazy, with apparent loss of luster, whenever he had an attack of so-called inflammatory rheumatism. His vision was very hazy; at the same time the conjunctivæ were injected, photophobia, lachrymation marked. This haziness was limited to the superficial layers of the cornea, and when he was free from rheumatism, vision was normal. He had two such attacks within about three years. The salicin internally and sodium salicyl (gr. x to oz. i) locally with heat seemed to do the most good. The routine local and constitutional treatment was also carried out. The cornea looked not unlike the steamy "glaucoma cornea": the tension was always normal; iris reaction normal; a slight conjunctival discharge accompanied this. This eye condition lasted about two weeks—the climax was reached in about four days.

F. Carrow, Detroit: Yes; a number. The cases gradually involved the entire corneal structure. The features presented were those of rather mild interstitial keratitis, an infiltration of the corneal structure, without ulceration; number of attacks not known. A tendency to iritis of a mild character, the formation of posterior adhesions without a high inflammatory accompaniment. Asiatics (Chinese) and negroes. Age and occupation not remembered; antirheumatic treatment; large doses of sodium salicylate, salicylic acid, etc. Locally atropin. The results varied, in different amounts of corneal opacity or infiltration. I am sure I have been able to distinguish between ordinary interstitial keratitis, the result so frequently seen in inherited syphilis. I have recently had a case, a young woman, in which all the symptoms of an acute rheumatic affection of the joints accompanied the corneal trouble.

A. W. Calhoun, Atlanta, Ga.: I have seen many cases of mild interstitial keratitis which I have thought were directly due to rheumatism, though behind the rheumatism there may have been some remote cause. In these patients, I observed that each fresh attack of the rheumatism was accompanied by a fresh mild attack of the keratitis, disappearing with the cause. In all of them the keratitis was treated in the usual way, and with antirheumatic remedies, and in all, with good results.

A. E. Bulson, Jackson, Mich.: I have not had a case of purely "keratitis rheumatica," but several with rheumatic diathesis and suffering with the disease at the time of the corneal attack. Two cases at present, in brothers, attacked within a month of each other. These cases were both taken with la grippe, or a severe cold, followed in about ten days with acute articular rheumatism, and also about this time a marked blurring of the vision of one eye, extending rapidly to hyperemia, photophobia, and severe pain. I have also at the present time a case of "keratitis punctata," with rheumatic complications. Just how much these cases are rheumatic or specific I do not know: I am treating these cases with a view of clearing up the rheumatic condition by giving anti-rheumatics. The local treatment consists of application of bandage, colored glasses and atropia to maximum dilatation. Hot fomentations of sat. sol. of acid boric are applied at intervals during the twenty-four hours. I continue this during the inflammatory stage, and for clearing opacity I am at present using 5 per cent. of dionin. I find this latter drug to act most admirably for this purpose. Every case I have had with rheumatic complications have been interstitial. Some were punctate, and subsequently diffuse. One case the opacity had little points of depression.

N. M. Black, Milwaukee, Wis.: Have seen one case; central part of cornea attacked; superficial central erosion, staining slightly with fluorescin, surrounded by an area of interstitial deposit with an intervening area of clear cornea. He had two attacks, complicated with iritis (or this corneal condition complicated the iritis) with almost circular synechia posterior. It occurred in a white soldier. Sodium salicylate was given in 20 grain doses each two hours till physiologic limit; hot compresses; atrop. 1 per cent.; dionin powder and subconjunctival injections once or twice per week. Four weeks' treatment did not fully clear the interstitial area, the synechiæ were loosened in upper and outer and lower and inner part of iris; pain relieved immediately after dionin injection and did not return; patient a hard drinker.

F. B. Eaton, San Francisco: Yes, the cornea steamy; with usual infiltrations from episcleritis; have seen many cases of iritis with acute articular rheumatism complicating keratitis—possibly one case of gonorrheal rheumatism. Treatment was salicylate of soda in keratitis with acute articular rheumatism. I can not state that I have ever seen an uncomplicated case of rheumatic disease of the cornea—always the episcleral or scleral tissues were involved.

SECONDARY KERATITIS IN INDEFINITE RHEUMATISM.

B. L. Milliken, Cleveland, O.: I do not recall definitely any cases of inflammation of the cornea, pure and simple, which I am sure was due to rheumatism. I have a case now under my care of iritis with punctate keratitis, marked in character, involving the internal lower third of the cornea, which yielded very promptly to large doses of salicylate of sodium. This was a woman, aged 57, a teacher. Ten years ago she had an attack of herpes zoster on that same side with some choroidal trouble. This attack began apparently as an iritis, with inflammation involving the cornea and not being primarily a keratitis.

S. G. Dabney, Louisville, Ky.: Sclero-keratitis; yes, a good many. Periphery of the cornea extending near center. Characterized by great obstinacy, moderate pain, and tendency to iritis. Some of the cases had several attacks. Both male and female—white—between 20 and 40. Usual antirheumatics with laxatives internally; heat and atropin locally seemed to act well. I do not think any case of corneal disease pure and simple, without involvement of the sclera, caused by rheumatism, has come under my notice.

P. A. Callan, New York City: I can not say that I ever had a case of keratitis pure and simple due to rheumatism, but I not infrequently see cases of scleritis which involve the cornea at the limbus.

S. B. St. John, Hartford, Conn.: I have never seen a case of purely corneal disease caused by rheumatism, but a number of cases in which an episcleritis caused by rheumatism has involved the cornea—sclero-keratitis.

J. H. Thompson, Kansas City, Mo.: Have seen a limited area of keratitis neighboring a patch of rheumatic episcleritis, but never a case of keratitis of rheumatic origin.

Miles Standish, Boston: I have never attributed any corneal conditions to rheumatism except such secondary disturbances as sometimes happen in cases of episcleritis and scleritis due to rheumatic or gouty origin.

David Webster, New York City: The only form of corneal disease that I can recall due to rheumatism, is that which so often complicates episcleritis, or scleritis, and spoken of as sclerokeratitis. I have seen a good many such cases; impossible for me to tell how many. The disease is prone to recur. It generally occurs in adults. I have generally followed the treatment recommended in the text-books, and have found such cases tedious and resulting in permanently impairing vision.

G. C. Harlan, Philadelphia: Marginal keratitis, in connection with conjunctivitis and episcleritis—rheumatic—gouty. Marginal, vascular, small points of ulceration. Four or five attacks. Sometimes accompanied by symptoms of influenza. White, female. Sod. salicyl., etc. Atrop., cocain, and adrenalin locally. Hot stupes. In another case, very frequent attacks recurring for years, sometimes in one eye and at other times in the other. Intense ciliary zone; patches of interstitial corneal opacity and general haziness; once or twice delicate iris synechiæ; violent attack of sciatica. No syphilis, but some gonorrhea in early life. Father had gout. Salicylates, mercury, iodid, pilocarpin, hot stupes and atropia. Recovery with slight opacity; good vision; possibly gout.

T. Y. Sutphen, Newark, N.. J.: I only recall the hazy cornea or rheumatic iritis with Descemetitis.

H. F. Hansell, Philadelphia: I do not remember that I have ever seen a case of keratitis—primary—that I could attribute to rheumatism. A bad case of "sclerosing keratitis" involving both eyes and leading to extensive changes in the curve and transparency of the cornea, occurring in a young woman might have been due to rheumatism. Numerous cases, familiar to us all, of rheumatic iritis with deposits in Descemet's membrane and subsequent keratitis, are of course met with.

J. A. White, Richmond, Va.: I have never seen a case of keratitis that I could positively state was due to rheumatic or gouty causes, but I have had keratitis in rheumatic patients that was very intractable to treatment, especially Descemetitis. I have always thought that a rheumatic diathesis had something to do with this trouble, just as it is supposed to have something to do with iritis, because if we can have pathologic changes in the iris due to rheumatism we can also have it in this part of the cornea, because it is a practical continuation of the uveal layer of the eye.

C. W. Hawley, Chicago: I have had several cases, but can not give definite symptoms, etc.

H. Friedenwald, Baltimore: Barring the cases of interstitial keratitis, sclerotizing keratitis, etc., which were in an indefinite manner ascribed to "chronic rheumatic diathesis," I have had no experience which leads me to think that rheumatism (i. e., acute articular rheumatism) has any bearing on corneal disease.

J. H. Buckner, Cincinnati: Only when associated with iritis, more than one attack; iritis has been present in every case, I now remember; female; white. Treatment, sodium salicylate and colchicum; locally atropin, four-grain solution, three or four times daily. I only recall one case in which keratitis existed central over the pupil associated with rheumatic iritis. The case was a sister of charity about 40 years of age. I may have had other cases, but have no record of them.

William Cheatham, Louisville, Ky.: Yes, I am rarely without one or two cases of keratitis with rheumatism on hand. They are parenchymatous, with scleritis or secondary to it. Usually peripheral, it extends as far as the center of cornea. It tends to relapse. It is complicated by involvement of the muscular sheaths or Tenon's capsule, and rheumatism in other parts of the body. Patients were mostly females from 15 to 25 years. Local treatment, atropin and subconjunctival injections and antirheumatics. Treatment at mineral springs has proved helpful.

S. Theobald, Baltimore: The cases of keratitis probably dependent on rheumatic diathesis, that I recall, were of the "profunda type," and usually were not examples of pure keratitis, but rather of "sclero-keratitis," the more intense inflammtaory changes being magnified. I have observed recurrent attacks. There was little tendency to ulceration. The attacks were obstinate, and permanent corneal opacities were not infrequently left. Potass. iodid., iodid of iron and sodium salicylate, with atropin locally, were the remedies which I have found most useful. My impression is that the majority of cases were white women.

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[9] Journ. A. M. A., January 24, 1903.

H. D. Bruns, New Orleans: Only one case of rheumatic episcleritis, with usual corneal opacities opposite the points of scleral infiltration. These areas seem to undergo sclerosis. Permanent nebulæ were left, which greatly impaired vision.

J. L. Thompson, Indianapolis: I have had no case which I could call rheumatic disease of the cornea. I have had many cases in women who have scleritis extending subsequently well over the outer margin of the cornea, who have been troubled with rheumatism, and have sometimes benefited them with iodid and the salicylates: have often had to make an iridectomy, and not infrequently had to enucleate the eyeball.

E. A. Shumway, Philadelphia: I have seen no primary lesion of the cornea which I could attribute to rheumatism. I have seen several cases of so-called sclerotizing keratitis, secondary to episcleritis, in which the etiology pointed to rheumatism.

Charles E. Rider, Rochester, N. Y.: For many years I was in position to know my father's practice and opinion, and I think he would agree with me that with the exception of the corneal lesion of advanced scleritis, no cases of corneal disease from rheumatism are observed hereabouts. Under this head might be considered the corneal congestion, which, I think, I have observed, rarely, namely, after a serous iritis which at times I know is of rheumatic origin; the deposit on Descemet's membrane does not seem to be completely absorbed, or, absorbing leaves the tissue somewhat hazy, suggesting structural changes in the cornea itself, after being the resting place of the exudate from the posterior chamber. I have observed this a long time after the attack.

A. E. Prince, Springfield, Ill.: I have had frequent cases of rheumatic iritis with corneal involvement, but nothing I regard as specific rheumatic keratitis *per se*.

Eugene Smith, Detroit: I have only seen corneal disease of a supposed rheumatic character as secondary to episcleritis or scleritis, and in the form of leucoma of the periphery.

R. J. McKay, Wilmington, Del.: Have seen cases of iritis complicated with corneal disease; used the mixed treatment with satisfactory results.

F. Buller, Montreal, Canada: I look on so-called sclero-keratitis as due to some constitutional condition of rheumatism or strumous diastasis in the same individual in all or nearly all such cases. Further than this, I have not seen and do not know of any form of inflammation involving the cornea which can positively be traced to rheumatism as a constitutional cause.

A. J. Erwin, Mansfield, O.: Have no recollection of any case of corneitis which I thought due to rheumatism, except as a complication of rheumatic iritis or scleritis.

H. V. Würdemann, Milwaukee, Wis.: The part of the cornea attacked is the periphery, usually many attacks, only seen as complication of scleritis or episcleritis. Patients, white, males and females, thirty-five to sixty years old; sodium salicylate, oil wintergreen: diet, mineral waters. general and local massage. Locally atropin, dionin, sodium chlorid by subconjunctival injections, were the most helpful treatment.

PRIMARY KERATITIS IN INDEFINITE RHEUMATISM.

C. A. Veasey, Philadelphia: I have seen a few cases of interstitial keratitis that gave only rheumatic histories, and that recovered under antirheumatic remedies, that I have always believed to have been produced by that poison; but of course I realize that it is impossible to state positively that this is true. Excepting the cases of interstitial keratitis referred to, I can only recall one other corneal affection thought to be due to rheumatism, and that was a case greatly resembling malignant growth, in a middle-aged woman, which, for a time, it was thought would have to be operated on, but which finally cleared under antirheumatic remedies.

C. M. Culver, Albany, N. Y.: Yes; can not give figures; not very many; different parts; apt to be Descemet's membrane; a tree-like form of inflammation: several attacks—can't give figures, several; usual symptoms of rheumatism; males and females; white, thirty to fifty. I recall an engineer, a towman and a lawyer. Baths, pilocarpin, atropin and general treatment of rheumatism.

E. W. Bartlett, Milwaukee, Wis.: I have seen six or more cases of corneal disease occurring with rheumatism. These showed nothing different from other cases in bad health. Male, white. Atropin and a bandage. Treatment for rheumatism was followed chiefly.

H. B. Ellis, Los Angeles, Cal.: I have had but one case which I can place at the present time, that might come under your query. A boy of 17 came to me two years ago with slight haziness of the cornea, which in a few days developed into a marked case of interstitial keratitis. I have known the father and mother for twenty years, and they are both healthy robust people and give absolutely no specific history, and the boy has no marks of inherited trouble, but he did not have, prior to my seeing him, a mild attack of muscular rheumatism and has been bothered some ever since, so that he has gone to mud baths two or three times in the past year. Both corneæ are still very cloudy. Rheumatism was the only thing that I could find as a causative factor in this case.

A. Barkan, San Francisco: Yes, I have seen rheumatism cause keratitis in three cases characterized by a band-like brown, deep-seated opacity along the horizontal meridian. Antirheumatic treatment.

D. E. Welsh, Grand Rapids, Mich.: I have seen a number of cases of keratitis caused by rheumatism; not localized, but general; characterized by a general haziness of the cornea, followed by slight ulcerations of the cornea, several in number; when present, severe pain, photophobia. Several recurring attacks. No complications, except episcleral involvement and association with myalgic pain. Females, white. Large doses of soda salicylate and potass. iodid: iodosyl 3 per cent. ungt. I attribute these to rheumatic diathesis, viz., corneal haziness, pain, photophobia and lachrymation: slight ulceration at different points of the cornea away from sclero corneal junction: pannus would develop, later a severe episcleritis in conjunction with a severe myalgia confined more especially to the superior extremities.

Albert E. Bulson, Jr., Fort Wayne, Ind.: For some time I have recognized a peculiar form of corneal disturbance which has been benefited by antirheumatic treatment. Most of the cases exhibited a nebulous infiltration of interstitial character. There was no marked vascular disturbance. Rheumatism was suspected from soreness of the extrinsic eye muscles on movement of the eyeball. This class of cases were happily treated by large doses of sodium salicylate. In these cases other local or constitutional causes were eliminated. I have also seen corneal disease associated with iritis, scleritis and episcleritis, but am not sure whether this was due to the rheumatism.

M. D. Stevenson, Akron, Ohio: I can recall five cases of corneal disease caused by rheumatism. The superficial part of the cornea was involved and associated with scleritis or episcleritis, chronic in course, occurring in persons with rheumatic history. One case had two attacks and one iritis. Treatment was large doses of sodium salicylate, with large doses of water, and dry heat locally.

W. Mittendorf, New York: Yes, I have seen cases of corneal disease caused by rheumatism; usually the superficial layers were attacked; characteristic features were its being more or less superficial and frequently vascular; several attacks, usually young adults; treatment salicylates internally and usual local medication. N. B.—These cases differ entirely from those known as punctate keratitis, which are attributed to rheumatism.

F. C. Heath, Indianapolis: Have seen cases, but can only distinctly recall one. The superficial layers were involved, one eye central and the other peripheral. The keratitis, much like phlyctenular ulcers, but rather deeper and covered more surface than the average ulcer of that form. The case had four attacks, and was complicated with blepharitis. Male, white, aged 55, editorial writer on a daily newspaper. Sodium salicylate internally; atropin and yellow oxid mercury locally; results, a slight scar, central, dimming vision of right eye. I have had a recent case of scleritis (at first episcleritis) rather severe and protracted with corneal infiltrations that temporarily clouded the vision a great deal, but ultimately cleared up under salicylates internally, and atropin and hot applications locally.

L. Stricker, Cincinnati: I have seen two cases of corneal disease caused by rheumatism. There was superficial denudation. Punctate denudation of the epithelium, and exceedingly profuse; more or less scleral corneal injection, great pain and photophobia. Have observed four attacks in same case. Complicated with cyclitis and irido-cyclitis; white, male and female. Treatment, soda salicylate; recovery perfect.

G. E. de Schweinitz, Philadelphia: Certainly, I have seen a number of cases of corneal disease attributed to rheumatism. I have a description of them, especially the variety of keratitis profunda, which was first described by Fuchs, in the last edition of my text-book, page 315, and it is my experience that these cases have always appeared either as a central parenchymatous infiltration, or sometimes as a circumscribed interstitial keratitis. I have also seen a few cases of keratitis profunda of the type described by W. T. Holmes Spicer in the January number of the Ophthalmic Review. In a number of his cases rheumatism, or rheumatic pain at least, was present in the patients. Some of my cases were associated with iritis, but otherwise I have not seen any complications. I do not know how many cases I have seen, but quite a number. One of the most marked cases that I have seen was in a prominent physician of this city. Regulation of diet, salicylates and other antirheumatic remedies, atropin, and in recent times dionin, have served me the best purpose. It seems to me that the term rheumatism is a very vague one, and I am not sure that it would be wise to adopt the term rheumatic keratitis, but certainly it is safe to say that very considerable number of cases of keratitis profunda, both general and circumscribed, occur in persons whose chief constitutional disorder appears to be some type of rheumatism.

D. B. Cornell, Saginaw, Mich.: Yes, I have seen cases of keratitis from rheumatism. They involved the parenchyma of the cornea, and were more circumscribed than when due to syphilis. One case had two attacks. The complications were like those observed in other constitutional diseases. Patients were both sexes, white, and ranged from 12 to 30 years of age. The constitutional treatment was soda salicylate; salicin, potatss. iodid and vin colchici.

Chas. S. Bull, New York: Yes, I have seen keratitis caused by rheumatism. but I do not know how many cases. The parenchyma was involved. Most marked characteristics were the extreme chronicity of the trouble and the tendency to relapse. The case had two or more attacks and were complicated with iritis. Cases were both sexes, white, most over thirty years of age. Local treatment was atropin, hot fomentations, cocain, dark glasses. Persistent use of alkaline remedies internally, especially sodium salicylate. These cases of mine were observed in the course of rheumatic attacks. They were obstinate in resisting treatment and relapsed more than once. The majority were cured after persistent treatment, leaving a clear cornea, though in a number of them the posterior synechia remained.

E. E. Gibbons, Baltimore: Yes I have seen eight or ten cases of keratitis caused by rheumatism: attacked the deep layers of the substantia propria. The infiltrate seemed to be punctate and discrete and the subjective symptoms severe for the amount of cornea involved. The opacities usually affect the central portions of the cornea. One had two attacks in each eye. Iritis and scleritis were observed as complications. All but two were white men. The final results were good; all treated by soda salicylate and pilocarpin sweats with usual local treatment.

E. C. Ellett, Memphis, Tenn.; I have seen one case of corneal disease that I and another ophthalmologist supposed to be due to rheumatism as it occurred in a rheumatic boy, aged 20. He had two attacks in less than a year and has had no more. The attack was acute: the cornea showed a fine sandy appearance, without opacity, and the process ran its course in a week, leaving no permanent results. He was treated with atropin, hot compresses and lithia. I am not sure that this was rheumatic, but I have never seen any other corneal disease that I suspected of being of this character.

L. A. W. Alleman, Brooklyn: If I understand you as asking for cases of corneal disease due to true rheumatism I must say "No." But if you have in mind those ill-defined disturbances of nutrition which are often attended by pain and soreness in the joints and muscles, I have seen many cases. They are, as a rule, marginal keratitis, with much pain and photophobia, subject to frequent relapses, not as a rule attended with serious complications, and best controlled by general antirheumatic treatment, regulation of diet, etc. Eserin has given the best results locally.

L. H. Taylor, Wilkesbarre, Pa.; At the time I received your letter I was called to see a patient at her home, with a severe suppurating ulcer of the cornea. The patient could not come to my office because she was in bed with rheumatism. She had in the left eye an annular ulcer extending entirely around the edge of the cornea beginning at the sclero-corneal margin. I have seen a number of cases of corneal trouble in people who were at the same time suffering with rheumatism, but I could not say that the rheumatism caused the keratitis. Last summer I attended a physician who had a bad case of sloughing cornea. He also had rheumatism, but I did not regard the latter as the cause of the former.

C. A. Oliver, Philadelphia: Yes, barometric in exacerbation; much adjacent swelling; the periphery of the cornea attacked; young, white, adult, male. Treatment: salicylates and heat.

S. C. Ayers, Cincinnati: Yes, peripheral portion, near margin. Generally sluggish, indolent, more than one. Pain and photophobia. White; females, generally 30 to 40. Treatment: scraping floor of ulcer and using 25 per cent. argyrol, atropin when necessary.

W. H. Wilmer, Washington, D. C.: Yes. In a few cases superficial ulcers near margin. Most cases substantia propria. In some cases ring-like involvements of cornea; in most cases a seeming extension of the scleritis into the interstitial portion of the cornea. Several attacks; complications; scleritis, iritis, cyclitis, uveitis. White; black; male; female. Treatment: internally, potass. iodid. and salicylate of lithia, pilocarpin injected into the temple, salicyl. of lithia subconjunctivally injected. Hot applications. Good results. In my experience, rheumatic diseases of the cornea are rare, but do exist.

E. E. Jack, Boston: Yes (?), near limbus; lower half; small roundish, shallow ulceration, infiltrated; two to three attacks. Male, 40 years, physician. Treatment, pilocarpin and cocain only treatment tried. Well each attack in two or three days. The doctor, after two attacks, decided that the attacks came when he had too much uric acid and always got better with an elimination of this. He had other symptoms of this condition. I put a (?) after the first answer, as I do not know whether you wish to class this as rheumatic.

Frank C. Todd, Minneapolis: Yes, I believe I have seen keratitis caused by rheumatism. I have had cases in which the epithelium has been involved, which, I believe, were of rheumatic origin. Any portion of the cornea may be involved, but I regard as most characteristic that form which occurs in conjunction with and as a portion of uveitis in which the posterior limiting membrane is involved. Such cases are subject to recurrences. Cases involving the substantia propria and endothelium I have considered rheumatic. Both male and female, white. Treatment, large doses of soda salicylate, following Gifford's method.

E. E. Holt, Portland, Me.; Yes, a number. Corneal substance proper attacked. In some instances not much of any acute inflammation present. Several attacks, leaving opacities; both male and female. Antirheumatic treatment used, salicylate of soda, mercury, iodids, arsenic, hot baths, massage, electricity.

J. M. Ray, Louisville, Ky.: I have for a number of years classed many of the cases of scleritis with frequent relapses that eventually invade the cornea, producing the so-called sclero-keratitis as due to rheumatism. I think I have seen this condition start primarily in the clear cornea close to the periphery and follow the same clinical course as those that had their origin, primarily, in the sclera. I can find in my records one case of this kind, in which, at the interval of three years, each eye was separately involved. The first eye was iridectomized by a colleague. The second eye was improved by subconjunctival injections. The latter treatment, along with antirheumatics, is, I believe, the best treatment of sclero-keratitis. I am sure I have seen several cases of the kind I describe, but can not find their records.

S. D. Risley, Philadelphia: I am at a loss how to answer. While I have many cases of scleritis and episcleritis, apparently due to the rheumatic diathesis, I can not recall a single instance of corneal disease which I ascribed to rheumatism. The only exception to this statement may be the case of a man, at least seventy years of age, from whose cornea, at the site usually occupied by the arcus senilis, I scraped a large deposit of a chalk-like material, which chemically gave the calcium reaction.

Hiram Woods, Baltimore: I think there is a corneal disease caused by rheumatism. The characteristic features are small central area of deep infiltration. In one case only a small spot was observed down and out. In the others all the cornea eventually clouded. Only one case had more than one attack. The cases were white, two female, one male, aged 22, 18 and 15. No joint involvement in any case. All had a rheumatic history. Salicylate of soda controlled the inflammation. I have seen two or three cases in children of deep keratitis (syphilis and tuberculosis were definitely excluded). Rheumatic and gouty condition were family traits. Soda salicylate was given because of its ability to control the inflammation and the family history. There was benefit from this treatment, but the cases were obstinate; one was complicated by secondary iritis-cyclitis; at least the central lesion antedated the other. The entire cornea was involved.

Robert W. Miller, Los Angeles, Cal.: I have observed cases in which the rheumatic and gouty constitutions of patients suffering from keratitis, occupying a causative relation and in some instances militating strongly against recovery. The forms in which I have noted this relation has been the deep central keratitis and phlyctenular keratitis when the latter occurs in adults or the middle-aged.

91 Lafayette Ave.

DISCUSSION.

Dr. W. H. Snyder, Toledo, Ohio, reported two cases and said that he had never been satisfied of the existence of the condition until he saw these two cases. He thought that these could be safely classified as due to the constitutional effect of rheumatism on the cornea.

Case 1.—T. D., aged 7 years, height 4 feet 1 inch, weight 46 pounds, was seen in consultation with another ophthalmologist because of the stubbornness of a corneal inflammation which had resisted all treatment. He has had eye trouble for one year. Eyes very suddenly get very red and inflamed. Pain through the day very much. First one is inflamed and then the other. Three weeks ago the left eye got very red and inflamed. Vision, right, 20/40; left, light perception. The conjunctiva of the right eye is very red and inflamed on the whole nasal side of the globe. The cornea is normal at present and there is no pain. On the left side the whole eye is very red, swollen and painful. On the lower, outer half of the cornea is a large disc of opacity covering the pupil, which seems opaque through all the layers of the cornea. Photophobia is moderate. His physical condition is anemic, poor; eats meat only; subject to diarrhea. Had inflammatory rheumatism two years ago. Pulse sitting is 90; standing, 110; after moderate exercise, 120. Heart sounds show mitral insufficiency. Anti-rheumatic remedies added to his old treatment, with attention to diet brought about a quick and permanent recovery. His physician had been unable to reduce pain or redness at all until the latter treatment was added.

Case 2.—C. S., aged 17, very small for his age and thin. Three weeks before his left eye had suddenly become red and inflamed, which attacks he had had many times in the last two years. No treatment had been of any service. Vision: Right, 20/20; left, poor light perception. All of the cornea of his left eye was hazy and through all the layers a disc of marked opacity in the center of the cornea. Outside of this the cornea was covered with white dots looking like pinpricks in gelatin. The whole cornea became steamy first; in twenty-four hours this condition came on. The disc seems like chalk embedded in the cornea. He had been subject to inflammatory rheumatism since a child and heart was affected (mitral murmurs). No treatment had been of avail. From his prescriptions one of atropin was chosen and anti-rheumatic treatment added and in four days the redness had all left the eye. He returned to work at once, being very poor, and has had two or three attacks since, all controlled, however, by the same treatment.

Dr. Leartus Connor said that as far back as the time of Wharton Jones the influence of rheumatism was much more prominent than at the present time and their observations were no doubt as good as those of the present. Dr. Connor said that he had overlooked many of these cases in days gone by and he thought others might have done the same. Dr. Bull of New York, reports a number of cases that he believed due to rheumatism, while Dr. Knapp, of the same city, had never seen any, showing, perhaps, that one man's mind was on the subject and the other's was not. Such brilliant results come from operations and local treatment that the cause of some of these conditions is apt to be overlooked.

BLASTING EYE INJURIES.*

JOHN A. DONOVAN, M.D.
BUTTE, MONT.

"Frenzied Finance," pro and con, of late has so filled the air that to many the question arises: Does mining really exist? With all her disadvantages, Butte still demonstrates mining as a reality. With her annual production of 250,000,000 pounds of copper, not to mention her silver and gold, her many miles of underground tunnels extending nearly half a mile below the surface, and her thousands of miners using tons of powder daily, Butte offers for our study a subject worthy of consideration.

Eissler[1] says:

> In no department of human industry has more rapid progress been made of late years than in explosives. The ablest chemists and the best engineers have found in the study of

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Handbook on Modern Explosives.

explosives a fruitful field, and the results of their labors are to be seen in the perfected explosives of to-day—explosives which are marvels of chemical perfection; which are so modified and varied in their method of action as to be adapted to all varieties of practical work; and which, with all their enormous power stored up in their particles, are so completely under control that they may be handled freely in any class of work with perfect safety, when in the hands of careful and experienced operators.

Blasting is becoming so common, owing to construction of underground roads, canals, etc., that I will describe briefly how accidents occur. A mine is entered, probably by a perpendicular shaft; from this, say at each 100 feet, runs a tunnel of sufficient size for two men to work comfortably in without stooping. From these various other tunnels and drifts are run. All are extended by drilling usually five shot holes, one near each corner and one in the center. In these holes, giant powder is put, say one and one-half or more sticks, a stick or cartridge being approximately one inch in diameter by eight inches long, weighing about a pound and containing, say, 40 per cent. nitroglycerin mixed in some absorbent, chemical, mechanical, or both. The percentage may vary, according to the nature of the work to be done. The first half stick, more or less, is packed in the bottom with a wooden tamping stick. Then a detonating copper cap, containing a very high explosive and being quite sensitive, is attached to a long fuse and fastened; this is then pushed into the end of the last cartridge and fastened. The cap being very easily exploded, this piece is pushed in with much care. All then is snugly packed and tamped. Each hole is loaded in like manner; each has a long fuse attached, which burns at the rate of about 2 feet a minute. These fuses are lit with a candle. When all are ignited, the longest one first and the rest in like order, the men run away, count the explosions, then return.

In selecting a powder for safety it should respond to the following conditions: Safety against fire and high temperatures; against friction, jars and shocks; against percussion, concussion and tamping; against leakage or liquefaction.

CAUSES OF ACCIDENT.

1. Careless handling of powder; it may drop or catch fire from candle or pipe; it may or may not explode. Thawing powder too near a fire; keeping it too near electric conductor terminals, etc.
2. Carelessly packing it with a jam into the hole.
3. Packing with a metal tamping rod instead of with wood, the iron in contact with the rock causing sparks.
4. Carelessness with the caps, which are highly explosive—cigar ashes, hot candle grease, or a little jar or concussion may explode the box.
5. Fuse cut too short or the short one lit first by mistake or an unusual delay in lighting one after some have been lit.
6. Error in counting blasts and man returning before last has exploded.
7. Missed hole—one in which fuse burned but powder did not explode, and the new men coming on shift unknowingly pick into it, causing an explosion.
8. Faulty or frozen powder—several pieces in a hole and some fail to explode, the pick later sets it off. At the present time, a patient is under my care who lost one eye from this cause. Many miners deny the possibility of such an accident, but it does occur.
9. Caps left where children find and explode them accidentally or otherwise. This is the most frequent cause of children's injuries. It is probably with these cases that the oculist has most to deal.

With all the crimes of corporations, these accidents can seldom be placed at their door, but are, with few exceptions, due to carelessness, which too often is not the direct fault of the victim, but of his fellow-workmen. Be it said to their credit, however, in the handling of tons of powder and among thousands of men, often many weeks may pass without a serious accident from this cause.

This paper refers especially to high explosives, such as nitroglycerin, which have a shattering effect, thus being much more dangerous to the eye than the low explosives, such as gunpowder, which have a rendering effect and are more generally used in coal mining and softer work.

THE IMMEDIATE EFFECTS.

One man may be blown to pieces and the other left living but literally filled with rock; in any event, there has probably been much damage done. He is first treated by the mining surgeon, who in many cases despairs of life. The grosser injuries are dressed and he is, or should be, put to bed till he recovers from the shock. By this time the eyes are so swollen a thorough examination is impossible. Here I will caution those who see these cases months later to remember this description when they criticise the man who first attended for his neglect of the case. Such criticism occurs too frequently and great injustice is done the local surgeon, who probably handled the patient in such circumstances better than his critic could have done. If it were not for legal complications that may arise, when the injury is so extensive as to make saving the eye impossible, enucleations should be done as soon as patients condition permits. Since we all see eyes with good sight where enucleation has been advised, however, it should never be done early, except when no possibility of a doubt exists.

Every piece of rock easily removed should be taken out at once, but, as a rule, when there are many, the smaller pieces not easily distinguished can be removed as the days go by, as each becomes manifest. It is safer to leave them alone than at this time to set up the reaction sure to follow the prolonged operation necessary to remove them all. Early and frequent use of atropin, unless contraindicated, should not be neglected. Because a complete perforation exists, a foreign body is not necessarily in the eye; finding no perforation, however, does not always exclude the possibility of its existence.

Case 1.—A boy, aged 10 years, exploded a cap with a stone. I removed several pieces of brass from the cornea and found the sclera completely perforated. A probe entered the vitreous then opaque; in three days, the vitreous was clear; the opthalmoscope showed a black streak in from the wound about 5 mm. long; otherwise no spots. I entered the wound with iris forceps, using the ophthalmoscope, and caught the body. I extracted it and found it a thread of retina driven in. Three years have now passed and the eye is in normal condition. A sharp piece had cut through and fallen out.

If a body is embedded in the iris and is seen early remove it at once; otherwise, while inflammation is severe, you may await a more favorable opportunity. In one case in which confirmation of my suspicion was impossible and one eye had already been enucleated, local suppuration resulted eight weeks after the injury; I then opened the cornea and easily extracted the piece of brass from the iris, cauterized the edge of the wound, and the active symptoms at once subsided. In fact, suppuration around a piece of cap anywhere nearly always subsides immediately on its removal. Pieces under the conjunctiva not producing trouble, which have not been found and removed at once, may safely be left until some local irritation is produced. Yet, there is always a possibility of indirect pressure on the globe if these are large.

Case 2.—A young man lost one eye by explosion of caps; the other had good vision, which after several months began to fail. A small detachment of retina just behind the iris at the inner side, and vitreous opacities were perceptible. Vision slowly failed. During three months in New York he became blind. On his return, I resumed the use of tonics internally and sedatives locally. He regained some vision. Three years after this injury, a piece of cap presented at the lower punctum and was removed with difficulty, being many times the size I anticipated. A local irritation of the conjunctiva at this point always existed, resembling pterygium somewhat.

There is no doubt that this irritation produced the detachment, yet neither of his surgeons or the three oculists consulted ever suspected its presence during these years.

PROGNOSIS.

The prognosis in every case of blasting is uncertain. A change in nutrition is apparently set up, not becoming manifest for months or years, e. g., in Case 1 the detachment of the retina was not suspected for nearly six months. Vitreous opacities or choroidal atrophy may not be discovered for years. Fortunately, these spots frequently remain stationary. In a boy, 10 years old, from whom I removed a cataract five years after an explosion, the good eye had several atrophic spots in the choroid. Six years have elapsed with no further change.

Cataract is a very frequent late complication. For these patients advice is often only sought provided one eye has been lost. Cataract comes on after a few months or years, becoming complete in time; in my experience, this has been the case in young people. So far, in those in whom I have removed the cataract, the eye was free from other diseases. I know of no one requiring early operation if any hope is offered, as a miner with one eye lost and the other blind from some form of occlusion. These men frequently go from one oculist to another begging for an operation, and, unfortunately, they usually get it. From the very urgent need for such operation, we must advocate the urgent need of patience. We too frequently see eyes hopelessly lost that might have been useful had the operator waited for the subsidence of all inflammation. The danger of radical interference simply to restore vision in an eye not absolutely quiescent has never been over-accentuated, and in these cases can never be.

CONCLUSIONS.

1. With but few exceptions, blasting injuries result from want of care on the part of the patient, his associates or his predecessors at work.

2. In careful hands and with those familiar with the dangers, these accidents should not occur.

3. The eyes should be examined immediately, the larger foreign bodies removed, conditions noted, atropin used, and subsidence of general reaction awaited.

4. When reaction subsides, remove particles as symptoms indicate, provided it is not practical to remove all at once.

5. Foreign bodies inside the eye would better be removed as soon as located.

6. In children, general anesthesia is safer if specks are deeply embedded.

7. Careful ophthalmoscopic examination of each eye should be made early and a favorable prognosis should always be guarded. The shattering effect of high explosives produces deep internal changes.

8. Never operate simply to restore vision till every inflammatory sign has disappeared and all active changes have ceased; better wait even a few years.

9. Be careful in criticising the former attendant (if criticising must be done) till every detail of the history and circumstances have been understood.

10. Do nothing and say nothing in these cases unless willing to substantiate it in the courts. Careless remarks encourage the patient into litigation, and, no matter what the immediate result, experience has shown the ultimate consequences to be disastrous.

SOME EYE INJURIES AND THEIR LESSONS.*

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INDIANAPOLIS.

Eye injuries present such an infinite number of possibilities, so many differences in course, extent, symptoms and complications, that while we may derive some valuable points from experience and may lay down rules and principles applicable to many conditions, still each serious eye injury is largely a rule to itself and offers an interesting field for study. I desire to present, briefly, three groups of three cases each, representing three serious forms of injury worthy of our attention. The first group comprises cases of foreign bodies in the lens; the second, foreign bodies in the iris; the third, wounds in or near the ciliary region.

GROUP 1: FOREIGN BODIES IN THE CRYSTALLINE LENS.

Case 1.—W. B. consulted me Octotber 13, 1894, with history of injury to right eye by a guncap nine years before.

Examination.—This showed traumatic cataract with piece of cap in the lens. R. V. = Light only. L. V. = 20/20, with no symptoms of disturbance at any time. The inflammation in the right eye had subsided soon after the injury and given no trouble until shortly before he consulted me. There were now ciliary congestion, pain and tenderness. Atropin and hot applications gave relief for a time, He was advised to have the eye removed, if this trouble persisted long in spite of the treatment. Other local eye surgeons gave similar advice, but he decided to see Dr. H. D. Noyes of New York, who had treated the original injury. He reported later that Dr. Noyes attempted to extract the lens with the foreign body, which fell down into the vitreous and had to be "fished out," as he expressed it; that he was in the hospital for two months, hot water being freely used, eyeball saved with no vision, pupil obliterated. Since that time he has had no trouble.

Case 2.—W. C. had been blind in the left eye for twenty years from foreign body, in the lens, apparently a small piece of iron, the lens being opaque. As this was quiescent I advised against interference. Inflammation arising a year or so later, the eye was removed by one of my colleagues.

Case 3.—J. R., employe in the Atlas Engine Works, was injured in June, 1902, by a piece of steel from a drift pin entering the right eye and lodging in the lens. Sight was gradually lost in this eye until after a few weeks, perception of light only remained. Inflammation subsided quickly under atropin. The pupil, he says, became white. This condition remained quiescent over two years, but a few months before coming to me, November 22, 1904, he noticed the whiteness disappearing from the pupil and for two weeks the left eye had been watering, showing symptoms of tiring when he tried to read, with very slight pain.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

Examination.—It was evident that the lens of the right eye had become absorbed, the pupil being black, the iris tremulous, the fundus seen best with + 12 D. sph., with floating bodies in the vitreous, choroidal inflammation, vision remaining at perception of light only. The pupil was irregular and the iris muddy. A small corneal opacity showed where the steel entered the eye.

Treatment.—Prompt enucleation was advised and accepted two days later. The ball was opened after removal and the steel not found until examination was made of the choroid and the retina stripped off, the ball being apparently in the former. The symptoms of irritation in the left eye immediately subsided.

These cases show that, while a foreign body may remain quiet in the lens for years—in these 9, 20 and 2 years, respectively—no certainty exists, they are still in danger and should be kept under observation. The question arises, Should we follow the plan pursued by Dr. Noyes in Case 1, in trying to remove the lens and to save the ball, even if the metal falls into the vitreous and great reaction attends the efforts to extract it? Did he not run much risk of sympathetic ophthalmia? This procedure is advised by some authorities, resort to the magnet being made if the metal falls into the vitreous. It would seem to be all right in some cases, but, if marked reaction resulted and failed to subside promptly, would it not be safer to enucleate within a short time rather than try for weeks to save a blind eyeball, suffering from violent iridocyclitis? While the result seems to justify the procedure in this instance, would we not naturally expect trouble when, as in Cases 1 and 2, the metal has been in the eye a long time, has caused liquefaction in the lens and is already setting up inflammation? The safest course in such conditions would seem to be enucleated, as advised in Case 1 and accepted in Case 2, reserving the attempts to remove the lens and foreign body with preservation of the ball for those cases in which the metal has not been in the eye long enough to set up trouble.

In Case 3, with symptoms of sympathetic irritation present, enucleation was certainly the best procedure, the lens being absorbed, the eye blind from fundus lesions, and an attempt to remove the steel with a magnet being unadvisable.

GROUP 2: FOREIGN BODIES IN THE IRIS.

Case 1.—P. E. H., Lafayette, Ind., was reaming a tire on a locomotive in 1864, when a piece of steel about 2 mm. long penetrated the cornea of his right eye, lodging in the iris midway between the pupil and the outer margin. The irritation subsided in four weeks with no subsequent trouble save one attack of inflammation, twenty-two years later, which lasted a week.

Examination.—When I saw him in June, 1891, there was a well-marked iritis, which yielded to atropin, leeches and hot applications in two weeks with normal vision.

Subsequent History.—A more severe attack arising nine months afterward with symptoms of sympathetic irritation in the other eye, as I had removed to Indianapolis, he went to Dr. Keiper, who extracted the steel with iris forceps, fearing to employ the magnet when he found the metal so firmly embedded. Perfect vision resulted in both eyes.

Case 2.—O. H., employed at the Atlas Engine Works, was sent to me with slight irritation of the right eye.

Examination.—Careful examination revealed a small particle of iron in the iris, a little nearer the pupil than the outer margin.

Treatment.—An attempt was made to remove this with a Hirschberg magnet inserted through a small corneal incision to the outer side, but, this failing, we feared to protract our efforts, this being the only eye the patient had, also I had been compelled to enucleate the other a year previously on account of an infected wound in the ciliary region.

Result.—All reaction soon subsided under rest and atropin (in the eye with the small foreign body), and there has been no trouble since, more than a year having elapsed.

Case 3.—J. B. was referred to me from Winchester in November, 1901, with a piece of steel in the iris of the right eye. My magnet was not in working order.

Treatment.—Enlarging the entrance wound in the corneal margin, I inserted iris forceps and tried to remove the metal, but failed. Dr. T. B. Noble, who was assisting me, suggested that I make another incision at right angles to the first toward the foreign body—a suggestion I saw made by a Pennsylvania surgeon shortly after in the *Pennsylvania Medical Journal*. This being done, we prolapsed the iris containing the steel, worked the metal carefully out of the meshes of the tissue, in which it was firmly entangled, replaced the iris, put on sterile dressings and sent patient to Dr. Chenoweth of Winchester with directions to use a boric acid solution and hot applications, adding atropin as soon as the corneal wound closed. He reported prompt recovery with vision but one line less than the other eye.

The first case of this group is remarkable in showing that the iris could tolerate the steel so long—27 years—with so little disturbance and without damage to sight. Yet, at the last, without prompt action, it might have caused blindness in both eyes. The iris, then, is very tolerant of foreign bodies, but their presence, nevertheless, is a source of danger, and such patients should be under skilled observation.

The conservative course in the second case seems to have been wise on account of the loss of the other eye and the small size and favorable location of the metal.

The unusual procedure in Case 3 would naturally be objected to by the eye surgeon from fear of an ugly corneal scar, but this proved smaller than was anticipated, and the crucial incision facilitated the operation greatly on account of the shape and size of the chip. The reaction was slight. A magnet could not well have been used here; the iron was so firmly entangled in the iris.

GROUP 3: WOUNDS IN OR NEAR THE CILIARY REGION.

Case 1.—Miss. R., a demi-monde of Marion, came to my office September 10, 1902, with right eye badly cut by a piece of glass from the bursting of a beer bottle. The cut extended from near the center of the cornea to the very outer margin, with a large prolapse of the iris.

Treatment.—The patient was put under a general anesthetic and the prolapse was partly excised and partly replaced, the operation being done with careful aseptic precautions.

Result.—Healing took place very rapidly and she left the hospital in a few days with good vision and free from pain.

Case 2.—E. D., employed at Atlas Engine Works, was injured December 10, 1902, by a chip from a hammer, which made a small punctured wound in the left eye, in the sclera not far from the outer corneal margin and quite low down. The steel was pulled out by another employe.

Examination.—When seen by me an hour later, the small scleral opening was visible and the anterior chamber was so full of blood that vision was abolished and the iris could not be seen.

Treatment.—After washing the eye with a weak bichlorid of mercury solution, I applied a sterile dressing, advising cold applications, and giving him the bichlorid (1 to 10000) for home use. The next day he returned, the blood had been all absorbed and the vision was fairly good, but there was a small prolapse of the iris. I urged him to go to the hospital where I could give him proper surgical attention and the wound could be kept clean. He was strongly advised to do this also by Dr. Dorsey, the company's surgeon, but he refused, he was opposed to hospitals and surgery. Driven to a conservative course, I continued the antiseptic wash, changing from cold to hot applications. He came somewhat irregularly every two or three days until January 2, when the wound had healed with the iris adherent, but not projecting—the vision was then fair, the eye free from pain, with very slight redness and tenderness. He then remained away over a week, having been sick, returning January 10, with the eye more inflamed and the vision much reduced. Although I urged him to come back the next day, he did not and when I saw him again there was slight ciliary redness of the other eye. As soon as we could, we got him into the hospital, enucleated the injured eye, by this time practically blind, but, although the other eye had normal vision at the time of the operation, the redness was not the simple congestion sometimes seen in sympathetic irritation, but the commencement of a sympathetic inflammation, a serious iritis and cyclitis, which progressed very slowly to almost complete blindness.

Case 3.—F. P., a colored lad of 19, in celebrating Washington's birthday (1904) met a friend with a razor, who cut his left eye, through the lids, and the sclera above, and to the outer side of the cornea.

Treatment and Result.—He reached the hospital shortly before midnight, and the interne, Dr. Roy Cook, a pupil of mine, unable to get me by telephone, stitched up the eye himself, putting three stitches in the sclera and two in each of the lids. This was done with ordinary dressing forceps, coarse silk, etc. A remarkable feature was the fact that the cut penetrated the sclera without cutting the choroid or ciliary body, which was deftly pushed back as the sclera was united without prolapse or loss of vitreous. This wound healed rapidly with slight reaction. I saw the patient the next day; I continued the cold applications and antiseptic wash, prescribed by Dr. Cook, changing later to hot applications, and adding atropin when the wound healed. I removed the stitches on the sixth day. When the patient left the hospital, he had good, but not perfect, vision, and the eye was free from pain or other signs of reaction.

The lessons from this group are these: Danger lies more in position than size of wound. In the first and third cases, the injuries were far more extensive than in the second, but in the first the ciliary region was not reached, and in the third the choroid and ciliary body escaped cutting, as it were, by a miracle, while the very small wound in the second was in the worst possible place, and it well illustrates the very great danger of a prolapse, however small, in this region. From the favorable results in other cases in which I have operated, I believe that patient would have had two good eyes today had he gone to the hospital and submitted to an iridectomy when I first urged it. Although the files of the *American Journal of Ophthalmology* contain a paper of mine on the conservative treatment of prolapse of the iris, citing a number of cases in which good results were obtained without surgical interference, I am persuaded that the safest course is to resort to prompt surgery, at least when the prolapse is in or near the ciliary region. In fact it is only in exceptional cases of prolapse and those seen rather late—I am speaking now of traumatic cases—that I would not be inclined to resort to prompt operation under proper aseptic or antiseptic precautions whether near the ciliary region or considerably within the corneal margin. I have never had cause to regret following such a line of procedure. The first case of this group is but an illustration that would stand for many like it. The last one is unique, and I had reason to feel proud of my pupil's promptness and readiness in meeting the emergency.

It is hoped that the fact that a magnet was used in only one of these nine cases, and then without success, will not be understood as argument against, or lack of appreciation of, what we must all agree to be one of the greatest and most beneficent acquisitions to eye surgery, but the cases here cited were purposely chosen outside of that field, in order to illustrate different modes of procedure and differences in the course and results of somewhat similar accidents, with lessons to be adduced therefrom. Of course, it is not claimed that these lessons are altogether new or that so small a number of illustrations prove much. They are presented rather because they are in a field where many points are still debatable and because they seemed to suggest what might serve as the basis for a profitable discussion.

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TRAUMATIC LESIONS OF THE EYE.*

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I do not purpose to burden an organization of this character with an exhaustive narration relative to this subject. I desire rather to present it only in a general way, for no paper of reasonable length can properly treat in detail a subject so varied and manifold.

The clinical pictures presented by traumatic lesions of the eye are practically without number. The diversity of structure and the still greater diversity of inflicting agents makes a complete catalogue of injuries to the eye impossible. Some one, who has taken the great pains to do so, has listed seventy different pathologic conditions of the eye and orbit due to bullet wounds alone.

These ocular traumatisms are becoming more frequent, for modern conditions, with the increase of mechanical appliances, rapid transit, etc., and the more general use of chemicals and gases, make their demands of the eye as well as of other parts of the body. The increase of knowledge among the laity also brings certain cases to us that a few years ago would have sought no relief. Never before has the value of vision been placed so high—never have the demands of perfect vision been so exacting. Therefore any effort directed toward the better handling of these cases is becoming and well worth while.

To list the traumatic agents would be to enumerate practically everything in the animal, vegetable and mineral kingdoms, in either their gaseous, liquid or solid form, sufficiently small to reach the part. The most absurd and impossible things have produced lesions of the eye. Neither age, condition or environment exempt an eye from possible harm. It has been injured even before birth by clumsily applied forceps during delivery.

The import of the injury depends more frequently on its location and extent than on the inflicting agent. Structures are rarely affected singly—two or more parts sharing the traumatism in different degrees and the tissues traversed by the agent are not necessarily the only ones injured. The list of lesions extends from trifling lacerations of the conjunctiva to complete destruction of the globe and orbital contents.

Injuries to the eye are either penetrating or nonpenetrating. Compression, contusion and concussion of the eye may occur without a solution of external continuity but with great damage and destruction to intraocular structures.

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Penetrating wounds may be incised, lacerated or punctured, with or without the retention of the agent in the wound or eyeball.

It is necessary to classify injuries of the eye as recent and old because their treatment and subsequent handling differs very materially. Recent wounds are those which come to us usually within the first few hours or before Nature has thrown out her generous supply of plastic lymph in an effort to seal and to protect the injured parts. Old wounds are those that "show up" any time after the above has occurred—varying from twenty-four hours to as many years.

The time that we see these injuries depends largely on the location and relation of the patient to the oculist. In the railroads, machine shops, etc., located in large cities, the majority of them are recent. In our part of the country, where distances are great and transportation facilities limited, the injuries of patients coming from Arizona and Mexico with all possible haste must necessarily be classed as old, for in these cases adhesions have formed, exudate is abundant and much irremediable damage has usually occurred.

Next to the actual destruction of tissue, and frequently more grave, the thing to be most deplored is infection. In non-penetrating wounds endogenous infection occasionally takes place. It is a rare complication, and fortunately so. Penetrating wounds, while intrinsically serious, are rendered dangerous by the possibility of coincident infection. The interior of the eye offers an ideal medium for the growth and development of bacteria, and this unusual susceptibility makes infection of these lesions a common incident. Septic agents may carry the infection into the wound at the time of injury or it may become infected secondarily. I can not help but believe, after considerable observation, that infection of any wound depends more on the lack of resistance offered by the tissues than the kind and virulence of the organism implanted on them. In all injuries the resistance of the affected part is greatly diminished, and for that reason there is a greater liability to infection in accidental traumatisms.

Another distressing factor and one that is at times very destructive is hemorrhage. Bleeding occurring to any great extent back of the lens is almost always of grave consequence and any relief that it demands is at best unsatisfactory.

The feature that concerns us most in these cases is the treatment. In the whole domain of surgery there is nothing that calls forth a man's best judgment and taxes his resourcefulness as does the proper handling of these lesions. To temporize with them is often to lose the eye. Former experience frequently counts for little, for the extent of the injury, the structures involved and the nature of the agent makes each case a law unto itself.

The treatment naturally divides itself into two forms—one applicable to recent cases and the other to the old. In every instance the most careful examination and inspection of the wound is imperative. Nothing could be taken for granted, for the unexpected often occurs.

In non-penetrating recent cases an expectant attitude can be assumed, and in these only, for those in which penetration has taken place an entirely different state of affairs is present. Every penetrating wound should be looked on as probably infected, and appropriate measures immediately instituted—an error at times, but a safe one to make.

Unfortunately for the oculist, the delicate structure of the tissues of the eye makes it impossible to use the vigorous measures that are of value to the general surgeon. Considering this fact, infection is, fortunately, not as common as would be supposed. When it does occur, however, it is most deplorable and of grave significance, rendering the condition of the tissues of secondary importance and surgical work unavailing.

I can not pass this subject without briefly mentioning an agent that is of great value after the usual ones have failed to control the situation. It is cyanid of mercury, used subconjunctivally, according to Darier's suggestion. In two of my cases, after every other measure failed, it has completely altered the aspect and issue of the case. It is certainly worthy of consideration and should be used not only as a last resort, but early. The only objection to its employment in this manner is that it is painful, but it is impossible and impracticable to handle this dangerous condition "with kid gloves."

The introduction of iodoform into the interior of the eye in this class of cases is receiving considerable encouragement. Personally its limited use so far has been disappointing.

A foreign body in the eye converts every injury, insignificant or otherwise, into a serious lesion. Every effort to remove it should always be made, even though it frequently is most difficult and often unsuccessful. An occasional freak case of tolerance offers no excuse for allowing it to remain. Magnetic foreign bodies, thanks to the spectacular work of the giant magnet, have, to a large degree, lost their alarming significance. Non-magnetic bodies continue and, perhaps, will do so, the *bête noir* of the oculist.

To suggest or to prescribe the proper surgical measures indicated in a particular case is impossible, for none are typical and no fixed rule can be laid down. Every individual case has its peculiarities and calls for an operation devised especially for itself. Most men are agreed in regard to general principles, and whether a wound is to be closed by suture, conjunctival flap or compress bandage is a matter of secondary importance. One fundamental, however, that should always be remembered is that surgery, at the time of injury, should be restricted as much as possible. Aseptic methods have made us bold and at times meddlesome. The vitality of the tissues is always diminished and additional traumatism encourages infection. Conservatism should be the rule, leaving as much as possible for a later period when the eye is quiet and the chances of infection reduced. One remedy deserving of special mention and of great value in certain of these cases is dionin. I believe it to be our most valuable accession since the advent of epinephrin. When indicated, it is of the greatest benefit not only for its analgesic properties, but for its ability to clear the eye of exudate and the cornea of recent opacities.

In extreme and severe injuries the question of enucleation or evisceration becomes prominent. It is of vital importance to the patient whether or not his eyeball can be saved for him, even though sightless. This is especially true in the case of children, for not only their comfort, but their orbital development depends on the retention of the globe. Great care and judgment is often necessary and the sound eye must always be given the consideration it deserves.

Burns of the eye and adnexa constitute a distinct class of their own. The character of the agent, the extent, degree and destruction of tissue making them usually of serious import. It is in these cases that an effort, additional to the usual ones, must be made to prevent disastrous cicatrices and adhesions, with their resulting contraction and distortion of the parts.

In all doubtful cases, consultation is advisable. We are prone as our practice and experience increases to look on our own ability as sufficient. This fallacious idea sooner or later will be followed by disappointment and chagrin. No man is so far advanced that he can not at times be wrong. Neither is it always the small man that is in error. Mistakes are common property.

All prognoses should be most guarded, for in spite of every precaution and precedent the best laid plans may miscarry. Disappointing results are always possible and often occur in the most favorable appearing cases.

The treatment of old cases and secondary work frequently requires the greatest skill on the part of the surgeon. The extreme delicacy of the tissues makes plastic work in this locality very exacting. These cases constitute a large majority of our operative work and their handling requires no description here.

DISCUSSION.

ON THE PAPERS OF DRS. DONOVAN, HEATH AND MILLER.

Dr. Edward Jackson, Denver, emphasized Dr. Donovan's advice, which departed somewhat from the usual teaching as to the treatment of foreign bodies in the eye. Some of the foreign bodies, large ones, those that are evidently going to make trouble, may be removed at once; others may be removed from time to time as they cause trouble; and still others may be let alone always. The number is often so great that it would be impossible to get all out without messing the eye up, and yet such cases are not hopeless. Dr. Jackson reported that he had recently seen a patient whom he treated five or six years ago who now has useful vision. He had 50 or 60 foreign bodies in the cornea, a number in the iris, and the lens had so many that it underwent spontaneous absorption, and he gets good vision with a cataract glass. The eye has been perfectly quiet for over four years. This case was watched for months, and simply atropin used with occasionally hot applications. The patient's life was despaired of at first because of the extensive injury, but the eyeball was treated simply by this expectant method. In the mountain regions such injuries as these are common. Dr. Jackson mentioned the fact that eyes that have been subjected to serious injury, particularly those that remain irritable, with chronic uveitis, weeks and months afterward, have improved after the employment of the *x*-ray to discover the possible presence of foreign bodies; it has been thought that the improvement might be due to the influence of the *x*-ray, and yet the fact that the eye had not been under very skilled supervision before left the suggestion that it might be the change of treatment in other respects. Dr. Jackson cited the case of a young man who had had his eye injured in Mexico; a month or more elapsed before he received any skilled treatment. He was under observation for six months, and the most marked improvement was after the use of the *x*-ray to discover any possible foreign body. It finally yielded permanently to the *x*-ray influence so that he was allowed to return to Mexico.

Dr. J. Hirschberg, Berlin, Germany, said that his surgical interference with the magnet amounts to some three hundred cases in the last twenty-five years. There are cases in which eyes with foreign bodies seemed to be saved, but it was a deception. Before good magnets were employed no attempt was made to cut the globe and to remove the foreign bodies. It is clear that every particle of iron must be extracted from the posterior parts of the globe; particularly if the case is fresh Dr. Hirschberg always interferes at once, if possible within ten or fifteen minutes after the patient comes in. One can never be sure about the nature of the infectious material. Foreign bodies received into the eye from shoeing horses are particularly infectious. These cases are clear, but in others there is no test of the infectious character of the foreign body, and so in fresh cases one should always endeavor to extract them. Never apply the giant magnet as a means of diagnosis; that is very bad. Dr. Hirschberg has seen in America several specimens of the Hirschberg magnet which are not the modern magnet at all. One of the dangers, of course, is sloughing of the eyeball following the introduction of septic material. But, even if the body is aseptic, there are many dangers. If the splinter is as large as the papilla optica, generally there follows the formation of connective tissue with detachment. If the foreign body is not so large, however, it is still not free from danger. There will be contraction of the field in dim light, and, even though the case may seem to do well for many years, the eye is never out of danger. Last year Dr. Hirschberg removed from the retina a foreign body of sixteen years' standing and got good vision. A careful examination of the field of vision showed contraction, and if left alone the eye would surely have become blind. Even after sixteen years, then, good results were obtained with extraction of the foreign body without detachment of the retina. Dr. Hirschberg referred to the so-called "tolerance of the eyeball for foreign bodies;" he thought we should speak of the "intolerance" of the eye for foreign bodies. Some one had asked what is done with the iris when the foreign body is brought into the anterior chamber, and Dr. Hirschberg said that after he gets the body into the anterior chamber he makes an incision and introduces the curved point of the magnet and draws it out, then replaces the iris, and the pupil generally remains round.

Dr. Eugene Smith, Detroit, said that he had had in his paraphernalia for a great many years a Hirschberg magnet, and that he had been successful in a number of instances with the hand magnet in getting out pieces of steel which were not touched by the Haab giant magnet. In other cases in which steel was imbedded in the ciliary region, attempted extraction with the Haab magnet has been followed with destruction of the eye. Dr. Smith said that he has long been on record as being in favor of locating the piece of steel and making an incision in the sclera in the immediate vicinity of the foreign body and using a Hirschberg magnet for its withdrawal. There are, however, many of these cases in which it is almost impossible to locate the foreign body. He always endeavors to get at the position of the patient at the time of the accident so as to get as nearly as possible the direction in which the piece of steel has entered the eye; also the force of the blow as nearly as possible. This will often aid considerably in getting at the depth. If a foreign body has gone directly in, it will be in the posterior part of the eye; if diagonally, one can get at it better by making efforts in the direction in which the body has gone. If the case is not seen until after the original wound has closed, it may be located with the ophthalmoscope or the sideroscope, and then an incision through the sclera in the immediate vicinity of the foreign body is preferable to the use of the Haab magnet, with the danger of drawing it into the ciliary region. Dr. Smith reminded the section that a number of years ago he gave to the association an operation for the relief of iridodialysis, but the text-books have not mentioned it. Others, however, especially across the water, have employed it. Where the iris is torn loose and hangs free, and there is interference with vision from the two pupils, Dr. Smith thought of the method of making an oblique incision just at the sclerocorneal junction, introducing the forceps, taking hold of the iris and drawing it gently into this oblique incision, where by a pressure bandage it remained, obliterating almost entirely the extra pupil, or making it so small as not to interfere with vision. Other operators have found favorable results from the use of the method.

Dr. W. E. Briggs, Sacramento, said that the tendency of the profession is to be too radical in the treatment of the cases in which there are a great number of foreign bodies in the eye. Special workers have to contend against the fact that the surgeon who attends the case first is very liable to be too radical. Dr. Briggs has had a number of patients in whom useful vision has been saved, even when both eyes were injured, by advising strongly against any radical procedure. Useful vision can often be preserved with a number of foreign bodies remaining in the eye. A few months ago he had a patient with foreign bodies in the vitreous of both eyes. In one eye there was no possibility of saving vision, and the eye was so painful that it had to be enucleated, but the other, which one would ordinarily say could not be saved, as there were a large number of foreign bodies in the vitreous, pieces of quartz and grains of powder, was let alone. The patient now has sufficient vision in that eye to enable him to go about and even to make change. In another case, when the physician asked if it were not advisable to enucleate both eyes in a case of very extensive injury, Dr. Briggs thought it well to wait until enucleation seemed absolutely necessary; this, too, was a case of quartz in the eye. That patient retained enough vision to go about without difficulty.

Dr. L. H. Taylor, Wilkesbarre, Pa., declared that it is not altogether the place in which the injury occurs, but the sort of foreign body that enters the eye, that determines the danger. Those who practice in mining regions have opportunities to see injuries of all degrees and kinds. Some very serious ones get well with little difficulty, while others, seemingly slight, cause a great deal of injury. Dr. Taylor mentioned the case of a man who after a most severe injury has good vision after a lapse of twenty years. In another case he removed a large piece of coal that had been in the eye for many years without causing trouble; then there presented a small point in the conjunctiva, and on operating to remove it he found a very large body, and yet the patient had carried it for many years with good vision. Dr. Taylor referred to a paper by D. Harlan, presented some years ago, on "Blind Eyes Are Dangerous Eyes," and said that these eyes are always liable to set up trouble, but whether they should always be removed is another question. He removed an eye some time ago that he had treated seventeen years previously. During that time the patient had had no trouble. In another case he removed an eye in which a foreign body had been carried for thirty-two years. There was a great deal of irritation and the eye had to be removed. He asked if those two eyes should have been removed at once. Of course, it would have been safer, and yet one patient went seventeen and the other thirty-two years without discomfort, and surely they were in a better condition with the blind eyes than they would have been with artificial ones. If patients could only be watched, Dr. Taylor believes that many eyes that are enucleated might be saved, even though blind eyes with foreign bodies in them.

Dr. John E. Weeks, New York, stated that the prognosis depends largely on the character of the foreign body. As Professor Hirschberg has said, a foreign body composed of steel or iron is disastrous to the eye in almost, if not in every case, sooner or later, and should be removed as soon as possible. A piece of steel may remain in the eye a number of years, but sooner or later it is sure to cause trouble. Copper is another of these substances. It produces inflammatory reaction of a severe type and suppuration, and should always be removed as soon as possible after its discovery in the eye. Many pieces of rock and earthy material may remain in the eye without producing any great inflammatory reaction, and these minute particles may be allowed to remain with the hope of retaining a certain amount of useful vision. Particles of glass under certain conditions may remain indefinitely without doing away with the vision of the eye. Particles of powder also may remain in this way, and particles of lead, but in the majority of cases lead will set up an irritation that makes necessary the removal of the eye. Dr. Weeks has seen shot remain in the eye many years with retention of good vision, but ultimately the eye became irritable and operative procedures had to be instituted. If the character of the foreign body is known the method of treatment may be based on that knowledge. When a foreign body is present, Dr. Weeks thinks it is essential to know the location of that body as nearly as possible, and every method for its localization should be employed. In removal of a foreign body from the anterior chamber Dr. Weeks always makes a T-shaped incision, as otherwise the lips of the wound are too rigid, but with a T-shaped incision there is a satisfactory scar and the lips of the wound are pliable, so that the foreign body may be removed much more easily.

Dr. S. D. Risley, Philadelphia, emphasized the necessity for waiting before any operative interference for the removal of the cataractous lens in these cases. There are a great many of these at the Wills' Hospital in Philadelphia, and he learned long ago to advise waiting until the eyes became quiet, and many times he has had patients go through a few weeks of treatment at the hospital and then sent them home, telling them to come back in six months, and he has found that after the eyes became quiet operative interference could be undertaken with less danger. He referred to one of the cases mentioned in Dr. Heath's paper, in which a foreign body was entangled in the iris and was difficult to remove, and in which Dr. Heath made a T-shaped incision and succeeded in removing the foreign body and in replacing the iris. He asked whether in the majority of cases this would be the proper course to pursue. Dr. Risley's experience bears him out, he said, in the statement that it would have been better to remove the foreign body with the entangled particle of iris. The iris is prone to take on inflammatory reaction of a plastic nature, and he believes that it would be safer to have done an iridectomy in the removal of the foreign body. He said that with particles of suitable size, after they have been located with the *x*-rays, it is safer to remove them without the use of a giant magnet. If they are not already in the anterior chamber he thinks that by making a scleral puncture and placing the Hirschberg magnet to the lips of the wound, the foreign body may be withdrawn without introducing the magnet. It is never prudent or wise to insert the point into the vitreous if it can be avoided. If the foreign body weighs a grain or two, the giant magnet is always unsafe. He has seen the iris bulge with the foreign body, cut off the current immediately, and then he has seen the foreign body come through the point of entrance like a bullet, and take with it the iris. Therefore, if the body is of any considerable size the giant magnet is dangerous. Dr. Risley has seen a silver suture, which had been overlooked in a wound, removed after five years, and the tissues were discovered almost black. He alluded to this to illustrate the chemical changes that may take place in certain of these bodies located in the eye. With the known presence of these metals in the eye, strenuous efforts should be made for their removal. As to the non-magnetic character of some forms of steel, as manganese steel, attempts at removal may be disappointing, because of the low degree of magnetic properties of these substances.

Dr. Mark D. Stevenson, Akron, Ohio, said that he has been using iodoform in beginning panophthalmitis and feeling that possibly the discs might be more or less irritating he attempted to place the powder in the eye; this was done with considerable difficulty. More recently he devised a little instrument by which the powder may be placed within the eye very easily. Of course, when the particle is sterile or when there is no infection it would be unwise to use the iodoform. In recent cases in which there is known danger of infection it would be wise to introduce the iodoform immediately. He prefers the powder because it remains for a considerable time and can always be readily seen, giving assurance that the substance is still there. If a fluid is placed in the eye it may flow out in the anterior chamber with the aqueous humor. He finds that eyes in which he has used iodoform heal very readily.

Dr. John A. Donovan stated that the foreign bodies in these blasting operations are non-magnetic in character, so that the use of the magnet does not come into question. He would endeavor to remove foreign bodies in every case where it is possible.

Dr. F. C. Heath said, in reference to the case in which he left a small particle in the iris, that prolonged efforts would have injured the eye more than leaving the foreign body in. First, the foreign body was small, not more than one-quarter the size of the head of a pin; second, it was in a position where it was not likely to set up trouble; third, the patient had lost the other eye.

The Consultant.—Every practitioner who has been in active practice for twenty-five years should have a competency and should devote himself to consultation practice in special work, leaving general practice to the younger.—*Pacific Med. Jour.*

THE MATAS OPERATION FOR THE RADICAL CURE OF ANEURISM,

AS APPLIED IN TWO CASES OF RUPTURED ANEURISM.*

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NEW ORLEANS.

The procedure described by Dr. Rudolph Matas[1] has attracted widespread attention, and has been tried in a number of successful cases, recently reported, sufficiently to prove its merit as a permanent and notable advance in the surgical treatment of aneurism. It is still, however, a comparatively new and untried method, and all clinical reports which bear on its application in atypical conditions should be instructive and profitable to the practical surgeon.

Presuming that the reader is familiar with the original procedure described by Dr. Matas, I will limit my remarks to two cases of aneurism of the fusiform type which came under my observation in the Charity Hospital. In each instance, the aneurism had ruptured into the subcutaneous and intermuscular spaces before I was called to operate on the patient. On account of existing conditions, I deemed it expedient to depart in some details from the technic recommended by the originator of the method, while preserving the fundamental principle of using the suture in controlling the bleeding orifices within the sac. The results would show that in adapting ourselves to atypical conditions, variations in technic are permissible and advantageous, as they do not affect the principle of the method, while they expand its application.

Case 1.—C. P., laborer, aged 40 years, was admitted to Charity Hospital August 1, 1904.

History.—Family and personal history were negative. Three weeks before admission he noticed some swelling about the right ankle. One week later, while at work, he noticed a swelling about the middle and on the inner side of the thigh, which had continued to increase in size since, and became painful after the first week. He had had no chills or fever. Just before applying to the hospital he consulted a physician who punctured the swelling with a hypodermic syringe and drew some blood and advised him to come to the hospital and have the abscess (so he called it) opened.

Examination.—This showed a hard, somewhat fluctuating, irregularly ovoidal tumor tapering to a point above at about the origin of the adductor magnus muscle. It was largest at about the middle of the thigh and extended below to within about four inches of the upper border of the patella. The tumor was well defined except at its upper end. No pain on pressure, no pulsation, no thrill, and no bruit could be discerned.

The skin was freely movable over the tumor and was slightly warmer than the surrounding parts. The femoral artery could be felt to pulsate down to about the middle of the tumor, but was then lost in its substance. There was no pulsation in the dorsalis pedis or posterior tibial arteries. The pain in past three days had been increasing in intensity.

Operation.—He was put to bed and prepared, and on August 4, under chloroform anesthesia an incision was made over the most prominent part of the tumor anteriorly, and after going through skin and superficial fascia, an exploring needle was inserted into the tumor and some dark blood aspirated. Through a second incision, a provisional ligature of stout silk was passed around the femoral artery, just below Poupart's ligament, to control hemorrhage. The incision over the tumor was now completed and a large cavity fully 12 inches in length and 6 in depth, filled with fluid and clotted blood was exposed. There was some active bleeding and after quickly washing out blood clots and sponging out all fluid, the chief bleeding point was located just above the femoral opening in the adductor magnus muscle. This bleeding was stopped by digital pressure and the cavity inspected. The bleeding point proved to be the lower opening of an aneurismal sac which had ruptured anteriorly and now formed part of the floor of the present cavity which had been produced by the blood extravasated into the tissues immediately surrounding it. On further examination, it was found that there was still some bleeding and that this came from the upper opening of the sac, which was seen about two inches above the lower, bleeding also, but less profusely. Both openings were closed with silk purse-string sutures, over which were inserted a layer of interrupted Lembert sutures; the provisional ligature on the common femoral was then removed, and all bleeding found to have been completely controlled. The removal of the ligature, however, revealed an aneurismal dilatation of the femoral artery for a distance of about one and a half inches above its opening into the sac, with an intervening apparently healthy constriction at its point of entrance. Another silk ligature was applied around the vessel just above this dilatation and tied. The sac was then irrigated thoroughly with hot normal saline solution and washed clear of clots and sponged dry. Two long laparotomy gauze sponges were inserted and the ends pushed up to the upper end and bottom of the cavity and the wound partly closed with silkworm gut sutures, thus allowing free drainage of any secretion that might accumulate in such a large cavity. The upper incision over the femoral artery was sutured with catgut, and after the application of an abundant loose gauze dressing, the whole limb was wrapped in several layers of cotton batting, and a posterior gutter pasteboard splint was applied, immobilizing the knee in extension. The limb was kept slightly elevated and surrounded with hot cans. The foot was warm immediately after the operation and continued so, there being apparently no interference with its circulation, and several days later pulsation could be felt in the dorsalis pedis artery.

After-treatment.—The dressing was removed on the sixth day, it was very much soaked with secretions, and the cavity was washed and repacked. This procedure was repeated every second or third day till the wound finally closed by granulation from the bottom. This took place very rapidly and he was discharged October 15, with perfect functional result.

Case 2.—H. W., aged 30, was admitted to Ward 4, November 25, 1904.

History.—Family history is negative. The patient smokes, chews and drinks. Former diseases: Both legs were broken seven years ago at junction of middle and lower third. He was in a railroad wreck one and a half yars ago and received general contusions. He had gonorrhea seven years ago, but denies having had syphilis. The present complaint began in June, 1904, with pain in middle third of left tibia, extending to the ankle. This pain constantly increased. About Nov. 1, 1904, the patient noticed a pulsating painful tumor in the left popliteal space. This tumor became smaller under treatment of pressure applied with a cork and bandage. He tried this plan about one week, then he took the bandage off and began hard work in a sawmill. He worked ten days, when he noticed that his left ankle was swollen and he had a severe pain in the leg. The tumor appeared again in the popliteal space and began to grow much larger and became more painful.

Examination.—There is general arteriosclerosis and an aortic obstructive murmur. There was a large, pulsating expansile tumor occupying the left popliteal space, which increased one inch in size (circumference around knee) when pressure had been made above and released. A bruit could be heard over the tumor and over the femoral artery at Poupart's ligament. There was no pulsation in the posterior tibial artery. Pressure below did not increase size of tumor.

Treatment.—The patient was put to bed and ordered potassium iodid, grains 10 t. i. d. and the dose increased one grain daily. On November 27 an icebag was applied to the knee, codein sulphate ¼ grain was given and the leg was elevated. Temperature at this time was 98 F., pulse 96, respiration 24. The patient complained a great deal on that day. About 2 p. m. the pain suddenly ceased. At 4 p. m. temperature was 101, pulse 120, respiration 24. Examination of the knee showed a soft fluctuating mass to outer side of and above the patella. At 7 p. m. a ruptured aneurism having been diagnosed, he was taken to the amphitheater and prepared for operation.

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* Read at the annual meeting of the Louisiana State Medical Society in New Orleans, 1905.

[1] The Radical Cure of Aneurism, Based on Arteriorrhaphy; Trans. Amer. Surg. Assoc., 1902; Ann. of Surg., January, 1903.

Operation.—Under chloroform anesthesia, ether being substituted later, an elastic constrictor was applied in the upper part of the thigh and a longitudinal incision of about three and a half inches was made over the center of the tumor in the popliteal space, and a large cavity filled with clotted and fluid blood was exposed to view. After washing out the blood and clots the cavity was seen to be about six inches in longitudinal and four inches in transverse diameter. Its upper boundary was not so well defined as the lateral and lower ones, the blood having evidently dissected its way under the hamstring muscles on the outer side, and between them above, where the cavity ran up into a point. On the inner aspect and near the bottom, the wall of the cavity presented an area about one and a half inches in diameter and two and one-half inches in length, which was whiter and more smooth and glistening than the rest of its surface, which was of a dark and bloody hue. This proved to be the original aneurismal sac, there being one opening in it near its upper margin and one near its lower, and about one and a half inches apart. These openings were closed with Lembert sutures of small silk on a curved needle, and, as an additional safeguard, a suture was passed completely encircling the upper opening and tied. On the removal of the elastic constrictor there was no bleeding whatever. The cavity was once more flushed with hot saline solution and packed with gauze and a large dressing applied. The limb was wrapped in cotton batting and a posterior splint of pasteboard applied to immobilize the knee. Hot cans were applied around the limb for two days. The toes were felt to be warm, however, on his return to the ward from the operating room, and the wound healed from the bottom by granulation. He made an uneventful recovery, being discharged from the hospital cured on Jan. 9, 1905.

REMARKS.

In the first case, the diagnosis of aneurism was not made till the sac had been opened, though, fortunately, the common femoral artery had been tied temporarily as a preliminary measure. In the second case, my attention was called to the patient by the appearance of a soft swelling to the outer side of, and somewhat above, the patella in a case previously diagnosed as popliteal aneurism. In both cases, hemostasis was secured by suturing the arterial openings within the aneurismal sac. The sac was not excised nor was it obliterated. The dissection of the tissues by the extravasated blood had created a cavity of such size in each case that it was deemed proper (in view of possible infection of so large a space, which would soon fill with fluid secretion from its extensive surface if not drained), to irrigate thoroughly and to use a long gauze drain; which performed its functions well, as the copious secretion on the dressing later showed. There was little or no interference with the warmth, sensation, or nutrition of the limb beyond the aneurism as a result of the operation. The functional result was perfect on discharge, the healing being complete.

The operation as described by Dr. Matas is probably the simplest and easiest operation devised for the purpose, when temporary hemostasis can be secured by an elastic constrictor, a provisional ligature, or even digital pressure. Any one who has performed the tedious, prolonged operation of ligation above and below and excision of the sac is certain to become a convert to this method the first time he tries it. The incision required is smaller, the openings in the vessel are easily and very plainly exposed to view, and very easily closed by suture. The number of rows of sutures may be increased at the option of the operator to any number he may deem necessary to insure safety against secondary hemorrhage. The integrity of the sac is not interfered with, and as there is no dissection either around, or above, or below the sac, there can be no interference with collateral circulation so essential to the life of the limb beyond.

There is one point that is brought out by these cases and which makes them especially worthy of record, and that is, that where the aneurism has ruptured some time previously and has given rise to a cavity of such size that its obliteration by suture would become either impracticable owing to its extent, or inadvisable owing to the possibility of interference with collateral circulation by the incision and dissection rendered necessary to expose the whole cavity for the purpose of suturing, it is better to close the incision partly, and to drain, allowing the wound to fill by granulation from the bottom, instead of obliterating the cavity by suture, as is done in the unruptured cases. This can be very materially aided by gentle compression of the sac in the application of the dressing and the use of a gauze drain that will act as a wick rather than as a pack.

In Case 1, for instance, in order to have sutured together the walls of this cavity, it would have been necessary to make an incision of about fourteen inches in length. There is the additional advantage, too, of a saving of time by this method, which is of momentous importance to a large class of patients who stand operation and anesthesia badly.

THE EFFECTS OF THE INHALATION OF THE FUMES OF NITRIC ACID.

WITH REPORT OF CASES.*

J. N. HALL, M.D., AND C. E. COOPER, M.D.
DENVER.

The Denver Fire Department was called to the office of the *Denver Post* Sept. 20, 1904, at 4 p. m. On arrival they were informed that a carboy of nitric acid had been accidentally broken in an attempt to remove the stopper with a hammer. The acid spread across the floor, coming in contact with the zinc used in etching. Sawdust was used to absorb it, and, rapidly oxidizing, burst into flame here and there, resulting in the call for the firemen. Mr. Bradt, foreman of the department, who was at work in the room, states that the fumes and smoke were not especially irritating until the portable apparatus began playing on the fire, the usual carbonic acid-producing solutions being employed.

We find by examination that the acid used contained no appreciable amount of nitrous acid and was of about 38 per cent. strength. About ten gallons of it escaped from the carboy. We believe the symptoms to have been caused by the smoke, made much more irritating and corrosive by the presence of the nitric acid and the products of its union with organic matter. Dr. E. C. Hill states that under these circumstances HNO_2 would arise from decomposition of the HNO_3, and also nitric peroxid (NO_2), and nitric oxid (NO).

Haines and Peterson[1] state that nitric oxid (NO) is obtained by the deoxidation of nitric acid, by the action of this acid on metals, vegetable fibers, etc. They mention, as symptoms of acute poisoning, dyspnea, tightness of the chest, coughing, fainting, cyanosis, diarrhea and collapse. Concerning one case they state:

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Text-book of Legal Medicine and Toxicology.

> Blood drawn on venesection tarry, thick, black and rapidly coagulating. It is of diminished alkalinity, and on dilution becomes red and shows the oxyhemoglobin spectrum.

All of these compounds are irritating when inhaled. In view, however, of the irritant qualities of many gases inhaled in fires, in the use of disinfectants and otherwise, and the more or less similar results in most such cases, we would insist on the point that the irritation of the inhaled fumes, and not the direct chemical action, is probably the dangerous feature. Thus Dr. Hall has reported[2] a rapidly fatal case of bronchopneumonia resulting from the inhalation of smoke from burning weeds and grass, the subject being a feeble asthmatic of 61 years. In the same paper were reported cases from the inhalation of chlorin, of sulphurous acid, and of formaldehyd, differing only in degree from the cases we are now studying, and from each other. The chemical effect is apparently subsidiary to the irritant one in all; but, in general, we must conclude that smoke, which is not much feared by firemen, is vastly more irritating and, therefore, dangerous when contaminated with fumes of various chemicals.

Eighteen firemen and two men employed in the office were affected severely enough to demand medical aid. Of these, four died, two on the second day, from the direct consequences, and two several weeks later from relapse. The immediate symptoms complained of while exposed to the fumes were, in order of frequency, as follows: Dyspnea, pain in the stomach, pain in the chest, headache, dryness of the throat, coughing, vomiting, dizziness, difficulty in walking, and dryness of the nose. No unconsciousness was noted. Nearly all the firemen returned to their respective firehouses, not considering themselves seriously sick. After a few hours many of them sought medical aid, and within twenty-four hours all of them excepting one were patients in the Emergency Hospital.

We next present a list of the prominent symptoms noted in 15 of the 16 cases which recovered: Dyspnea, present in 100 per cent.; cough, present in 93 per cent.; pain, present in 87 per cent., especially in the sides of the chest, stomach, lungs, throat, loins and head; dizziness and nausea, present in 73 per cent.; cough of especial violence, present in 67 per cent.; vomiting, present in 53 per cent.

During the first week of illness dyspnea persisted in 100 per cent. of the cases; 93 per cent. were confined to bed during this time. Pain persisted in all those who complained of it during the first day, and in practically the same localities.

Marked prostration was present in 87 per cent. Fever in 80 per cent., generally of moderate severity. The cough generally persisted, with bloody expectoration, in 27 per cent., and voluminous expectoration in 60 per cent. The taste of nitric acid in the expectoration was complained of by several patients.

Within the first half of the second week many of them were discharged, the average time in bed for the whole number being eleven days. Ninety-three per cent. complained of general weakness, and but one felt well on arising.

Relapse occurred in 33 per cent. of these cases, generally in the third week, and averaging 15½ days in duration. The symptoms were those of the original attack, but of less intensity.

The length of time from the exposure until practical recovery in eight cases averaged 113 days, the maximum being 210 days, the minimum 90 days. Five state that they are not well yet, and two failed to answer.

Those having any remaining symptoms nine months after the attack number eleven, or 74 per cent. These symptoms, in order of frequency, are dyspnea, "nervousness," stomach troubles of various kinds, cough, dryness of throat and nose, pain in the chest, loss of weight, dyspnea on inhalation of smoke, dizziness, pain in the loins, and headache.

There was a loss of weight in 87 per cent. of the men, entirely regained in 40 per cent., not regained in 13 per cent., and no reply was made in 47 per cent. The average loss was 25 pounds, maximum 40 pounds, minimum 20 pounds. The average regained was 18½ pounds, maximum 30 pounds, minimum 5 pounds.

Sixty per cent. find they are more susceptible to cold now than previously. The dryness of the nose is thought to be due to a beginning chronic rhinitis, due to the irritation of the fumes inhaled. The dyspnea on inhalation of smoke may well be largely nervous in origin, but doubtless in part because of the increased susceptibility of the bronchial mucous membrane due to the action of irritants. The pains in the sides of the chest are, we believe, pleuritic in origin. They were exceedingly severe in some of the cases in the first days of the illness, indicating at that time a dry pleurisy, since friction sounds were heard. The later pains may well have been sequential to such a pleurisy. The rapidity with which the pain developed in some cases suggests the likelihood of its having arisen from direct irritation of the lung by the acrid smoke.

Albumin was noted in at least one of the cases, but evidently no such damage was done to the kidneys as in some cases we have seen in which acute nephritis followed the swallowing of mineral acids. Probably little of the acid was absorbed, most of the damage from it being caused by its irritant effect.

Two of the cases died on the second day, one on the twenty-second day during a relapse, and one at the end of one month, also during a relapse.

The two who died on the second day were affected about as were those who recovered, but more severely. Cough was not a notable symptom. Cyanosis, nausea, diaphragmatic pain, dyspnea and vomiting were noted early. In both there was unconsciousness for several hours before death, and the physical signs of a progressive bronchopneumonia, but without the fever and other constitutional symptoms of an infectious disease. One of these had an extremely rapid pulse. Both expectorated frothy, blood-tinged serous fluid for some hours before death. Dr. P. V. Carlin informs us that pneumothorax developed in one of them.

The two who died during relapse suffered about as the others did during the primary attacks. Both were comparatively well during the interval. Both were exposed to cold and almost immediately entered the relapse. The two cases were similar enough so that the following description may well answer for both:

The sputum was blood streaked, thin and abundant. The cough was at times violent. Pleuritic pain was severe (and in one severe pain existed in the pharynx, larynx and esophagus). Large and small râles were abundant, at first in the lower portion of the chest, and gradually extending upward. There was moderate rise in temperature, pulse and respiration. The cyanosis was intense (and not relieved by oxygen in one of the cases, although somewhat so in the other). Both died with all of the symptoms and signs of a desperate bronchopneumonia.

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[2] Phila. Med. Journal, 1902. "Bronchitis and Bronchopneumonia from Inhalation of Irritants."

Before the relapse both of the men had been discharged from the hospital as recovered from the acute condition, although both complained of moderate exhaustion, such as is common to the period of convalescence from any acute illness.

In one of them examined the day before the relapse, no physical signs of disease were found. We believe that exposure to cold, which occurred in both cases, was the exciting cause of a renewed and virulent inflammation, rapidly extending into a definite bronchopneumonia, as above described.

On two patients autopsies were held, unfortunately unknown to either of us. We quote portions of the reports to the coroner by Dr. W. S. Holmquist and Dr. H. R. McGraw:

Dolloff.—"The pericardium showed spots of metallic luster on the upper surface. The heart was filled with extremely dark coagulated blood, less consistent than clotted blood. Pleuræ free. Lungs large and voluminous, on section bled freely. Some spots were devoid of air. Bronchioles filled with bloody fluid. Much of the lung tissue was edematous and heavy. Mucosa of bronchi perceptibly thickened."

"*Diagnosis.*—Deceased died from asphyxia, due to an acute congestion of the lungs; and a pathologic change in the hemoglobin of the blood."

Eyman.—(Died in relapse, one month from exposure.) The essential features are stated by Dr. H. R. McGraw "to have been those of a bronchopneumonia, with almost complete solidification of lung in places. Sections from these solidified portions showed superficial coagulation necrosis and the alveoli were found filled with necrosed cells in places. Other parts showed a beginning fibrous development. Deposits of blood pigment were noted in spots upon the peritoneum. Dilatation and hypertrophy of the heart. No changes were noted in other organs."

The pathology, in our opinion, is a combination of purely local and general effects. Locally, the inhalation of the nitrous and nitric oxids, the products of combustion, and of the chemical reactions between the acid, zinc, and the chemical solution used to extinguish the blaze, assisted by the violent respiratory efforts occasioned by the physical exertion, produced an irritation and probably a mild coagulation necrosis of the mucous membrane of the air passages and the alveoli. In the two cases that died early there was produced promptly a severe bronchopneumonia. In those dying during a relapse the necrotic areas were largely cleared up by absorption and exfoliation, leaving exposed a delicate and susceptible membrane. The exposure to cold was sufficient to excite a bronchopneumonia of especial intensity on this account, proving rapidly fatal. Dr. Hall has reported[3] a case of lobar pneumonia in which, twenty-three days after recovery, a robust young man was exposed for a few hours to severe cold (about 20 degrees below zero), and died in a few hours of acute pulmonic congestion. It is probable that the fatal result in this case, as in those we are studying, was due to a bronchopneumonia, with great accompanying edema.

The cyanosis in the severe cases was extreme. It was doubtless in part purely mechanical, as in ordinary bronchopneumonia, but largely due to the changes produced in the hemoglobin to which we have referred, and which interfered with its oxygen-carrying capacity. We await anxiously the careful investigations of Drs. Holmquist and Edson on this feature of the cases which they have studied.

The treatment generally followed, we believe, was that of an ordinary severe bronchopneumonia. Oxygen was used in all of the severe cases, with differing but generally unsatisfactory results. In a severe case of Dr. Cooper's, aconite in minim dosage, with vigorous external counter-irritation, was followed by marked relief. This was the patient who finally died in the relapse on the twenty-second day, these measures proving ineffectual at this time.

To us it seems that the one most important factor in determining the question of death or recovery was the severity of the initial exposure. Theoretically, the inhalation of ammonia at the time of exposure should be of benefit, but this would hardly be practicable. We believe that, at present, stimulation, the use of oxygen when indicated, atropia for the edematous exudation, vigorous counter-irritation, with eliminative and supportive measures offer us the most hope in the primary attack. If recovery occurs, we would strongly urge suspension from work, rigorous avoidance of exposure, and residence for some months in a warm, equable climate, such as one would choose for a feeble patient with chronic bronchitis. Those of the Denver cases who were able to follow such a course are at present working, and without serious symptoms. In view of the lessened pulmonary resistance, we would suggest also the adoption of effective measures for the avoidance of infection by the bacillus of tuberculosis.

If we can not save all of those exposed in the performance of their perilous duties to the inhalation of dangerous gases, we should insist the more strongly on the avoidance of anything tending to bring about relapse, which we have noted to be so fatal.[4] It is likely that we can save more lives by strict attention to this feature than by any other single measure.

We are under especial obligations to Dr. W. H. Sharpley, Health Commissioner of the City and County of Denver, for his encouragement and assistance in the preparation of this paper; to the Denver Fire Department, and to the physicians who attended other cases than those which we saw, who have so generously given us their aid.

DISCUSSION.

Dr. N. H. Neilson, Milwaukee, Wis., reported having the same experience in Milwaukee, two years ago, showing the effects of the fumes of nitric acid by inhalation. The men who were engaged in putting out the fire returned to the station house, and within one or two hours—six or seven hours after the exposure—they began to have symptoms of pulmonary congestion, as described in the paper. Some of the men died and some recovered for a time, but had relapses. Some had a chronic bronchitis and were sent to Texas, where they recovered—all but one, who became despondent and committed suicide. In these cases it was believed that the pulmonary edema was the result of the local irritation on the mucosa and not a systemic effect. Whatever systemic effect there was was from the inflammation alone. Dr. Neilson did not think that a report of the cases was published.

Dr. John H. Musser, Philadelphia, said that the autopsy findings in such cases do not support the belief in the presence of any pleuritis, and he, therefore, asked as to the occurrence of the inflammation and the vomiting.

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[3] Denver Medical Times, 1898.

[4] In the case of a fireman, quoted by Dr. Hall in the above-mentioned article as dying from inhalation of smoke containing fumes of some undetermined acid, the death was also during relapse, being directly caused by pulmonary embolism from a phlebitis of the leg, at the end of the fifth week.

Dr. G. W McCaskey, Fort Wayne, Ind., thought that the symptoms in these cases indicate a degree of exhaustion unusual with a simple irritative bronchitis, and that the evidence points toward a severe toxemia as a result of absorption of the poisonous gases. It is peculiarly the function of the respiratory tract to absorb gases, and it seems only reasonable to suppose that such absorption would take place and should be considered in accounting for the very severe constitutional symptoms manifested by these cases.

Dr. J. N. Hall, Denver, remarked that it was rather difficult to report these cases with any degree of accuracy, because they fell into the hands of about twenty physicians. Dr. Cooper took care of six and Dr. Hall three. A pleuritic friction was well marked, beginning within twenty-four hours. Necropsies were made by the coroner's physician, and the bodies were buried before Dr. Hall knew of the deaths. He, therefore, had no opportunity to study the pathology. The toxemia was similar to what would be expected from inhalation of chlorin, formaldehyd or smoke from burning grass, but no case pointed definitely to a toxemia from the acid itself. Dr. Hall could not explain the vomiting. Although none of those exposed were supposed to be sick enough to keep in, at the end of twenty-four hours they came back to the hospital.

Special Article

IMMUNITY.

CHAPTER XXI.

BOTULISM.

Bacillus Botulinus.

Botulism is a peculiar form of meat poisoning in which the nervous system is involved principally. From twenty-four to thirty-six hours after meals, salivation, ptosis, dilatation of the pupils and paralysis of the ocular muscles develop and death from bulbar paralysis occurs rapidly in from 25 to 30 per cent. of the cases. In the event of recovery, convalescence may extend over weeks or months. In 1895 V. Ermengem investigated a ham which had caused 50 cases of botulism, and isolated from it an anaërobic, spore forming bacillus, which produces a soluble toxin capable of causing the entire symptom-complex of the disease.[1]

Infected Meats.

The organism possesses flagellæ, has limited motility, grows only in alkaline media, and in contrast to most pathogenic organisms prefers a relatively low temperature (18-25° C.). It is probably on account of its physiologic activity at such temperatures that it is able to produce its toxin in meats which have been kept in a cool place. It is found in decomposed ham and various sausages (Leberwurst and Blutwurst.) The Germans speak of the disease as Wurstinfektion. The disease occurs especially in some European districts in which improperly preserved or raw meats are eaten. The bacillus appears to gain access to the meat after the animal has been killed. V. Ermengem investigated two hams from the same animal. One was under anaërobic conditions being covered with brine while the other was exposed to the air; only the former was toxic. The organisms may be absent from the superficial portion of the meat, but abundant in the deep portion. Aside from its occurrence in meat nothing is known of the life history of the bacillus. The term ichthyosismus is applied to a similar or identical disease which is caused in Russia by salted fish.

Toxin.

The disease is caused by the toxin which has already been produced in the meat and not to the activity of the organisms after it has reached the alimentary tract (v. Ermengem). If an extract of the meat is made with water and the bacteria removed from the latter by filtration, the fluid shows characteristic toxicity for animals. This may be used for determining the presence of botulism toxin in suspected meat. The guinea-pig is the most susceptible animal. The spores of the bacillus are relatively susceptible to heat, being destroyed by a temperature of 80° C. for one hour.

According to v. Ermengem, the bacillus does not proliferate in the body, nor does it produce toxin vigorously at body temperature, hence he considers it to be a strict saprophyte—a pathogenic saprophyte.

The toxin is taken up by the circulation from the alimentary tract and is not destroyed by the gastric and pancreatic juices, differing in this respect from the toxins of diphtheria and tetanus. It is prepared artificially by growing the organism anaërobically in suitable bouillon and subsequently sterilizing the fluid by filtration. Like the other soluble bacterial toxins, it is susceptible to the action of air and light, and is destroyed by a temperature of from 60 to 70° C.

Pathogenesis.

That the toxin has a special affinity for the nervous tissues is evident from the symptoms of the disease. An emulsion of nervous tissue when mixed with the toxin absorbs or neutralizes it and the ganglionic cells are found to be degenerated in fatal cases of infection. The toxin, however, appears not to be so selective in its action on the nervous tissue as the toxin of tetanus, for in botulism degenerations of the glandular organs, and of the vascular endothelium with consequent hemorrhages are characteristic anatomic findings. On the basis of clinical evidence man is very susceptible to the intoxication. Dogs, rats, and cats are relatively immune. The toxin is pathogenic by subcutaneous or intravascular injection.

According to v. Ermengem, the bacilli when inoculated subcutaneously do not proliferate, but are taken up by the phagocytes immediately or after they have been carried to other organs. Animals which have recovered from infection or which have been immunized, acquire rather strong immunity to subsequent inoculations, the immunity being antitoxic.

Prophylaxis and Antitoxin.

The prophylactic measures consist in the avoidance of poorly preserved and improperly cooked meats, especially sausages. Botulism would seem to be very rare in this country where raw meats are not used extensively.

The antitoxin (Kempner) has proved of some value in animal experiments but its commercial preparation has not been warranted on account of the rarity of the disease.

BACILLUS PYOCYANEUS.

Pathogenic Properties.

For a long time it was thought that the "bacillus of blue pus" was of no importance as an infectious agent for man although its pathogenicity for animals had been recognized experimentally. It is found with some frequency in the blood and organs of man at autopsy, when death has resulted from some other infection or chronic disease; in such instances it is supposed that a so-called "agonal invasion" by the organism has occurred. During recent years, however, several cases of primary pyocyaneus septicemia have been observed, the bacillus having been obtained from the blood in pure cultures during life or from the blood and organs shortly after death. It has been found as the sole organism in meningitis and vegetative endocarditis. Some of the cases indicate, however, that a previous lowering of resistance, as in tuberculosis and syphilis, is important for general invasion by the bacillus. It has been found several times in suppurative processes in the middle ear, and would seem to be either the cause or a strong adjuvant in some cases of severe enteritis, especially in children. In systemic infections, the symptoms are typhoidal in character with high temperature, diarrhea and a tendency to the formation of hemorrhages in the skin and internal organs.

Its Manifold Activities.

The *Bacillus pyocyaneus* is widely distributed and that it causes so few infections is probably due to its low pathogenic power. It is an organism of manifold activities. It produces a substance which when exposed to the air, assumes a bluish tint, on which the color of the pus depends. This substance, pyocyanin, is soluble in chloroform from which it

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[1] Other pathogenic organisms, especially *B. enteritidis* and *B. coli communis*, and recently the paratyphoid bacillus, have been found in poisonous meats. The term botulism formerly was applied to various forms of meat poisoning.

Ferments.

may be precipitated in crystalline form. Under proper conditions the organism also forms a fluorescent pigment. It produces a strong peptonizing ferment and coagulates milk. It is rich in autolytic ferments, which digest the bacilli in old cultures. As stated in a previous chapter, Emmerich and Löwe have identified a bacteriolytic ferment, pyocyanase, which dissolves the anthrax bacillus and other organisms. The ferment nature of this substance is in some doubt; it resists the boiling temperature. Dietrich thinks its action is due to the production of osmotic changes.

Toxin and Endotoxin.

It secretes a true soluble toxin for which it is possible to obtain an antitoxin, and has in addition an endotoxin for which an antitoxin cannot be obtained. Old cultures contain a hemolytic agent (pyocyanolysin) of an alkaline nature, which resists boiling and is not a true toxin, since immunization with it does not yield an antitoxin.

The soluble toxin of *Bacillus pyocyaneus* is not produced in large amounts. It differs from the other soluble toxins in its resistance to heat, withstanding a temperature of 100° C. for five minutes. It produces the symptoms which are characteristic of infection with the living organism, the principal anatomic changes being parenchymatous degenerations and ecchymoses, the latter supposedly being due to degenerative changes in the endothelium of the vessels.

Antitoxic and Bactericidal Serums.

By immunizing with young cultures grown on an agar surface a serum which is purely bactericidal is obtained. On the other hand if an older toxin-containing bouillon culture be used, the serum is both bactericidal and antitoxic. The serum which is purely bactericidal has no power of neutralizing the toxin. The toxin solution contains not only the true toxin but also quantities of the endotoxin which were liberated as the dead bacilli were dissolved. On this account the antitoxin fails to destroy the toxicity of the toxin solution completely, and this becomes manifest when to a multiple of the single fatal dose, a corresponding amount of antitoxin is added. Under the conditions a fatal amount of endotoxin may be present even though the true toxin is completely neutralized. Although a strong antitoxin may be obtained it would appear to be of little practical importance because of the rarity of infections by the bacillus.

Agglutination.

Infection in man has caused the formation of agglutinin in several instances, but it has been absent in others. An agglutinating serum is readily produced by artificial immunization.

HAY FEVER.

Dunbar separated from the pollen of various grains a toxin which is able to precipitate typical attacks of hay fever in those who are susceptible, having first demonstrated that the crude pollens cause the disease. The pollen from the following are said to contain the toxin: Rye, barley, wheat, maize (corn), dog's tail, couch-grass, millet, rice and some others. The so-called autumn-catarrh which is common in America may be due to a slightly different toxin coming from the golden-rod or other autumnal flowering grains.

The Toxin.

The toxin usually is associated with certain starch-like granules which are contained in the pollen, but it occurs also in pollens which do not contain these granules. It may be extracted with water or salt solution; it is precipitated by alcohol, resists the boiling temperature, and is of an albuminous nature.

Pathogenesis.

When the crude pollen reaches the conjunctiva, nasal or bronchial mucous membranes, the toxin is dissolved out by the secretions and absorbed by the lymphatics. When applied to the conjunctiva it causes swelling, redness and lachrymation. It is carried by the tears to the nose and here causes excessive secretion, swelling of the mucous membrane and sneezing. It may become distributed systemically as a result of absorption from the free surfaces and cause the asthmatic attacks and general symptoms which are seen in the intoxication. When injected subcutaneously into the arm both the asthmatic attacks and coryza-like symptoms were produced.

Antitoxic Serun (Pollantin.)

Dunbar's antitoxic serum (pollantin) is obtained by the immunization of horses with the toxin. It seems to be of undoubted value in a certain percentage of cases, but fails unaccountably at times. It is, perhaps, most effective when used in the prodromal stage, the attacks being thereby prevented. Its failure in certain instances may be due in part to variations in the efficacy of the antitoxin against the toxins of certain pollens. Again in certain individuals the affinity of the toxin for the tissues may be unusually great so that a more vigorous use of the remedy might have effected improvement.

Lübbart and Prausnitz published statistics of 285 cases of which 65 were autumnal. In ordinary hay-fever the serum gave positive results in 57 per cent., partially positive in 32 per cent. and negative results in 11 per cent. of the cases. In autumnal catarrh, 70 per cent. were positive, 19 per cent partially positive, and 11 per cent. negative.

The small bottles of antitoxin are accompanied by a pipette with which from one to several drops may be instilled into the eye or the nose.

The serum does not cure permanently and one who is susceptible should carry a vial for immediate use during the hay-fever season.

SNAKE-VENOM.

The poison apparatus of snakes consists of a secretory gland on each side which communicates with the tubular fang by means of a duct. In the passive state the fangs are directed backward on the roof of the mouth, but when the animal strikes their points are made to project forward and the poison is forced through the canals by muscular compression of the sac. The venom is a glandular secretion.

Toxic Constituents.

The venoms of different snakes vary a great deal in their toxic properties. The most important constituents are those which attack the nervous system (neurotoxin), the blood corpuscles (hemolysins and hemagglutinins) and the endothelium of the blood vessels, causing hemorrhages (hemorrhagin, an endotheliotoxin. The three are independent.

The neurotoxin causes death by paralysis of the cardiac and respiratory centers. The hemolysin appears to be of less importance as a cause of death.

Variations in Toxic Properties and Cytotoxins.

The venoms of the cobra, water-moccasin, daboia and some poisonous sea-snakes are essentially neurotoxic, although they have strong dissolving powers for the erythrocytes of some animals. In studying the hemolytic powers of the venoms of cobra, copperhead and rattlesnake, Flexner and Noguchi found cobra venom to be the most hemolytic and that of the rattlesnake the least. They attribute the toxicity of rattlesnake poison chiefly to the action of hemorrhagin. The same authors studied the action of different venoms on the cells of various animals and by absorption experiments found independent cytotoxins for the testis, liver, kidney and blood. Not only was there a distinct cytotoxin for each organ of an animal, but also for the same organ of different animals, results which speak for a remarkable complexity of venom. Certain venoms contain a leucocytic toxin.

Ferments.

That venoms contain proteolytic ferments is shown by their ability to digest gelatin and fibrin. This power may be related to the softening of the muscles which has been noted clinically in cases of poisoning. The rapid decomposition of the body which follows death by snake-poisoning is associated with a decrease in the bactericidal power of the blood, which, according to Flexner and Noguchi depends on fixation of the complement by the venom.

Amboceptors and Complement.

The hemolysin and neurotoxin, and perhaps other cytolysins of venom, consist of amboceptors which in themselves are non-toxic; they become toxic only through the aid of complements which are present in the body of the poisoned animal. In this instance, complement which usually is a source of protection becomes a source of danger to the animal possessing it. Not only does ordinary serum-complement serve for activation, but Kyes discovered that cells (erythrocytes) may contain another kind of complement, an "endocomplement," which activates the amboceptors after the latter have combined with the cells. Flexner and Noguchi found that this also was the case with the neurotoxic amboceptors.

Cobra-lecithid.

Kyes showed that the endocomplement of erythrocytes which activates the hemolytic amboceptors consists of lecithin, and in the reagent glass was able to bring about chemical union of the hemolysin and lecithin: the product is called cobra-lecithid. A solution of lecithin in chloroform is shaken for several hours with a dilute solution of venom. During this time the hemolysin has combined with the lecithin, and when the chloroform is drawn off and mixed with either, the cobra-lecithid comes down as an amorphous precipitate. It may be further refined but its exact chemical nature appears to be undetermined.

This treatment accomplishes another important result in that the hemolysin is separated quantitatively from the neurotoxin, the latter remaining in the watery solution. Immunization with the neurotoxin isolated in this way causes the formation of a specific antineurotoxin (Elliot.) The neurotoxin may also be abstracted from the venom by treating the latter with the nervous tissue of a susceptible animal (Flexner and Noguchi.)

The hemolysin is distinct from the hemagglutinin and the latter may be eliminated by treating the venom to from 75° to 80° C. In the action of venom on erythrocytes agglutination precedes hemolysis.

Toxoids and Antivenins.

The toxins may be converted into toxoids by heat or treatment with chemicals. Immunization with toxoids causes the formation of antitoxins. Radium is said to destroy the toxicity of venom (Phisalix). The antivenin of Calmette is obtained by the immunization of horses with a mixture of venoms (80 per cent. cobra, 20 per cent. viperine venom) which are attenuated before injection. Six months are required to produce a strong serum. The claim of Calmette that his serum is effective against all snake-venoms is erroneous. It neutralizes those venoms the toxicity of which depends largely on neurotoxins and hemolysins, but has little influence on rattlesnake poison the essential toxin of which is hemorrhagin. Antivenin for the rattlesnake and water-moccasin may be prepared by immunization with the corresponding venoms which have been attenuated by weak acids. Noguchi has produced serum of such strength that it promises to be of practical value in the treatment of rattlesnake bites.

As indicated previously, the action of venom is preceded by no appreciable incubation period, hence an antitoxin to be effective must be administered not later than a few hours after the bite has occurred. Noguchi found in relation to antivenin for the rattlesnake that the antitoxin necessary to save was quadrupled three hours after intravenous injection of two fatal doses of venom. Fortunately the venom is less toxic when introduced subcutaneously.

Clinical Reports

FIVE CASES OF PFEIFFER'S GLANDULAR FEVER ("DRUESENFIEBER").

HELIODOR SCHILLER, M.D.,
CHICAGO.

INTRODUCTION.

During the latter part of April and May, I saw five cases of the so-called "Pfeiffer's *Druesenfieber*," or as Neuman called it—idiopathic swelling of the glands of the neck. All these cases lived in the same ward of the city, and several physicians told me that they had similar cases at the same time. Hence I am justified in speaking of a real epidemic of "Pfeiffer's *Druesenfieber*."

NARRATION OF CASES.

I shall select and describe three of my cases, and will then endeavor to draw some conclusion concerning the character, the pathology and course of this not at all well-known disease.

CASE 1.—April 6 I was called to visit a girl 12 years old. The mother told me that the child had complained of chills and headache the day before and the following morning of a pain in her throat. The evening before they had perceived a swelling on both sides of the neck.

Examination.—I found the temperature 101.8 degrees, the pulse 108. The tonsils were red and somewhat enlarged. The whole throat was red and on the right arcus palatoglossus was a yellow spot the size of a pea surrounded by a red arc which looked aphthous. The glands on the right side of the neck were somewhat enlarged; those on the left swollen to the size of an apricot, especially the glands on both sides of the proximal part of the sterno-cleido-mastoideus, and there again the posterior ones were very much swollen, of rather hard consistency and not very tender. There was no exanthema on the skin or mucosa of the mouth nor was there a scarlet tongue. A smear and culture taken from the above described spot showed streptococci. There was pronounced breathing through the mouth. The mucosa of the anterior part of the nose was red but otherwise normal. The heart, lungs and other organs were found normal. The general condition of the patient was not impaired. Urine was normal.

The whole picture, while apparently that of nothing else than a streptococcus angina, nevertheless looked different than this disease in that the rather sudden and immense swelling of the glands with rather mild changes in the throat and the small tenderness of the glands clearly pointed out that we had more than a common sore throat to deal with.

Course of Disease.—On the following day the symptoms were still milder. The highest temperature was 101 degrees; the pain in the throat had lessened, the neck hurt only in moving, but the swelling of the glands, while larger, was, however, not more painful.

The third day brought somewhat higher temperature, 102.4 degrees, pulse 96. The redness in the throat and the yellow spot had nearly disappeared. The spleen and liver could be felt enlarged. The size of the swelling of the glands was the same. The child felt very well, although an obstinate constipation caused some trouble. The urine was found normal.

On the fourth day the highest temperature was 99.8 degrees. On the fifth day 101 degrees. The swelling of the glands, concerning mostly the glandulæ cervicales, but also the jujulares, was a little larger than a boy's fist.

On the sixth day the highest temperature was 100.2 degrees. On the seventh day the mother called me and said she thought her daughter must have matured in that the urine looked bloody. The napkin which was applied, however, did not become stained. The examination of the urine showed 0.2 per cent. albumin, many white and red blood cells and some blood casts. The amount of urine during the next twenty-four hours was six ounces. It was of a reddish color, showing the typical microscopic picture of a most acute hemorrhagic nephritis. On the eighth day the temperature was 103.2 degrees. The spleen and liver were very much enlarged and soft. The abdomen was somewhat tender, the mucosa of the throat normal.

The glands on the right side were a trifle smaller, but those on the left more swollen and more tender, but still hard. A somewhat sero-purulent discharge of the nose appeared. The general condition and appearance of the patient was rather good. The microscopic examination of the discharge from the nose showed diplococci and streptococci, but neither diphtheria nor influenza bacilli. The patient was lively and did not complain much.

The ninth day did not bring much change. Eleven ounces of urine of the same nature as before were passed in twenty-four hours. On the tenth day thirteen ounces; on the eleventh day thirty-four ounces, and on the twelfth fifty-two ounces, containing an enormous amount of epithelial blood and granulated casts. The temperature still reached 102.4, the swelling of the glands was somewhat reduced, the consistency hard and tender, but not as much so as swollen glands in case of angina. The spleen and liver were reduced in size. Very obstinate constipation was present, but the general condition of the patient was good.

April 27 the temperature, after a lytic declivity, was normal as was also the urine. The spleen and liver could not be palpated any longer and still the glands were swollen and hard and somewhat tender.

By June 21 the glands were reduced to the size of a bean, but were no longer painful or tender. The glands just behind the proximal part of the left sterno-cleido-mastoideus was the most persistent and is still the largest. The glands on the right side had disappeared entirely.

Case 2.—A boy eight years old, recently arrived from South Africa, lived two blocks south of the first patient. His attack began with fever, headache, weakness, vomiting and slight pain in the neck and throat.

Examination.—When I saw the patient May 10, two days after the onset of the disease, his temperature was 103.8 degrees; his pulse 134. He looked very sick. His tongue was rather dry, the tonsils, and especially the throat, were red and swollen. The glands on both sides of the neck, but especially those on both sides of the proximal part of the left sterno-cledio-mastoideus were very much swollen, of a harder consistency, and somewhat tender. The mother says that the glands were swollen before the boy even complained of the pain while swallowing. No exanthema was present on the skin or mucosa of the mouth.

The microscopic examination of a smear taken from the tonsils showed streptococci and bacilli, which seemed to be Pfeiffer's influenza bacilli. No diphtheria bacilli could be seen. No culture was made in this case.

Course of Disease.—During the next five days the temperature fluctuated between 102 and 105 degrees, and the pulse between 118 and 142. The spleen and liver became rapidly enlarged, the abdomen tender, the glands on the neck swelled to the size of a medium large orange, and the single glands could easily be isolated and felt. A mouth breathing and obstinate constipation could be observed. The heart and lungs were found normal; the urine also normal.

On the fifth day the urine became bloody and on the sixth day showed all symptoms of an acute hemorrhagic nephritis. The amount of urine during the next twenty-four hours was eight ounces; on the seventh twelve ounces and on the eighth sixteen ounces. The temperature on the morning of the eighth day fell to 101 and rose in the evening to 104 degrees. The pulse varied between 118 and 140 degrees. Constipation and mouth breathing continued. The throat, however, was normal again. There was some seropurulent discharge from the nose containing influenza bacilli. The spleen and liver were still very much enlarged and one and a half inches below the arc of the ribs inpalpable. The general condition was rather serious. The patient had no appetite and refused all nourishment. Gradually the condition of the urine became better, but the swelling of the glands remained the same. The fever did not disappear; on the contrary increased to 105.1 degrees May 26. The tenderness of the swelling on the left side increased, while the swelling on the right side gradually disappeared. In spite of the fact that no fluctuation could be felt, and that the glands felt rather hard, a trial puncture was made, and in a depth of nearly one and one-half inches pus was found. Along the needle an incision was made and a deep abscess opened and about two teaspoons of thick pus removed and drains applied.

The pus contained pure cultures of influenza bacilli. Nevertheless the fever and swelling of the glands did not decrease. In fact the condition of the urine became worse at times. The fever did not disappear until June 11. The urine contained albumin until June 5. At present the glands have their normal size.

Case 3.—A girl eleven years old and living one block south of Case 1, fell sick May 23. Her case also started with chills, pain in the abdomen, neck and throat. Shortly after the beginning of the disease the mother observed a swelling on the neck.

Examination.—I saw the child the same afternoon and found her temperature 102.6 degrees, her pulse 118. The tonsils and mucosa of the throat were red and the glands of the left neck, especially the cervicales, were greatly swollen and somewhat tender. There was no exanthema. A smear taken from the tonsils showed staphylococci, diplococci and influenza bacilli, but cultures made two days later did not show influenza bacilli.

Course of Disease.—For three days the temperature stayed between 102 and 104 degrees and disappeared lytically. On the seventh day the temperature was normal. The swelling of the glands stayed for two weeks. The spleen and liver were swollen, but no albumin was found in the urine. Constipation was not so marked in this case, but breathing through the mouth and discharge from the nose was evident. The other two cases were on the same order as case three; but no influenza bacilla were found.

RESUME OF CASES.

A short résumé of these three cases shows us that this disease begins with chills, headaches, fever, sometimes vomiting, pain in the throat, and that there follows, shortly after the onset of the disease, swelling of the cervical glands, and especially of the glands behind and before the proximal end of the sterno-cleido-mastoideus; that the disease is accompanied by fever, and in severe cases acute hemorrhagic nephritis occurs in the early stages, that is, from the fifth to the eighth day; the spleen and liver become enlarged, the swelling and redness of the tonsils and throat disappear rapidly after from three to five days, while the swelling of the glands stays for weeks. The tumor of the glands has a rather characteristic form. There is no marked periadenitis. Each gland can be palpated separately. The glands feel rather hard and not very tender; the tenderness cannot be compared with the tenderness of glands accompanying tonsillitis. No exanthema is found on the skin or in the mouth.

DIAGNOSIS.

Diphtheria could be excluded as could also tuberculosis, as the whole course of the disease pointed against tuberculosis infection in that the glands disappeared soon entirely, a thing which does not occur in a case of tuberculosis after an elapse of only a few weeks. The picture of this disease is so entirely different than that of tonsillitis or any other disease in the throat that it would be useless for me to mention all the differences. We have here the picture of a general infection, a sepsis, starting from some place in the throat, then quickly involving the cervical glands of the neck and in turn the whole body with acute tumor of the spleen and liver; and in severe cases with most acute nephritis. Glands other than those of the neck have not been found involved.

Some authors claim that the tenderness of the abdomen is caused by the swelling of the mesenterial glands, but as postmortems are lacking, we cannot confirm this statement. We do know, however, that in typhoid fever the enlarged mesenterial glands do not produce a marked tenderness.

Each of these three cases had somewhat enlarged hypertrophic tonsils. In three of these case I found in a previous examination the nasopharyngeal space full of adenoid vegetations.

There is no doubt that the infection starts either from the throat, tonsils or the nasopharyngeal tonsil without causing any pronounced local affection except a local redness. The involved glands speak more for the latter place.

The microscopic examination in one case showed streptococci; in another, influenza bacilli, as well in the nose and throat as in the pus of the glands; while the third showed staphylococci, streptococci and influenza bacilli in the throat.

I am sorry to say I could not make any blood cultures, as in private practice such things are not easily possible. While there is no doubt as to the nature of the disease and the place of infection, there has been nothing definite found that would give us an idea as to the cause. Further clinical examinations will in all probability throw a light on this. The presence of influenza bacilli is certainly very interesting. They would at the same time easily explain the epidemic character of the disease and the rarity of suppuration.

Not one of my cases was deadly, nor did a death occur among the several cases reported in the literature, in spite of the fact that the character of the disease in some of them was very serious.

Some authors lay stress on the constipation, believing that the infection occurred from the intestines. This, however, was at the time when the intestines were accused of everything during childhood.

The treatment applied was inunction with Credé's ointment and treatment of the accompanying nephritis.

This should only be considered a preliminary report. In the near future we hope for more detailed reports from physicians who have hospitals near at hand with better opportunities for closer examinations and clinical investigations.

FRACTURE OF PATELLA.

RESTORATION OF FUNCTION IN SPITE OF NON-TREATMENT.

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J. L., Mexican, laborer, aged 40, entered Santa Fé Hospital April 17, with fracture of left patella at lower one-third.

After remaining in bed until April 20, when the extreme effusion had somewhat subsided, on being told of the length of time necessary for repair, entailing several weeks' confinement to bed, the patient precipitately left the hospital, refusing further treatment or advice.

On May 23 he again presented himself at the hospital for the necessary certificate of discharge for reinstatement in his position. The leg had been in constant use in the interim. No effort at treatment or immobilization having been made.

In the absence of effusion, the deep sulcus separating the fragments was clearly demonstrated, the distance between the fragments being about three-quarters of an inch, with apparently a thin band of ligamentous union present. The function, however, was remarkably good, there being almost complete extension and no inconvenience in walking.

The question naturally arises, how much or how little advantage is gained by the conventional period of rest in the recumbent position, usually prescribed in the expectant or non-operative method of treatment of fracture of the patella?

EXOMPHALOS SUCCESSFULLY OPERATED ON.

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DUNN, N. C.

Umbilical hernia occurs in three different forms:

1. The umbilical hernia of infants and young people, due to the weakening of the umbilical cicatrix, which yields before intra-abdominal pressure. This condition rarely persists until adult life and is readily amenable to treatment.
2. The umbilical hernia of adults, usually due to a protrusion of omentum or intestine through an opening in the linea alba either just above or below the umbilicus. This form usually requires operative treatment.
3. The congenital umbilical hernia, or exomphalos, which is an exceedingly rare condition due to the imperfect closure of the abdominal walls, as a result of which the intestine is not entirely withdrawn into the abdomen at birth, but is found in a cavity at the base of the umbilical cord, which is bulbous and enlarged. If the condition is overlooked it may be included in the ligature with which the cord is tied, causing fatal strangulation or a fecal fistula at best. If left untreated until the cord is separated, the peritoneal cavity will be laid open and septic peritonitis will ensue. The only treatment is immediate laparotomy, reduction of the intestine and closure of the umbilical opening by sutures.

Exomphalos is subdivided into different forms by some authors, the classification depending on the degree and amount of intestine protruded. The case reported in this paper was one of the most serious, the hernia being strangulated, invaginated and irreducible.

History.—The infant was assisted into this world by an old midwife, who had the good judgment, however, to tie the cord above the enlargement. Strange to say, the cord did not separate until the twelfth day, leaving the knuckle of intestine unprotected. The wise old midwife told the parents the condition was not uncommon, that she often treated them and ordered that the tumor be covered with a vaselin cloth until it "dried up." The hernia grew larger every day, but Nature came to the rescue of the infant by adhesions taking place between the outer layer of intestines and the edge of the umbilical ring, thus closing in the abdominal cavity; invagination continued to take place, however, by means of the inner coil of intestine forcing itself outward until strangulation and adhesions took place between the layers of the invaginated portion.

Consultation.—About the fifteenth day, two fecal fistulæ were found, one at either end of the T-shaped protrusion. Dr. S. P. J. Lee was called in on the seventeenth day, and requested Dr. O. L. Denning and myself to assist him operate; this we did on the eighteenth day.

Operation.—On examination, the invagination was found to be irreducible and strangulated from constriction at the umbilical ring, so the adhesions at this point were broken and a laparotomy performed. About six or eight inches of the ileum were resected and the divided intestine was fixed by enterorrhaphy and simple suturing, i. e., the ends were brought together and stitched with Lembert sutures. After this the mesentery was stitched where a V-shaped portion had been removed; the intestines were replaced and the operation completed by stitching the peritoneum and closing the abdominal wall. The bowels were kept locked by opiates for six days, when the infant had a natural evacuation, and since then has had an uneventful recovery.

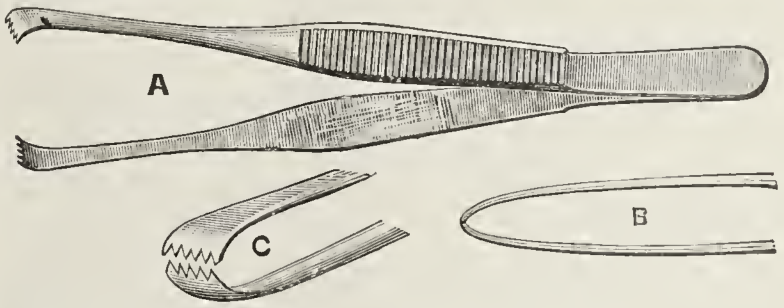
This case is reported on account of its rare occurrence and the almost universally fatal termination. The success attending this operation, which was done under adverse circumstances, should be an incentive to others not to give up hope as long as life exists in the patient.

New Instrument

THE COLUMBIA TISSUE AND INTESTINAL FORCEPS.

I. S. STONE, M.D.
WASHINGTON, D. C.

The accompanying cut shows a most satisfactory pair of forceps for general and special surgical work. They have been used at the Columbia Hospital for many years and have heretofore been made to order by instrument makers, but do not appear in any instrument catalogue nor have they ever been described, as far as I know. These forceps are valuable in pelvic work, especially in intestinal surgery, as they will not easily puncture the intestine as will rat-tooth forceps. In fact, they are like the delicate finger touch which permits handling without injury. The arms open widely above the teeth, allowing plenty of space for grasping sponges or larger portions of muscle or fat, or the handling of any organ within the abdomen. They are six inches in length, but longer forceps can be made as ordered.



Apocynum Cannabinum.—In malarial conditions with torpid liver, in jaundice, in all cases where there is a sallow, yellowish skin, with foul tongue and clay-colored feces, it has a peculiarly happy effect. In fact, in all so-called bilious conditions it is almost a specific. It unlocks the secretions of the liver, secures a free discharge of bile, and becomes, if pushed, an efficient cathartic, although it is primarily an ideal cholagogue.—G. S. Chalmers, of Galesburg, Ill., in *Therapeutic Gazette.*

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NERVOUS STRAIN.

It seems to afford a kind of pleasure to this generation to look on itself as the victim of high pressure. We hear much on all sides of the hurry of the time, of the pace that kills, and of the disturbing and demoralizing effects of modern industrialism and commercialism. There is no lack of remedies for the existing order. We are told that we must concentrate, not dissipate, our energies, that we must forsake city life and return to nature in the guise of a $60,000 farm, or at least of a commuter's garden; that we must altogether give up trying to be rich and must rest content with the common lot. It is no wonder that a dazed old lady was heard to remark: "A little while ago we had to live the strenuous life, then it was the simple life, and now it is the equitable life."

Yet the feeling that life for most involves a large measure of struggle and output of nervous energy is not peculiar to our time. Each generation looks back with longing on the calmer life of its predecessors. There are those who think they would prefer the relative absence of "modern conveniences" enjoyed by our immediate forefathers. Mr. Austin Dobson has cast a glamour of sentiment over "stage-coach days" and "teacup times" that almost persuades us that travel by steam and conversation by telephone are the main causes of modern unrest. Seventy-five years ago, however, we find Sainte-Beuve writing with a touch of envy of the earlier and more placid times of Madame de Sévigné, and regretting that "the world moves so fast in our day." So it seems always to have been. The time in which a man lives appears to him full of intense activity, crowded with sense impressions and their appropriate reactions, and he is ready to fancy that his predecessors experienced no such flood of new sensations and were not subject to the wear and tear that he feels so keenly. As a matter of fact, has life ever been really exempt from stress? Someone has remarked that the rival monsters of cretaceous days would probably have expressed the opinion if the opportunity had been granted them that their own age was one of nervous strain.

It is possibly true that we of the present day are more definitely aware of the sources of anxiety and trouble, that we are more alive to the reports received and answers given by the central nervous system and that "strain" is more of a reality to us than to a less subtly molded race. James has somewhere referred to the case of a Russian peasant who, catching his thumb in a cleft tree in the forest and being unable to release himself or to obtain help, pulled his hand away, leaving thumb and tendons behind, much as a wild animal might do. Such an exploit would doubtless be impossible to a more "nervously" constituted individual. The question here is: Are we able to demand from our nervous systems as much as our less civilized progenitors?

After all, however, the truth may be that we are inclined to attribute to nervous wear and tear and to an overwhelming multitude of sense impressions, ills that actually are due to other causes. Modern life is a pretty complex affair and it is not easy to analyze it into the factors that tend to modify human existence. How little is known, for example, about the influence of the sedentary occupations which have replaced outdoor activity to so unprecedented an extent in the modern world. Again, until very recently no serious attempt had ever been made to discover the effect on the general health of the town-dweller produced by the smoke and dust which irritate his mucous membranes and assail his sense organs so great a part of the time; in a degree, the mechanism of disturbance is of a nervous character, but this factor is not ordinarily considered as entering into the causes of nervous breakdown. Once more, how profound is the depth of our ignorance in respect to the effect on health of the relative cheapness, abundance and variety of foods now available to the moderately well-to-do. If the pleasures of the table are more common and tempting than ever before, to what extent is this fact responsible for ailments sometimes classed as nervous and ascribed to high pressure?

The root of the matter is that neither modern life nor urban life is to be blamed indiscriminately for what is popularly denominated nervous strain. If certain factors at present little studied and poorly understood are tending to increase diseases of a nervous type, they may be found on investigation to be such as lie within the control of the individual more commonly than has been supposed. There is still room for him to consider what the Roman emperor meant who said that even in a palace life may be led well.

DECLINING VIRULENCE AND ADVANCING PARASITISM.

In our discussions of infectious diseases in their various aspects, we generally assume the attitude of an observer at close range whose field of vision fails to include many features of general interest. The biologic problems, for instance, presented by pathogenic bacteria in their adaptation to parasitic existence are quite likely to escape the attention of the physician who is more directly concerned with the immediate outcome of actual infections; yet problems of this kind offer many attractive subjects for thought to those who wish to go below the surface of the things with which they are dealing. In his address before the Congress of Arts and Science in St. Louis last fall, Theobald Smith discussed certain phases of microbic parasitology from the broad biologic or comparative point of view in a way that can not but interest many physicians and place more or less familiar phenomena in a new light.[1]

In the first place, Smith points out a phase in the life history of pathogenic microbes that has not received much consideration, namely, that in order to preserve the species in accord with general biologic laws, microbes as they adapt themselves to parasitic life gradually eliminate aggressive weapons, such as free toxin production, which may have been an entering wedge, because they are of no direct benefit to them, inasmuch as destruction of the host lessens their opportunities to perpetuate themselves. In support of this view, it is pointed out that strictly invasive bacteria—tubercle bacilli, typhoid bacilli, glanders bacilli, etc.—do not produce diffusible toxins, the injury, often largely local, produced by these organisms being caused rather by poisons set free on disintegration of their bodies, whereas the toxin-producing bacteria—diphtheria bacilli, tetanus bacilli—in reality are not invasive bacteria, but live on the surface of the body, or, as in case of the tetanus bacilli and other spore-bearing organisms, produce disease, so to speak, accidentally, and not as progressive parasites, because their continued existence may be regarded as assured by vegetation and spore formation outside of the body. Microbes that are able to defend themselves against the destructive efforts of the host produce chronic diseases like tuberculosis, leprosy and glanders. Others that lack the means of successful defense are either destroyed or adapt themselves to live on the skin or mucous membranes whence they may, as special opportunities offer themselves, enter the tissues as "occasional disease producers."

In connection with this it is of special interest to note the excellent mechanisms of elimination of many microbes, so far as continuing the life cycle in new subjects and thus perpetuating the species is concerned. In diphtheria, pneumonia, typhoid fever, dysentery, cholera, gonorrhea, influenza, the acute eruptive diseases, etc., the specific organisms either from the beginning or sooner or later reach the surfaces of the body, whence they are passed on to other hosts by different methods of direct or indirect contact. Smith believes also that certain bacteria after a period of active vegetation may pass into a latent stage provided with a protective envelope which enables it to pass to a new host at the same time as the metabolism of the bacterium and consequent diseases are suspended. This hypothesis suggested itself to him as he studied the gradual adaptation of bovine tubercle bacilli to vigorous growth in artificial media; the protective substance being assumptively slowly lost.

Smith explains the fact that the mortality rate of human infectious diseases always show that the odds are against the invading microbe in this interesting way: The more virulent the microbe, the more rapid the death of the host and the less the opportunity for escape. Consequently, there will be a selection in favor of those microbes that vegetate slowly and in tissues situated so that they can escape to new hosts. As this process of selection of the less virulent races, accompanied with the gradual weeding out of the most susceptible hosts, continues, the mortality from infectious diseases falls, without necessary diminution in morbidity. Pasteur's failure to exterminate the rabbits of Australia by means of a highly virulent bacillus of rabbit septicemia may be accounted for by the fact that the stricken rabbits, with their blood full of bacilli, offered no means for inoculating others and hence the virulent race of bacilli perished. We know that the pandemics of influenza soon give way to sporadic cases and now the influenza bacillus seems to play the rôle of a secondary invader in many of the respiratory diseases.

Many other interesting points in this remarkable address can not be recapitulated at this time. We see clearly that the microscopic parasites offer complex problems similar to those of higher forms of life; problems the continued study of which by able thinkers may lead to the formulation of broad generalizations and laws of direct interest to medical men. We believe that Smith has indicated the existence of a law of this kind that will help us to understand better certain aspects of infectious diseases, namely, the law of declining virulence, and hence mortality with an advancing parasitism.

THE SMEGMA BACILLUS AS A DISTURBING FACTOR IN THE DIAGNOSIS OF GENITOURINARY TUBERCULOSIS.

The use of bacteriology by the clinician while of great value is fraught with danger to the uninitiated. In no case is this more true than in tuberculosis, for, when the tubercle bacillus was first discovered it was unique in its tinctorial reactions, and, though other "acid fast" organisms have been discovered since, the knowledge of them has not as yet become widely diffused among the profession. Some of these bacteria occur in diseases which, like leprosy, are rare among us, and so are of no practical importance to the clinical pathologist. A few, like the organisms occasionally found in the sputum in pulmonary gangrene, may be misleading, though very rarely so. One acid-fast organism, the smegma bacillus, may lead to the gravest mistakes in the diagnosis of genitourinary tuberculosis. This organism was first discovered as a result of the investigations which followed the announcement by Lustgarten of his discovery of the cause of syphilis.

Whether or not Lustgarten's bacillus and the smegma bacillus are identical, is still more or less a matter shrouded in mystery, though it seems likely that the organisms are the same. Whether the smegma bacillus represents a single organism is also doubtful, the great variation in morphology suggesting that it does not. The important point to be kept in mind is that the organism is more widely distributed over the body than was at first thought, and that with the ordinary methods of staining it resembles the tubercle bacillus. Of especial importance is the fact that the smegma bacillus is found, often in large numbers, beneath the prepuce in the male, and about the vulva and clitoris in the female, and that from these places it can gain entrance into the urine and thus be mistaken for the tubercle bacillus.

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[1] American Medicine, 1904, vol. viii, p. 711.

Many of the text-books on bacteriology assure us that the smegma bacillus can be differentiated from the tubercle bacillus both morphologically and by its staining reactions. Those who care to look into the voluminous literature of the subject will soon discover that nearly every writer has a method of differentiation of his own, and incidentally states that other methods are of little or no value. The conclusion to be drawn is obvious; none of the reported methods of differentiation are invariably sufficient. While in the majority of cases an experienced bacteriologist can probably differentiate between the two organisms, there are cases in which such differentiation is impossible except by animal inoculation, and even this occasionally fails. This is due to the fact that some smegma bacilli resemble tubercle bacilli and have exceptional resistance to acids, while on the other hand, some tubercle bacilli decolorize with exceptional facility, especially in alkaline urines.

So far as the female is concerned, the difficulty of excluding smegma bacilli is very great, as the shortness and size of the urethra permit their ready introduction into the bladder, and catheterization instead of eliminating the error may even increase it. In the male the danger of large numbers of smegma bacilli getting into the urine is less, though as Young and Churchman[1] have recently shown, this is far from being a negligible quantity. These writers have shown that even the cystoscopic examination may be deceptive in cases simulating tuberculosis clinically and in which there are smegma bacilli in the urine. From the study of a large number of cases, these observers conclude that the danger of confounding smegma and tubercle bacilli in the male can be eliminated by very careful cleansing of the glans, followed by careful urethral irrigation, after which the urine may be passed without danger of contamination. The smegma bacillus invades the male urethra in but small numbers, and is not found in the normal posterior urethra or bladder. It is in patients with small numbers of tubercle bacilli in the urine, however, that a certain diagnosis is most necessary, and the method of Young and Churchman seems to make this possible.

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[1] Amer. Jour. of the Med. Sciences, July, 1905.

YELLOW FEVER.

The yellow fever situation in New Orleans became rather serious during the week. Up to August 1 there had been reported 304 cases, with 62 deaths. Unfortunately the disease has spread to three points in the new American quarter of the city and to at least three outside parishes. Alarmed residents are leaving for the north, and the city's commerce is at a standstill on account of quarantines. As not all newspaper tales are to be believed, possibly no credence is to be given to that one which lends a ray of humor to the otherwise grave plight of the city, and which alleges that to combat the infected Louisiana mosquitoes Governor Vardarman of Mississippi has ordered the state artillery to the Louisiana frontier. In one of the reports of the Board of Health there appeared the significant statement that it seems probable that yellow fever has existed since May among those Italians so ignorant that they do not call a physician when ill. The difficulties met by the health authorities in the way of cleaning up ancient, overcrowded dwellings and caring for their infected, poverty-stricken inhabitants are tremendous. The business men are circulating a petition asking that the United States Public Health and Marine-Hospital Service be requested to assume full control of the situation. As noted last week, a most commendable harmony of effort prevails as between the local, state and federal officials. A remarkable and relentless popular war is being waged against the mosquitoes, the community having with unusual readiness accepted the new etiology of the disease. Under the conditions existing in New Orleans, stamping out the epidemic will be a great sanitary triumph. Medical men everywhere have strong sympathy for those physicians actively engaged in the conflict.

ANOTHER INSANITARY CONDITION.

The *Scientific American* calls attention to the danger attending the wearing of adulterated leather. A large amount of cheap leather is weighted with glucose and barium, especially the latter, so that when the weight test is applied such adulterated leather may pass as first-quality material. Leather so treated, however, has the peculiar quality of absorbing moisture freely and retaining it to an extreme degree. The result is that a shoe made of this chemically-treated material is in actuality never dry. Even in the driest weather the perspiration of the feet is sufficient to render the footwear dangerous, as such natural moisture collects on the inner sole. Day after day, it seems, some new point is brought up concerning which commercial enterprise makes it necessary for the physician to be on his guard.

A WARNING.

We find it necessary again to warn members and subscribers not to pay money to unauthorized persons. Some physicians in Iowa report payment of money to one W. H. Taylor, who is not an agent of The Journal. Each agent of The Journal who is authorized to make collections carries a letter written on Journal paper introducing him by name and stating that he is authorized to receive money. This is duly signed and bears the official seal of the American Medical Association.

SANITATION AND SUBSISTENCE AT PANAMA.

Important as is the reformation of the sanitary conditions on the Panama Isthmus, a corollary well worth all serious attention is the feeding and housing of the large body of working men soon to be engaged there. The *Army and Navy Journal* makes a very sensible suggestion, that, inasmuch as it was a logical step to turn over the matter of sanitation to the Medical Department of the Army, it would be appropriate also to give to the subsistence department the care of the vast number of employes. Experience in the Philippines indicates the ability of this department to accept such a problem. Our contemporary referred to above declares that the army ration used in the Philippines is equal and possibly superior to that of any other army in the world. It is certainly not desirable to have the feeding of our Panama laborers farmed out, with the caterer's profit and not the health of the employes the first consideration. The suggestion is a good one.

SURGICAL PRACTICE ON THE LOWER ANIMALS.

It is reported that one of the leading medical schools of the East has adopted the plan of using the lower animals for surgical practice by students and that the method is found to have some decided advantages over the use of the cadaver for this purpose. Of course the anatomic conditions are not the same, but operating on a living animal will require the same conditions of asepsis and technic as would be adopted with a human being, and is, therefore, more instructive to the incipient surgeon. So far as possible all the formalities that are observed with the human being are practiced, clinical histories are kept, effects of anesthesia are noted and in case of a death of the subject a formal autopsy is made and added to the records. We do not see why this is not a thoroughly rational method of instruction and we will not be surprised to see it adopted by many other institutions. Of course, it need not entirely displace operations on the cadaver. The two methods can usefully supplement each other. When we consider how many valuable surgical operations have previously been tested on the lower animals before they were first attempted on the human subject it is a little surprising that this method of instruction has not been earlier and more generally adopted.

A FAMILY TRAGEDY.

The following is a true tale of a recent happening in an American city. It is a good story to relate to patients and legislators in the campaign against nostrums and against adulterated foods and drugs. A respected clergyman fell ill, and the family physician was called. After examining the patient carefully, the doctor asked for a private interview with the patient's adult son.

"Harry," said the doctor, "do you know what is the matter with your father?"

"No. We sent for you to tell us that."

"Well," the physician said, "I am sorry to tell you that your father undoubtedly is suffering from chronic alcoholism."

"Chronic alcoholism! Why that's ridiculous! Father never drank a drop of liquor in his life, and we know all there is to know about his habits."

"Well, my boy, it's chronic alcoholism, nevertheless, and at this present moment your father is drunk. How has his health been recently? Has he been taking any medicine?"

"Why, for some time, six months I should say, father has often complained of feeling unusually tired. A few months ago a friend of his recommended 'Peruna' to him, assuring him that it would build him up. Since then he has taken many bottles of it, and I am quite sure that he has taken nothing else."

In this connection it might be added that a very prominent anti-saloon worker, a clergyman, lately said that in shame he was compelled to admit that he had run across indubitable proof that there are ministers of the gospel who receive pecuniary commissions from the makers of alcoholic nostrums whose wares they recommend! Than this there can be no worse form of graft. The time is here for the organized profession to join hands with all other workers and organizations, whether anti-saloon leagues, temperance unions, or courageous anti-nostrum publications, to set a definite limit to the progress of respectable and innocent intemperance.

BRAIN TUMORS AND BRIGHT'S DISEASE.

At first sight there does not seem to be much chance that two such pathologically different conditions as intracranial tumor and Bright's disease could be confounded, and yet the error of mistaking one of these conditions for the other is not very uncommon. After all, the two conditions have many symptoms in common, especially if a brain tumor be in a so-called silent region. In both there may be headache, vomiting, eye changes, and even localizing symptoms, such as unilateral convulsions or hemiplegia. It is true that in certain forms of Bright's disease, those in which there is edema, anemia, and large amounts of albumin in the urine, mistakes are not likely to occur, but in the chronic interstitial form, in which edema may be slight or absent, and in which the urine may contain little and at times no albumin, the matter is not so simple. The differentiation is still further complicated by the fact that in certain cases of nephritis the eye lesions are not those usually associated with Bright's disease. The white patches in the neighborhood of the macula, the retinal hemorrhages, the vascular changes, in short, the lesions described as albuminuric retinitis, may be absent, and in their place the choked disc so commonly associated with intracranial pressure may occur. The fact that choked disc is not so very common in nephritis has hardly yet been realized by the majority of practitioners, though it was emphasized many years ago in this country by Burr, and has recently been called attention to by Bramwell.[1] The fact of the matter is that we are too apt to make our diagnoses on a few prominent symptoms, and if these are very apparent we often allow them to lull us into a state of diagnostic security, and fail to carry out a routine examination. All the facts in a given case must be considered before a definite conclusion can be reached when there is a question between the two conditions mentioned. Not only the presence of albumin and casts in the urine, but also its daily amount, its color, and its specific gravity are of importance. In just those cases of Bright's disease in which the urinary findings are difficult of interpretation we are apt to get marked cardiovascular changes, thickened vessel walls, high arterial tension, and hypertrophy of the left ventricle. The optic changes can often be differentiated by an expert, but even the elect have been deceived at times. The character of the headache may be of value; as a rule it is not so severe in Bright's disease as in brain tumor, and often is not so sharply localized. Still, there are cases of Bright's disease with localized headache, and even with localized tenderness on percussion. The age of the patient is important, as cirrhosis of the kidney is relatively infrequent in the young. The point to be remembered, as Bramwell justly remarks, is never to make a diagnosis of brain tumor until Bright's disease has been excluded. As we have pointed out before in these columns, and the fact can not be too often stated, the successful diagnostician is not he who generalizes from the salient points in a case, but he who studies every detail and reaches a conclusion only after a careful and exhaustive study of all the attainable facts. There are many more mistakes due to carelessness than there are due to ignorance.

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[1] Clinical Studies, vol. iii, part 2.

MEDICAL TEMPTATIONS.

The mails regularly bring to physicians an unusual number of opportunities to make "good money" without any effort. Thousands of dollars are thus spent for printing and postage. Does it pay? If not, why does the deluge keep on coming? It is to be feared that among ill-educated and unsuccessful physicians there are always some who grasp at every such chance. The form of these appeals to cupidity or to discouragement frequently runs: "We desire to secure a representative physician in your locality who will become associated with us as a specialist for the treatment," etc. "The special advantages of this treatment can be secured for his private practice by one physician in your locality." Through "an advantageous business arrangement," other physicians are permitted to furnish patients. Eminent men, some with the degree of D.D., furnish a very large proportion of the usual "testimonials." Of course the business is conducted on "thoroughly ethical lines," and "the management is on a strictly business basis." "Special medicines" of unknown composition are to be administered by the favored medical victim of this form of nostrum swindle. Nearly always it is an incorporated company that handles these affairs nowadays. The impersonality of the corporation is so convenient. As the education of physicians improves and as organization brings us into closer touch one with another, there will be less and less chance for success in appeal to medical men to throw away their scruples and for mere money to engage in projects of questionable morality. In the meantime it is not a bad idea to keep reminding ourselves of the various seductive forms in which these unprofessional temptations appear.

Medical News

CALIFORNIA.

New Hospital.—The permit for the erection of the first building of the Samuel Merritt Hospital, Oakland, has been issued, and work on the building, which is to cost $50,000 will soon begin.

Compilation of Health Laws.—The State Board of Health has issued a 28-page pamphlet which contains a compilation of all the health laws of the state, including the laws governing the registration of vital statistics.

Banquet Hirschberg.—The San Francisco Society of Surgeons of the Eye, Ear, Nose and Throat tendered a banquet July 17 to Dr. Hirschberg of Berlin, and to Dr. A. E. Bulson, Jr., Fort Wayne, Ind., secretary of the Section on Ophthalmology.

Personal.—Dr. Curtis C. Falk, Eureka, has been appointed a member of the medical board of the naval militia of California.——Dr. H. Gordon Bayless, Los Angeles, sailed for Europe July 8.——Dr. Fred C. Gerlach has been elected president and Dr. Henry J. B. Wright, secretary and health officer for the San Jose Board of Health.——Dr. W. Harriman Jones, Long Beach, has been elected instructor in gynecology in the Los Angeles College of Physicians and Surgeons.

CONNECTICUT.

Jacobi Addresses Yale Graduates.—The annual address in medicine at Yale University commencement, June 26, was delivered by Dr. A. Jacobi, New York City, whose subject was "The Era of Therapy."

State Board Changes Location.—The office of the State Board of Health has been changed from New Haven to Hartford. At a meeting July 7 Prof. William H. Brewer, New Haven, was re-elected president.

For Tuberculosis Ward.—More than $4,000 has been subscribed for the tuberculosis ward of the Hartford Hospital. The annual expense of maintenance of the ward is $15,000, of which the state provides one-half.

Personal.—On July 1 Dr. Wyeth E. Ray was appointed associate medical director of the Travelers' Insurance Company, Hartford. On July 8 he was also commissioned assistant surgeon, with rank of ensign in the Naval Battalion, N. G., Conn.

Gift to Hospital.—Litchfield County Hospital, Winsted, has received a donation of $25,000, to remain as a permanent fund, one-half of the income of which is to be paid to the donor during his life and the balance devoted to the needs of the hospital.

GEORGIA.

Herb Doctor Fined.—Theo. Pollard, a "herb doctor" of Columbus, was fined $5 or 25 days on the chaingang, for vagrancy, June 9.

New City Hospitals.—The new Brunswick City Hospital was opened to receive patients July 1.——The Americus City Hospital opened for the accommodation of patients May 15.

Colored Professions Organize.—The Georgia Colored Medical Association, whose membership includes pharmacists and dentists, organized at Savannah, July 12. The following officers were elected: President, Dr. Eustace E. Green, Macon; vice-president, Dr. George N. Stoney, Augusta; treasurer, Dr. William F. Penn, Atlanta; secretary, Dr. Palmer Floyd, Savannah, and assistant secretary, Dr. J. A. Moore, Macon.

Personal.—Dr. Lewis M. Gaines, Atlanta, has been made professor of anatomy and physiology in the Medical Department of Wake Forest (N. C.) University.——Dr. and Mrs. W. A. Monnish, Atlanta, have sailed for Europe.——Dr. Obadiah C. Gibson and Miss Gibson, Macon, have started on a trip through the west and Mexico.——Dr. John W. Caldwell has been elected physician for the first district of Augusta.——Drs. Emil Van Goidtsnoven and Arnold H. Lindorme have been sworn in as assistant city physicians of Atlanta.——Dr. Maury M. Stapler, Macon, has sailed for Europe.

ILLINOIS.

Gravely Ill.—Dr. Lewis D. Dunn, one of the oldest and most respected practitioners of Moline, is critically ill.

Fined for Illegal Practice.—John Peattie, Peoria, was fined $100 and costs, July 3, for practicing medicine without a license.——Dr. Davis, Hamilton, was recently fined $50 for practicing medicine in Missouri without a state license.

Hospitals' Funds Grow.—The building fund for the Deaconess Hospital, Peoria, now amounts to more than $11,100.——The recent bazaar held at Aurora for the benefit of the City Hospital netted more than $8,300 in cash for the institution.

Personal.—Dr. Wesselius Davis, Wapella, who was shot in May by Truman Mason, is convalescent, and will soon resume practice.——Dr. Robert C. Bourland, Rockford, has been appointed assistant surgeon, Illinois National Guard, and assigned to the Third Infantry.——Hon. O. J. Bailey, Peoria, has been re-elected president of the Cottage Hospital Association.

Chicago.

Presentation to Dr. Reynolds.—Employes of the Department of Health presented to Dr. Arthur R. Reynolds, retiring commissioner of health, a gold watch, suitably inscribed.

Less Smallpox.—During last week six unvaccinated children were removed to the isolation hospital. No death occurred during the week and 47 patients still remain in the hospital.

The Week's Deaths.—The total number of deaths for last week was 518, equivalent to an annual mortality of 13.57 per 1,000. Acute intestinal diseases caused 112 deaths; consumption, 65; heart diseases, 48; violence, 41; nephritis, 31 and pneumonia, 25.

Health Conditions Again Normal.—There were 105 fewer deaths reported during the week ended July 29, than during the previous week and the annual rate of 13.57 per 1,000 is 17.3 per cent. less for the week and 15.5 per cent. less than the average July ratio of the previous twelve years. This average was 16.06 per 1,000, the highest having been 26.94 in 1893 and the lowest 14.34 in 1900. The rate for the twenty-nine elapsed days is only 13.16 and the month promises the lowest July rate on record.

MARYLAND.

Faculty Meets at Deer Park.—It has been decided to hold the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland at Deer Park, September 21 and 22.

Dying, Forgives Debtors.—Dr. Michael K. Warner, who died in Baltimore July 22, destroyed all his account books before his death, saying that he did not wish anyone to be pressed for debt by his administrators. He had no doubt those would pay who were able to do so and they knew what they owed.

Woman's College Troubles.—A bill asking for the appointment of a receiver for the Woman's Medical College has been filed by Drs. John G. Jay, Joseph T. Smith, Pearce Kintzing and Eugene F. Cordell, former members of the trustees and faculty of the college, and at present creditors of it. These physicians hold notes of the college which the present trustees are said to have refused to recognize or to pay.

Abortionists Sentenced.—Dr. Stephen Crowe and William Ward, alias Dr. Edward Jackson, convicted last month of committing manslaughter by criminal operation, were sentenced on June 30, in the criminal court, to the penitentiary. The former to ten years and the latter to four years.——A woman has also been sentenced to three years in the penitentiary for performing a criminal operation.

MISSOURI.

St. Louis.

New City Hospital.—The mayor, health commissioner and building commissioner visited and inspected the new buildings July 25. It was announced that the patients would be transferred about August 1.

New Frisco Hospital.—Ground was broken last week for the new Frisco System Hospital. It is on Laclede Avenue, near 49th Street. It is expected to cost $175,000. The chief surgeon of the System, Dr. George W. Cale, will take up his quarters at this hospital on its completion, although the old hospital located at Springfield, Mo., will still be used.

New Smallpox Hospital Demanded.—The North St. Louis Medical Society recently discussed the subject of the need for better quarters for patients in quarantine, and a special committee appointed by the chairman presented the following resolutions:

> No effective, general vaccination law exists, and a considerable part of the public seem to be ignorant of the great prophylactic value of vaccination.
>
> Most people, as is well known, dread the idea of being sent to quarantine over rough country roads, in an ordinary ambulance, in zero weather, to an ancient hospital, concerning which all sorts of stories are afloat, and with whose occupants the relatives can communicate by telephone very indirectly at best. These people, therefore, in every way contrive to conceal their cases from the health authorities, they and their relatives spreading the disease and remaining a fruitful source of infection.
>
> The method of disposing of the corpses of smallpox patients is antiquated and unsatisfactory.

The resolutions follow:

> That we urge the proper authorities to take the necessary steps to have a new hospital (thoroughly modern and up to date in its equipment), erected on a suitable spot within the city limits, or, if insisted on, at the present quarantine station.
>
> That, in this hospital, wards and private rooms be provided, and those able and willing to do so, be requested to pay for the services; but no tipping of attendants should be permitted.
>
> Well-heated electric car ambulances should be used to convey the patients to the hospital, closed covered stretchers being used to carry the patient on from his residence to the ambulance.
>
> The hospital should be provided with telephones for the convenience of the patient's relatives.
>
> The bodies of patients dying at the hospital should be turned over to the relatives of the dead for burial, after being thoroughly embalmed and disinfected, and placed in a metal, hermetically-sealed casket.
>
> An effort should be made to secure for the entire country a suitable uniform vaccination law.

Health Commissioner in the Courts.—Last week the deposed health commissioner, Dr. John H. Simon, through his attorneys, applied for a writ of certiorari in the Circuit Court. Judge Kinsey issued a temporary restraining order, ousting the temporary health commissioner and re-instating Dr. Simon. Thereupon, the city council appeared in court and asked that the judge amend his order, allowing the temporary appointee to remain in office until the case be fully heard in the circuit court in October. The court took the case under advisement; in the meantime, by agreement among the interested parties, the temporary appointee was allowed to administer the affairs of the department until the court sees fit to stand by or amend his order. The upheaval in the health department has attracted universal attention to the fact that politics is playing too great a rôle in the management of the department. The peculiar nature of the municipal ordinances under which the department operates leaves the destiny of the public health department absolutely in the hands of the politicians. This state of affairs has occasioned a movement to be set on foot by the local physicians to change the old laws and enact new provisions by which the department will be in the hands of a non-partisan board elected by the people, like the school board. In the fall, the medical societies will take up the matter and endeavor to bring order out of chaos.

NEW JERSEY.

Personal.—Dr. Edward Guion of Atlantic City has been elected Health Officer of that city.——Dr. M. L. Somers has been elected Secretary of the Atlantic City Board of Health, vice Dr. Edward Quinn, resigned.——Dr. C. E. Shaffray, house physician at the Alexain Brothers Hospital, Elizabeth, has resigned and will practice in Logansport, Ind.

Club Holds Annual Meeting.—At the annual dinner of the Physicians' and Surgeons' Club of Jersey City, the retiring president, Dr. Henry H. Brinkerhoff, was presented with a silver loving cup by members of the club. The following officers were elected: President, Dr. Christopher D. Hill; vice-president, Dr. Henry J. Bogardus and secretary-treasurer, Dr. N. Frederick Feury.

An Argument for Reciprocity.—The State Board of Medical Examiners of New Jersey at its annual meeting passed the following resolution:

> WHEREAS, The educational and examining standards for the medical license of New Jersey are at least equal in all respects to those of New York and in some respects higher; and
>
> WHEREAS, The degree of unreasonableness in the matter of interstate indorsement on the part of New York can not be further ignored; therefore, be it
>
> *Resolved,* That on and after October 16, the date of the next regular meeting of this board, the indorsement of medical licenses by New York will be suspended until further notice.

Special Cars for Consumptives.—The Board of Health of Jersey City objects to consumptive patients from Manhattan using the ferries and waiting rooms while en route to the sanitarium at Otisville. A resolution has been adopted ordering that all such cases shall be received in Jersey City only from such means of transportation as has been set apart for this special purpose, and that the patients shall not be allowed to use the public passageways and waiting rooms, and that special cars must be provided. All cars or trains used for this purpose must be thoroughly fumigated, and disinfected, under the direction and supervision of the Board of Health.

NEW YORK.

Addition to Ossining Hospital.—This institution is to be provided with a new building as a memorial to the late Mrs. Frederick Potter. The building will cost $60,000.

Certified Students.—Before a student can enter Albany Medical College he is required, under the new rules, to present a certificate of good moral character signed by two physicians of good standing in the state in which the matriculant resides.

Examiners Appointed.—The State Board of Regents has made the following appointments to the State Board of Medical Examiners: Drs. George R. Fowler, Brooklyn and A. Walter Suiter, Herkimer, representing the Medical Society of the state of New York.

League Meeting.—The Physicians' League of Buffalo held its annual meeting Wednesday, June 30. Officers were elected as follows: President, Dr. Jane W. Carroll; vice-president, Dr. Jeanette M. P. Himmelsbach, and secretary and treasurer, Dr. Katherine S. Munhall.

Stony Wold Sanitarium Needs Funds.—This institution has at present 85 patients suffering from tuberculosis. There are many more applications for admittance than can be accommodated and in spite of the numerous entertainments recently given a plea for more money is sent out and another entertainment will be given August 9.

New Instructors at Albany.—The following instructors have been added to the faculty of Albany Medical College: Drs. Edwin F. Sibley, surgical pathology; Dr. Silas L. Filkins, anatomy and prosector; Dr. La Salle Archambault, neurology; Dr. Leon K. Baldauf, and George E. Bailby, histology, and Drs. Charles H. Gerhard and Harold E. Robertson, bacteriology and pathology.

Personal.—Dr. and Mrs. Harry E. Battin, Corning, sailed for Europe July 18.——Dr. Mary O'Malley, Binghamton, has been appointed on the resident staff of the Government Hospital for the Insane, Washington, D. C.——Dr. Walter A. Scott, Niagara Falls, has qualified as coroner of Niagara County.——Dr. Harlan A. Harris, Syracuse, has been appointed assistant surgeon in the Mexican Central Railway Hospital at Agnascalientes, Mexico.——Dr. William C. Krauss, Buffalo, has been appointed one of the managers of the Buffalo State Hospital.

Medical Library Association Formed.—The Medical Library Association of Jamestown was organized July 25, with 20 charter members who elected the following officers: President, Dr. Era M. Scofield; vice-president, Dr. Jane L. Greeley; secretary, Dr. John W. Nelson, and treasurer, Dr. John H. Wiggins. Any physician who is a graduate of a regularly incorporated medical college is eligible to membership. The admission fee has been placed at $10, which also pays the dues for the first year. The dues thereafter will be five dollars a year, the money to be devoted solely to the purchase of books, cases, etc.

New York City.

Seaside Hospital Opened.—St. John's Guild has opened its Seaside Hospital at New Dorp, L. I., where sick children in need of hospital care will be received during the summer.

Personal.—Dr. and Mrs. William K. Draper sailed on the *Grosser Kurfeurst* July 24.——Dr. H. T. Johnson sailed on the *Carpathia* July 24.——Dr. John Vanderpoel sailed on the *Campania* July 29.

Hospitals Inspected.—Mayor McClellan, accompanied by the Health Commissioner, Dr. Darlington, has made an inspection of Bellevue Hospital, the Willard Park Hospital and the Board of Health Building.

Offered Post With Peary.—Dr. Irving D. Williams, who was Peary's first choice as surgeon of the Arctic ship *Roosevelt*, was obliged to decline the position on account of the ill health and age of his father.

For Mount Vernon Hospital.—An auxiliary organization for this institution has raised sufficient money by entertainments to furnish a room in this institution, purchase a portable house for contagious diseases, equip a drug room and provide several other necessities.

Hospital Motor Day.—It has been proposed by a motorist that, after the fashion of Hospital Sunday, one day during the summer be devoted by motorists to taking out in their motor cars children and patients of hospitals who are unable to walk, and that the day be known "Hospital Motor Day."

Accidents.—Dr. Lucy C. Jones fell from a window of her house July 7, fracturing her skull and both arms and dislocating her hip. Notwithstanding the gravity of her injuries she is making good progress toward recovery.——Dr. T. Harris Cherry, ambulance surgeon at the Hudson Street Hospital, was seriously injured in a collision between the ambulance and a street car July 4.

Contagious Diseases.—There were reported to the Sanitary Bureau for the week ending July 22, 365 cases of tuberculosis, with 150 deaths; 347 cases of measles, with 14 deaths; 181 cases of diphtheria, with 26 deaths; 128 cases of typhoid fever, with 26 deaths; 62 cases of scarlet fever, with 3 deaths; 39 cases of cerebrospinal meningitis, with 20 deaths, and 43 cases of varicella.

City Will Get Its Sanitarium.—The Board of Health, undaunted by its failure to secure a site for the establishment of a sanitarium for the care of the city's tuberculosis patients, has been at work in the towns of Greenville and Mount Hope, Orange County and has secured permission to establish the sanitarium in this vicinity. Option has been secured on several thousand acres of land so that this sanitarium seems to be assured.

Typhoid Spreads.—About 30 cases of typhoid fever have occurred out in Bath Beach and Bay Ridge, sections of Brooklyn. The outbreak of this disease is attributed to the scarcity of water and lack of proper sewage. A new sewer system is now in process of construction. Dr. Billings of the Health Department is of the opinion that the milk is also a source of infection and he recently has had several dairies in the vicinity closed.

For City Filters.—Health Commissioner Darlington has sent a report to the Mayor urging the establishment of a filtration plant for purifying the water furnished to the city. He asserts that the impurities found are largely responsible for the large number of cases of typhoid fever and diarrhea on the weekly records of the department. He has prepared a statistical table showing that the death rate from these diseases has been decreased in cities which have filtration.

Modern Municipal Tenements.—The College Settlement, together with several other settlements, have joined with the Christian Workingmen's Institute in the endeavor to have a bill passed by the legislature authorizing the city to purchase sites of buildings which are a menace to public health and to erect model tenements in their places. It is urged that it would prove more satisfactory for the city to build these tenements, which would be a paying investment, and would in addition be better built.

Rigid Quarantine.—Dr. Alvah Doty, Health Officer of the Port, says he will take nothing for granted; and on the least suspicion passengers and crews will be detained. Merchant vessels will be inspected as rigidly as those carrying passengers, especially those bringing fruits. A number of passengers from vessels coming from the south having high temperatures have been detained in quarantine during the past week, though none have been suspected of having yellow fever.

Gifts to Coney Island Hospital.—The hospital for children suffering from bone tuberculosis at Sea Breeze has at present room for only 45 patients and there are more than 4,000 cases of bone tuberculosis in the tenement house district of New York. The trustees are trying to raise a fund which will enable them to erect a hospital to accommodate 400 patients. Jacob Riis has investigated the work and spoken so highly of it that one philanthropist has given $10,000, another $5,000 and another has pledged $1,500 annually for ten years toward the maintenance of the institution.

PENNSYLVANIA.

Opinion on Privilege to Practice.—Attorney General Carson has furnished the State Medical Society with the opinion that it is unlawful for a physician not a licentiate, to take charge of the practice of a legal practitioner during the latter's temporary absence.

Illegal Practitioner Prosecuted.—Through the Lancaster City and County Medical Society, A. B. Potts of Columbia, was prosecuted and held for trial in court on the charge of having violated the law of this state in not having a license or being registered.

Fire in Hospital.—A fire in the storeroom in the Presbyterian Hospital, Allegheny, July 5, caused considerable excitement, but very little damage, thanks to the presence of mind of Dr. W. C. Dice who prevented the spread of the flames by closing the door of the storeroom.

Gifts to Hospitals.—Alfred O. Deshong presented the Chester Hospital with a sanitary cottage for the use of patients suffering from contagious diseases. Mr. Deshong recently presented the Board of Managers with a cottage, but learning that another cottage was needed for female patients, he doubled his gift.——Mr. and Mrs. A. B. Farquhar have given $1,000 to the York Hospital to be applied to the remodeling of the Nurses Home.

Beef Trust Methods to be Investigated.—It is asserted that a thorough investigation of the methods of the beef trust in Pennsylvania will be instituted by Dr. B. H. Warren, State Dairy and Food Commissioner. The investigation is to be made with a view to determine the character of adulterants or preservatives used to preserve meat. It is asserted that the meat has been colored by washing with colored coal tar dyes, dipped in formaldehyd solution, dusted with sulphites, and washed in boracic acid solution.

To Inspect River Water Supply.—The officials of the State Health Department and the Philadelphia Board of Health will make a thorough investigation of the sources of pollution of the Schuylkill River and other streams in the vicinity of the city. The investigation will begin at Reading, Pa., August 31, and all contributing streams from there to Philadelphia will be carefully examined, and all factories and industrial establishments along the Schuylkill will also be investigated to determine the disposal of their refuse. The inspection will be supervised by Dr. A. A. Cairns, chief medical inspector, and Dr. Seneca Egbert, who will examine the water near the city.

Personal.—Dr. Samuel G. Dixon, the new State Commissioner of Health, established his offices in the Capitol, Harrisburg, July 25.——Dr. John C. Watkins, Oil City, has been appointed lieutenant and assistant surgeon N. G. Pa., and assigned to the Sixteenth Infantry.——Dr. J. A. Kearney, Archbald, has sailed for Europe.——Drs. Charles P. Alderman and Oscar C. Fox have gone on duty as resident physicians at St. Joseph's Hospital, Reading.——Dr. John Repp, Greencastle, has been made Resident Physician at the Philadelphia General Hospital.——Dr. Fred C. Johnson, Bradford, has been appointed chief of the division of inspecting, quarantining and disinfecting.——Dr. Bert K. Vanattan, Franklin, has been made major and surgeon of the Second Brigade.

Philadelphia.

Illegal Practitioner Sentenced.—Philip H. Pierson, alias "Dr." White, pleaded guilty to performing an illegal operation on Elizabeth Johnson and sentenced to eighteen months in the county prison.

Dr. Hare's Narrow Escape.—Dr. Hobart Amory Hare narrowly escaped drowning in Delaware Bay July 22. He was on a yachting trip, and in a severe storm his yacht struck on the shoals and sank. The doctor was rescued by the crew of an accompanying yacht.

For Europe.—Dr. and Mrs. Arthur A. Bliss sailed July 25.——Dr. J. Norman Henry sailed July 26.——Dr. F. R. Packard sailed July 26.——Dr. Paul J. Sartain sailed July 22.——Dr. Ashley P. C. Ashhurst sailed July 1.——Dr. and Mrs. Arthur McGinnis sailed on the *Majestic* July 12.

Milk Crusade.—Owing to the excessive mortality among infants in this city during the recent weeks, 12 farmers who shipped milk to the city daily were arraigned on charges of adulterating milk. The medical inspectors have discovered that several dealers adulterate the milk by the addition of water. The farmers were arraigned at the instance of Food Commissioner Warren, and 5 were held in $500 bail for court.

Personal.—Benjamin Lee has been appointed assistant commissioner of health.——Dr. Ross D. Paterson has been appointed Assistant Physician to Philadelphia Hospital, vice Dr. Fred G. Johnson.——Dr. Charles K. Mills has been appointed consulting neurologist and Dr. Samuel McClary pathologist to the American Oncologic Hospital.——Dr. W. A. Van Voorhis, who had been arrested, charged with malpractice and committed to jail by the coroner, was admitted to bail in the sum of $2,500 by Judge Audenried, July 28.——Dr. Walter J. Cathrall was fined $10.00 and costs July 11 for assaulting a street car conductor.

War on Flies and Insects.—In order to protect the public health against the dissemination of disease, the health inspectors of the city have been directed to visit all milk houses, butcher shops, grocery and candy stores and instruct the owners to place a covering over meats, vegetables, candies, cakes and other edibles exposed for sale in order to protect them from flies and other insects. The following resolution was adopted at the meeting of the health board:

> *Resolved,* That the chiefs of the divisions of nuisances, milk and meat and cattle inspectors are hereby instructed to visit all retail dealers exposing for sale in front of their properties meats, fish, vegetables, fruits, candies and cake, and to instruct the proprietors that a covering of some suitable material must be provided to protect the goods so exposed from flies and insects generally.

Health Report.—The deaths from all causes during the week aggregate 477, as compared with 608 during the previous week, and 434 for the corresponding week of last year. Last week 233 infants succumbed to intestinal diseases, but the deaths this week fell to 183. The principal causes of deaths were: typhoid fever, 19; whooping cough, 5; diphtheria, 4; tuberculosis, 42; cancer, 17; apoplexy, 17; tetanus, 1; heart disease, 40; acute respiratory diseases, 32; suicide, 5; enteritis (under 2 years), 95; enteritis (over 2 years), 7; Bright's disease, 31; inanition, 2; marasmus, 13; and accidents, 7. There were 123 cases of contagious diseases reported, with 25 deaths, as compared with 142 cases and 22 deaths for the preceding week.

WISCONSIN.

Sanitarium Incorporated.—Milwaukee Sanitarium for Tuberculosis has been incorporated without capital stock by Dr. Uranus O. B. Wingate and others.

Must Report Accidents.—Under the new law regarding the registration of vital statistics, physicians are obliged to report accidents, in addition to marriages and deaths. A compensation of twenty-five cents is provided for each registration.

Personal.—Dr. Gustavus I. Hogue, acting assistant surgeon, U. S. Army, has resigned and will practice in Milwaukee.——Dr. Wilbur T. Sarles, Sparta, has gone to Europe for the summer.——Dr. John M. Beffel, professor of pathology in the Wisconsin College of Physicians and Surgeons has resigned.——Dr. Edward Evans, La Crosse, has been re-appointed a member of the State Board of University Regents.——Dr. Frank C. Moulding, Watertown, surgeon of the Second Infantry W. N. G., has resigned.

GENERAL.

Yellow Fever in Panama.—No cases of yellow fever were reported from the city of Panama, during the first eleven days of July, according to *Public Health Reports.* In Colon, since July 2, five new cases have been reported with one death.

Personal.—Dr. Miroslav Urbanich, a medical inspector for the Netherlands, in Java, recently visited San Francisco. He states that the health record of Java is good, with the exception of that for the rainy season, which lasts for two months, and during which it is dangerous for a white man to be out of doors. There is no bubonic plague in the island, the most prevalent diseases being beriberi and malaria.

Quarantine Against Panama.—According to a report by Acting Assistant Surgeon Gruver, the Colombian ports have declared quarantine against Panama. Vessels from the Isthmus desiring to enter any Colombian port must first go to Guayaquil, Ecuador, for fumigation, and each vessel receive a certificate from the Colombian consul stationed there before pratique will be granted by the Colombian port authorities.

Robbery of Military Medical Stores.—It is reported from Manila that during the past few years probably not less than $100,000 worth of instruments and medical stores has been stolen from the medical supply depot. Two clerks were arrested charged with stealing supplies from the depot and selling them to the American drug store. It is also charged that the books were tampered with in order to conceal the thefts.

Health Report of the Philippines for April.—The report of the Board of Health for the Philippine Islands for April shows that in Manila there were 585 births during the month; of these 329 were male and 256 female. During April there were 530 deaths among the permanent residents of Manila and 48 among transients. Three deaths occurred in women of advanced age from senile debility. One woman was 105 years of age, another 115, and the third 125. There were three cases of smallpox with no deaths in April, 1905, against 18 cases with 7 deaths in April, 1904. Two cases of bubonic plague occurred during the month; both terminated fatally.

Leprosy and Smallpox on the Isthmus.—A case of leprosy is reported from Bocas del Toro. The smallpox patient is a laborer in the employ of the United Fruit Company. It has been impossible to trace the origin of the infection. The man was sent to the company's hospital and isolated. The leprosy patient is a Central American Spaniard who states that he has lived with a tribe of Indians at the headwaters of the Changuinola River for several years. The man was not aware of the nature of his disease and went to Bocas de Toro for treatment. The case is reported as isolated, but no definite conclusions have been reached regarding its ultimate disposition.

Leprosy in Cuba.—A case of leprosy was detected in an old resident of Matanzas. The patient is a man, aged 47, and it is stated in *Public Health Reports* that the disease first appeared when he was 9 years old and while he was visiting a maternal aunt who was affected with it. As both his parents were healthy this seems to show that leprosy is acquired by contagion, and that in this case it is not congenital. The patient has both the tubercular and the anesthetic forms of the disease, the tubercular on the face and the anesthetic on the hands. There is contraction of the fingers and several of the phalanges have been lost. The patient has been sent to the San Lazaro Hospital in Habana, for proper segregation and care.

THE YELLOW FEVER SITUATION.

RAPID SPREAD—RIGID QUARANTINE—ACTION OF OTHER STATES—MISSISSIPPI INVADES LOUISIANA.

Louisiana.

New Orleans Isolated.—New Orleans is practically cut off from the outside world by the strict quarantine regulations adopted by neighboring municipalities and states. The local health board, headed by Dr. Quitman Kohnke, the health officer, and the State Board of Health, whose president, Dr. Edmond Souchon, is in active command, are working in close accord with the United States Public Health and Marine Hospital Service, in the effort to restrict the disease and to prevent the spread of the infection.

Statistics.—Up to the end of July 304 cases of yellow fever had been reported in New Orleans, from 46 foci of infection, with 62 deaths, a percentage of 20.4. On July 31, 21 cases were reported, with 5 new foci and five deaths, and on August 1, 42 cases were reported, with 4 new foci of infection and six deaths.——On August 2, 32 new cases were reported and 11 deaths.

Heat Complicates Conditions.—The situation in New Orleans has been complicated since July 30 by a torrid wave in which the temperature rose to 92.6°. As a result the new cases of fever doubled August 1. No abatement of the hot wave was in sight, and a heavier death-rate was expected.

Abolition of the Mosquito.—About 20,000 cisterns are being treated daily with oil and about 5,000 are being screened each day. It is reported that half a million dollars is available for the purpose of purging New Orleans from the mosquito-borne infection.

To Get Rid of Mosquitoes.—The mayor of New Orleans has issued a proclamation concurred in by the city health officer, the president of the State Board of Health, the surgeon of the United States Public Health and Marine Hospital Service and the advisory committee of the New Orleans Parish Medical Society, which gives the following instructions for stamping out the infection by getting rid of its cause, the "cistern mosquitoes:"

> First—Keep empty all unused receptacles of water in every house, and allow no stagnant water on any premises.
>
> Second—Screen all cisterns after placing a small quantity of insurance oil (a teacupful in each cistern) on the surface of the water.
>
> Third—Place a small quantity of insurance oil in cesspools or privy vaults.
>
> Fourth—Sleep under mosquito nets.
>
> Fifth—Wherever practicable, screen doors and windows with wire screens of close mesh.

Outside Parishes.—Plaquemines parish, just above the city, on the west bank of the river, reported officially on August 1, six cases of yellow fever; Terrebonne parish, one case, and Jefferson parish two cases. Officials from the State Board of Health and the U. S. P. H. and M. H. S. service have been sent to these parishes to take charge of the situation. The patients will be screened and isolated, and a war against mosquitoes will be inaugurated. All of these patients are Italians or Austrians who have been directly in connection with the Italian quarters of New Orleans where the infection was undoubtedly received.

Shreveport.—A case of yellow fever is reported in the detention camp at Shreveport.

Modification of Quarantine Regulations.—President Souchon of the State Board of Health issued a proclamation August 1 on behalf of the board and of parish and municipal health officers, announcing that he had accepted, and recommended the acceptance by subordinate officers of the Marine Hospital Service, of health certificates for through passengers from northern points transferring in screened coaches at New Orleans. He declares that passengers from New Orleans, after a detention of five days in Marine Hospital Service camps who are given certificates, should be admitted without detention into the parishes and towns of the state.

Embargo on Freight.—The president of the State Board of Health deprecates the quarantine against shipments of merchandise from New Orleans and recommends that no such restrictions be imposed in as much as all freight cars from New Orleans are fumigated by the officials of the U. S. P. H. and M. H. Service before leaving the city.

To Control Spread of Fever.—Dr. Quitman Kohnke, health officer of New Orleans, has issued the following circular:

> Office of the Board of Health of the City of New Orleans.
>
> The spread of yellow fever is easily controlled by the application of very simple rules.
>
> Whether or not New Orleans will be rid of yellow fever at an early date depends in a very large measure on the degree of assistance each householder is willing to contribute to the work of eradication.
>
> Yellow fever is transmitted from person to person by the bite of a stegomyia mosquito—the kind whose breeding places are cisterns, water barrels and similar collections of water. The stegomyia mosquito bites in the day time usually, seldom at night.
>
> It is important to know the conditions under which these mosquitoes transmit the disease so that the measures of prevention may be intelligently operated. Mosquitoes, in order to become infectious, must bite a patient during the first three days of the fever, and then ten days must elapse before it is capable of transmitting the disease.
>
> Mosquitoes are, therefore, not dangerous before the tenth day after biting the sick, and the patient is not dangerous after the third day of fever.
>
> Protect from mosquitoes, day and night, all cases of fever for three days, and then destroy before the tenth day, after the beginning of the illness, the mosquitoes that are in the room.
>
> Whenever yellow fever spreads from person to person, it is because these preventive measures have not been carried out.
>
> Quitman Kohnke, Health Officer.

Other States.

Alabama.—The State Quarantine Board at a special meeting August 1, adopted the following new quarantine regulations:

> All vessels from Colon, either direct or via any other port, shall be disinfected at the station of this board and held five full days thereafter at the station. All vessels from Bocas del Toro, Republic of Panama; Puerto Cortez, Honduras; Livingston, Guatemala, and Belize, British Honduras, shall be full five days out from point of departure before leaving the quarantine station of this board.

The rigid quarantine which has been enforced since July 29 against Louisiana by the State Board of Health has been legalized by a proclamation issued by Governor Jelks. This proclamation, like the recommendations of the state board, extends the area under quarantine so as to include the entire state of Louisiana.—State Health Officer, Dr. William H. Sanders, Montgomery, announces that he believes the quarantine steps taken in the case of yellow fever, reported August 1 in Montgomery are fully adequate, and that no occasion exists for the declaration of a quarantine against Montgomery.

Arkansas.—Governor Davis, on August 1, directed the commander of the state guard to detail as many men as might be necessary to act as guards on all trains entering the state, and at all points where boats run, in order to establish a strict state quarantine against all points where yellow fever is found to exist.——A case is reported at Texarkana.

Georgia.—Health Officer Dr. William F. Brunner, Savannah, has gone to Louisiana to investigate the conditions there and to determine whether or not Savannah shall quarantine against New Orleans and adjacent points.

Illinois.—Dr. James A. Egan, secretary of the State Board of Health, announced on August 2 that the portion of Illinois lying south of the Baltimore and Ohio Southwestern Railroad was declared to be quarantined against all fever-infected points. All trains will be inspected at East Cairo and at Thebes.

Mississippi.—Port Gibson has appointed a vigilance committee to guard against the entry of strangers. Pass Christian has been closed against all travel from New Orleans. Utica has declined to receive mail that has not been fumigated.

Mississippi Invades Louisiana.—It is reported that Mississippi has five armed boats patrolling the coast to prevent fishermen from breaking through the quarantine lines, and furthermore that armed guards along the lines of the Louisiana and Nashville Railroad have extended their patrols three miles inside the limits of Louisiana. In consequence of this action, Governor Blanchard of Louisiana has telegraphed Governor Vardaman of Mississippi informing him that Mississippi armed quarantine guards have crossed into Louisiana territory at Pearl river, and asking Governor Vardaman to give orders that his guards remain on their own side of the state line. This telegram was supplemented by a second in which Governor Blanchard stated that he had information that Mississippi patrols had forbidden fishermen to fish in Lake Borgne and were now guarding the exit of the Lake Borgne canal, preventing boats from going out; asking whether this was done by the order of the governor of Mississippi, and stating that this state of affairs could not be tolerated.

Missouri.—The president of the State Board of Health called a meeting for August 3 in St. Louis, to discuss the question of a quarantine against infected points in the South.

New York.—One passenger and five of the crew of the Mallory line steamer San Jacinto, from Galveston and Key West, which arrived August 1, were removed from the steamer at quarantine and transferred to Hoffman Island for observation.

Pennsylvania.—Every possible precaution is being taken by the state quarantine officers to prevent the introduction of yellow fever from New Orleans into Philadelphia. Orders for a rigid inspection of all vessels from southern ports, and especially from the gulf ports, have been issued by the quarantine officials at Marcus Hook. A complete physical examination will be given each passenger on such boats arriving at quarantine, and all vessels will be fumigated.

Texas.—Dr. George R. Tabor, Austin, state health officer of Texas, announced August 1 that passengers from eastern and northern points having to pass through New Orleans could not continue their journey through Texas without remaining in a detention camp for at least six days.

Marshall, just across the Louisiana state line, is said to have instituted a shotgun quarantine against all persons or traffic from fever-infected districts, and to have stopped all train service.

A case of yellow fever has been reported in Morgan City, 80 miles west of New Orleans.

Virginia.—The health commissioners of Norfolk, Portsmouth, Berkeley and Norfolk counties have ordered quarantine against New Orleans.

General.

Federal Government May be Involved.—It is reported that the schooner *Grace* of Gulfport, Miss., and another vessel have been lying five miles inside of the Louisiana line for the past week, and at times even entering the outlet from Lake Pontchartrain into Lake Borgne, and during that time have taken 18 Louisiana boats and turned them over to the United States revenue cutter *Winona* and towed them to Ship Island, where the crews were interned.

Detention Camps.—One of the greatest problems is the necessity for greater facilities at the detention camps, where patients are held for five or six days for quarantine, as many of the towns refuse to allow camps to be established within their limits and as the camps already established are overcrowded. The inmates of the camps are uncertain whether they will be allowed to reach their destination after the stated period of detention has expired.

Ask United States to Intervene.—A petition is being circulated in Louisiana asking the United States Government to take charge of the yellow fever situation and handle it as it did in Havana, Santiago and other places.

Court of Appeals Moved.—On account of quarantine restrictions, the United States Court of Appeals has been removed from New Orleans to Atlanta.

FOREIGN.

Dengue in Australia.—Queensland has had an epidemic of dengue. Thirty-nine deaths in Brisbane were directly due to this disease.

Yellow Fever in Mexico.—Six cases of yellow fever are reported from Vera Cruz. The infection was probably imported from Tierra Blanca, where cases of yellow fever had been present for several weeks previously.

Excessive Summer Heat in India.—During June the heat in some parts of India was excessive. In the region of the Ganges the temperature frequently ranged from 100 to 114 F. A temperature of 106 F. was registered in Calcutta, where many deaths were directly due to the great heat.

Excessive Heat in Italy.—It is reported that the localities which suffered most from the recent hot wave are Romagna, Tuscany, Lombardy, and Venezia. The largest number of sufferers were laborers in the fields. A number of cases of sunstroke have been reported from Florence, Ascoli, Lodi and Verona, some of them being fatal.

Sanitary Service in the Roman Campagna.—On June 1, the Red Cross began the sanitary service in the Roman Campagna for the sick poor, establishing, as in the past year, an ambulance system in the localities most infected with malaria. The personnel has already been appointed, and the necessary material has been obtained.

A Pasteur Institute in the Straits Settlements.—The *British Medical Journal* states that owing to the occurrence of several cases of hydrophobia in Penang, some of which have terminated fatally, Leong Fee, the Chinese consul, has made an offer to the government to build and to equip a Pasteur institute for the Straits Settlements and neighboring regions.

British Royal Infirmary.—The carnival which was held recently at the Zoological Gardens, Clifton, with the object of raising $75,000 to wipe off the existing debt on the British Royal Infirmary, has been most successful, according to the *Lancet*. It yielded a profit of $37,000, and Sir George White has given a similar sum, so that the infirmary is now free from debt.

International Congress on Infant Feeding.—The first session of this congress is to be held at Paris, October 20, 21. The object of the association is to diminish the mortality among non-breast-fed children by supplying good and pure milk and by instructing ignorant mothers. Anyone wishing to take part in the congress should send his name, together with 20 francs ($3.80), to Dr. Roger, 39 Rue de Berry, Paris, before October 15.

Vaccination in South Africa.—In Natal the local legislature, by a vote of 18 to 16, has decided to strike out the appropriation for vaccination. The prime minister is reported to have protested against such false economy, saying that it would probably result in an epidemic of smallpox. The Natal legislature does not seem to have been moved by antivaccination principles, but by a desire to save present outlay no matter at what future expense.

Kala-Azar in Assam.—In a report recently published concerning the work of the dispensaries in Assam, says the *Lancet*, it is stated that the number of cases of kala-azar fell from 2,534 in 1902 to 257 in 1904, but it is admitted that the diagnosis of the hospital assistants cannot be depended on. Concerning this disease statistics are almost valueless, although it is probable that the mortality has not been so great in recent years as formerly.

Tuberculosis Hospital in Rome.—The new hospital, Humbert I, built at Rome for indigent tuberculous patients has begun operations. Without the intention of establishing a true sanatorium, the institution being designed as a refuge for patients suffering from chest troubles of every degree, the commission has been able to solve the problem of hospital care for the tuberculous poor of Rome. The institution consists of 5 pavilions, of galleries for open-air treatment, of cottages, and of special booths, all fitted out according to the modern system of hospital hygiene.

Yellow Fever in Honduras.—Acting Assistant Surgeon Carter of the Public Health and Marine Hospital Service has been ill with yellow fever at Puerto Cortez, but has recovered sufficiently to be on duty. In Puerto Cortez, since July 1, there have been reported 15 cases of yellow fever, with 3 deaths. The situation at San Pedro, as reported by the consular agent, is very bad, 400 cases being reported, with a total of 52 deaths. The greatest mortality is among the native population, the mortality among the foreigners being very small. Yellow fever has also been reported from Coloma, a small town near San Pedro.

Cremation for the Parsee Dead.—The Indian correspondent of the *Lancet* states that there seems to be a move among a certain section of the Parsee community in Bombay to adopt the western method of cremation of the dead in place of the loathsome practice of exposing the dead to be devoured by vultures. The Hindu method of cremation by open wood fires is not supported. It is proposed to establish a Bombay cremation society on the lines of the Cremation Society of Bengal which was established in Calcutta in 1902. It is earnestly to be wished, he states, that the innovation may be taken up by the Parsee community, which, while so enlightened and far-seeing in some respects, is backward and exclusive in others.

International Congress on Assistance for the Insane.—This congress will be held at Milan, in September, 1906. Among the matters to be dealt with are the construction and organization of asylums, the no restraint system, solitary confinement, work and agricultural colonies, special arrangements for the weak-minded and epileptic, alcoholics, criminal lunatics, etc., boarding out the family colonies, psychiatric and neuropathologic dispensaries; the treatment of incipient insanity; legislation; the powers and duties of the state; private initiative. The president of the organizing committee is Professor Tamburini, who was recently chosen to succeed the late Professor Ezio Sciamanna in the chair of clinical psychiatry in the University of Rome; the general secretary is Professor Ferrari, Bertalia, Bologna, Italy.

LONDON LETTER.

The Imperial Cancer Research Fund.

At the annual meeting, held under the presidency of the Prince of Wales, Dr. Bashford, general superintendent, reported that during the year the investigations had passed out of the provisional stage and had acquired definite characters. The first series of reports was received from India and included 146 cases in natives subsisting on a vegetable diet, 137 in others whose food was mainly flesh and 222 in natives living on a mixed diet. Evidence had been obtained that the occurrence of sarcoma increased as life advanced in a manner analogous to that long known to be characteristic of carcinoma. Sir William Church, chairman of the executive committee, in moving the adoption of the report, said that the investigations carried out during the year might be described as falling under three main heads—statistical, histologic and experimental. Additional evidence had been accumulated showing that cancer could not be associated with any peculiarities of diet. The continued tabulation of the cases of malignant growths in the metropolitan hospitals, in which the diagnosis had been proved microscopically, confirmed the opinion that in internal growths the errors of diagnosis even of the most accomplished and experienced observers are much greater than would be expected. The results of inoculation in mice, he stated, point out the necessity of yet more closely studying the processes of cell multiplication. Tumors occurring sporadically in mice can be transplanted to other mice; thus it has been found possible to perpetuate a malignant growth through successive generations. Every transplantation did not succeed and the cause which determined success or failure can not be stated. Slight racial differences in the mice seemed to be important. Careful examination of transplanted tumors had shown that a continuous power of growth is manifested by the transplanted cells and that the new growth originates from them and not from the cells of the host irritated or stimulated by the transplanted material. In mice, as in men, spontaneous malignant growths occur in the aged rather than in the young, but transplanted growths flourished as well or better in young and vigorous mice. As to the question of contagion, large numbers of healthy mice were kept for long periods in the same cages with mice suffering from both sporadic and inoculated tumors, and yet in no instance was the disease transmitted.

Proposed Charter for the British Medical Association.

The "representatives" at the Oxford meeting of the British Medical Association instructed the council to obtain alterations in the memorandum of association so as to give the association power to expend money for the defense and promotion or maintenance of the honor or interests of the profession, particularly taking or defending legal proceedings. The council referred the question to a committee which held numerous sittings and took legal opinions. As a result, the chairman of the council, Mr. Andrew Clark, was asked to ascertain what prospect there would be of the privy council advising the crown to grant a charter to the association. He has reported that there is a good prospect of obtaining one.

Vital Statistics of Jews.

A paper entitled "A Contribution to the Study of the Vital and Other Statistics of the Jews in the United Kingdom," has been read before the Royal Statistical Society by Mr. S. Rosenbaum, and is of considerable interest. It shows that the birth rate and a low death rate among the Jews is to produce English and that the infant mortality is considerably lower. In the three quinquennial periods ending respectively in 1890, 1895, and 1900, the metropolitan rate of infant mortality (deaths under one year to 1,000 births), increased from 153 to 156 and 161. At the same time, the rates in the borough of Stepney declined from 170 to 168 and 165. In this borough, an enormous increase of the Jewish population has taken place in recent years and has been concurrent with a decline of infant mortality while that of the metropolis generally increases. The Jewish birth rate in East London appears to be considerably higher than the non-Jewish. In 1903 it was 45 per 1,000. This high rate is due not only to the large proportion of Jewish women who are married, but also to their great fertility. The combined result of an abnormally high birth rate and a low death rate among the Jews is to produce a much greater rate of natural increase than that of the English population.

The Quartercentenary of the College of Surgeons of Edinburgh.

Elaborate preparations have been made to celebrate the four hundredth anniversary of the incorporation of the College of Surgeons of Edinburgh. The honorary fellowship will be conferred on a number of eminent surgeons, British and foreign, including the following Americans: Drs. Halsted, Keen, Warren, McBurney and W. J. Mayo. The actual anniversary falls on July 1, when the "Seal of Cause" was granted in 1505 by the town council to the Barber Surgeons of the City and Liberties of Edinburgh, which formed them into a trades guild with the monopoly of the barbers' and surgeons' craft, and with the privilege of obtaining the body of "ane condamnit man after he be died" to make anatomy of and the sole right of making and sellling *aqua vitæ* within the burgh.

Correspondence

The Country Surgeon.

Millersburg, Ohio, July 28, 1905.

To the Editor:—The president of the Baltimore & Ohio Surgeon's Association in his annual address at the Pittsburg meeting, made a statement which rural surgeons can scarcely permit to go unchallenged. He took occasion to deplore the gross incompetency of the country railroad surgeons, and suggested that they take post-graduate courses in surgery. He even intimated that the railroad company might be induced to defray the expenses of such a course of instruction. He said that the rural surgeon was necessarily inferior to his city brother, because he did not have the advantages to keep up with the progress of the science that the latter possesses, etc.

Now I suppose the doctor doubtless has reasons for entertaining a low estimate of our qualifications, especially since he has the courage to express his convictions in a public address. It seems to me, however, that if he were familiar with the work done and the results obtained by some of the country surgeons, he would have qualified his statements, recognizing the fact that there are exceptions to the rule he arbitrarily asserted. In the first place railroad companies, in appointing the surgeons in large towns and cities, have a considerable contingency to select from. They select men of recognized surgical ability and as a rule of considerable experience. Men of this class are by no means numerous, even in large cities. For instance, take a city which has within its precincts one hundred active practitioners of medicine. How many competent surgeons would be found among them? I venture to say that one could count them on the fingers of one hand. Granting this to be true, we can easily imagine that railroad companies may have some difficulty in finding a man who is a tolerably fair surgeon even in good sized towns along their line. We find men everywhere who are able practitioners of internal medicine, but have no aptitude or skill whatever in the line of surgery.

It is true that such men ought not to accept appointments as surgeons, but in the struggle and competition for notoriety they seek the appointments, and by their blunders often bring the entire craft into disrepute. All the post-graduate courses existing would not convert such men into surgeons.

Now, in casting reflections on the rural surgeons as a class, the doctor should have been more explicit. He should have stated in definite terms in what respect we are lacking. If he has reference to operative skill and dexterity of course he would not expect a surgeon who has only a few capital operations in a year to be compared with one who operates almost daily. Although I beg leave to say in this connection that I know a country surgeon who has recently made his ninetieth amputation and who in skill and scientific technic stands second to but very few city surgeons whom I have seen operate; and when it comes to results he can excel some of them.

Possibly the doctor regards us as deficient in aseptic technic. I see no reason why we should be open to criticism in that respect. In our latest works on surgery we find hundreds of pages devoted to operative technic, general as well as special. Every step is described, from the preparation of the patient to the minutest details in the operative procedure. It would seem that a short period of careful study should make one master of the subject without taking a post-graduate course. It is self-evident without entering into detail, that we country surgeons are often placed under circumstances, and confronted with conditions, that render strict asepsis almost impossible. The city surgeon stands back, scrubbing his hands and looking wise; while the internes and nurses prepare the patient. Instruments and dressing material are placed before him in the best of order and in a perfect aseptic condition. When he operates he is surrounded by competent assistants who stand ready to take the blame should there be anything wrong in the technic. How different is the lot of the country surgeon. For instance, I would like to have seen one of the city surgeons in my place when called to see a man whose leg was crushed and who was lying on the floor of a box car; I was obliged to amputate by the light of lanterns and without any medical assistance.

S. P. Wise.

Marriages

B. Barret Griffith, M.D., Springfield, Ill., to Miss Sarah Adelia Giddings of Colorado Springs, Colo., June 28.

Duncan Frazier Stewart, M.D., Neponset, Ill., to Miss Adelaide Victoria McIntire, at Chicago, July 6.

Joseph John Cody, M.D., to Miss Mary Genevieve McCabe, both of Charlestown, Boston, Mass., June 24.

Joseph Courtney Ralston, M.D., Galveston, Texas, to Miss Marie Martin Smith of Painesville, Ohio, June 29.

William P. Burke, M.D., Highland, Cal., to Miss Kate Parmlee of Cedar Falls, Iowa, at Highland.

William S. Shipp, M.D., Battle Creek, Mich., to Miss Florence Temple of Tecumseh, Mich., June 28.

Eugene C. Taylor, M.D., Millersburg, Ind., to Miss Hazel Bella Deniston of Indianapolis, June 29.

J. A. Maronda, M.D., Emerson, Neb., to Miss Emma Palmer of Battle Creek, Neb., recently.

James P. Connell, M.D., Fond du Lac, Wis., to Miss Eliza Twohig of Osceola, Wis., June 27.

William Grant Norman, M.D., to Miss Lida C. Sands, both of Dow City, Iowa, July 12.

George L. Wentz, M.D., Drifton, Pa., to Mrs. Caroline Goddard of Worcester, Mass., July 11.

Samuel A. Crabtree, M.D., to Miss Emma Alice Reynolds, both of Tolono, Ill., July 26.

Robert G. Allen, M.D., Washington, Ill., to Miss Anna Forward of Maryland, June 26.

Arthur McGinnis, M.D., to Miss Nellie B. Daugherty, both of Philadelphia, July 11.

Theophil Klingmann, M.D., to Miss Nathalie Wahr, both of Ann Arbor, Mich., July 1.

Denton W. Rudgers, M.D., to Miss Maude Ohlman, both of Yankton, S. D., July 1.

Lewis C. Bean, M.D., to Miss Carrie Bell Walker, both of Gallipolis, Ohio, July 1.

E. R. Todd, M.D., Adams, Ore., to Miss Cora M. Moore of Sadem, Ore., June 22.

Jerome J. Stout, M.D., Dayton, Ohio, to Miss Caldwell, recently.

Deaths

Henry Hatch, M.D. Louisville Medical College, 1872, of Quincy, Ill., a member of the American Medical Association, Illinois State Medical Society, Adams County Medical Society, International Association of Railway Surgeons, Mississippi Valley Medical Association; fellow of the American Academy of Railway Surgeons, president Tri-State Medical Society in 1901, surgeon to the Burlington system; consulting surgeon to Blessing Hospital, Quincy; consulting physician to Woodland Home for Orphans and Friendless and Anna Brown Home for the Aged; from 1882 to 1887 professor of principles and practice of medicine in the medical department of Chaddock College, and president of the school board of Griggsville in 1875 and 1876, one of the most prominent practitioners of western Illinois, died at Blessing Hospital, Quincy, from pernicious anemia, July 24, after an illness of six months, aged 57.

Curtis Harvey Bill, M.D. New York City, 1859, of Bridgeport, Conn., a member of the American Medical Association; who won renown during the Civil War as surgeon to Gen. W. T. Sherman, after having been driven from Clarksville, Tenn., by a vigilance committee, on account of being a Union sympathizer; died in St. Luke's Hospital, New York City, July 24, six days after an abdominal section for malignant disease, aged 70.

William Shelton White, M.D., St. Louis Medical College, 1872, a member of the American Medical Association; from 1872 to 1892 chief of the microscopic department of the Bureau of Animal Industry, South Omaha; for two years assistant physician and for four years physician of Douglas County, died at his home in South Omaha, Neb., July 15, after a lingering illness, aged 61.

Wiley Rogers, M.D. Cincinnati College of Medicine and Surgery, 1865; a member of the Kentucky Board of Charity for twenty years, and of the State Board of Pharmacy for four terms; coroner and health officer of Spencer county and secretary of the Brashear Medical Society, died at his home in Taylorville, Ky., July 5, from uremia, after an illness of three months, aged 63.

Benjamin Edge, M.D. Bellevue Hospital Medical College, New York City, 1879, a member of the American Medical Association and of the medical Society of the State of New Jersey; in 1884 a member of the State Council of Charities and Corrections, and in 1901 a member of the State Reformatory Commission, died at his home in Jersey City, N. J., July 25, aged 54.

Charles S. Williams, M.D. (years of practice Indiana), 1897, for more than thirty years a practitioner of Columbia City, Ind.; for 22 years coroner of Whitley County and for several years secretary of the city board of health, died at his home in Columbia City, July 10, from carcinoma of the stomach after an illness of several months, aged 62.

David Wilkins, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1853, surgeon of the One Hundred and Thirtieth Illinois Volunteer Infantry, during the Civil War, for 51 years a resident of Greenville, Ill., died at his home in that city, from cerebral hemorrhage, July 23, after an illness of two months, aged 76.

Mahlon Felter, M.D. Albany (N. Y.) Medical College, 1859, one of the oldest petitioners of Troy, N. Y.; a member of the state and county medical societies and of the American Academy of Medicine; city physician of Troy in 1861 and 1862; died at his home in Troy, July 19, after an illness of six months, from heart disease, aged 74.

Edward W. Ridings, M.D. Vanderbilt University Medical Department, Nashville, 1888, a member of the American Medical Association and a prominent practitioner of Dickson County, Tenn., was shot and fatally wounded by J. E. Fowler, July 8, dying a few hours later, aged 35.

Robert M. Weir, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1866, said to have been the oldest practitioner of Bloomington, Ind.; for several years secretary of the local board of health, died at his home in Bloomington, July 6, from pulmonary tuberculosis, after a long illnes, aged 64.

James L. Warden, M.D. University of Louisville, Medical Department, 1876, formerly assistant physician at State Hospital for the Insane, No. 3, Nevada, and later superintendent of State Hospital for the Insane, No. 1, Fulton, died at his home in Pleasant Hill, Mo., July 3, from septicemia, after a long illness.

David Beattie Smiley, M.D. College of Physicians and Surgeons in the City of New York, 1887; a member of the Medical Club of Middletown, and of the Medical Board of Thrall Hospital, died at his home in Middletown, N. Y., July 13, from spinal disease, aged 45.

Charles Rulon Pittinger, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1899, of Newark, N. J., died suddenly in a sanitarium in that city, July 6, eleven days after an operation for appendicitis, from cardiac embolism, aged 28.

Charles Darius Rogers, M.D. Albany (N. Y.) Medical College, 1888, some time government surgeon at Sitka, Alaska, and later clerk of the district court of Alaska, died at Denver, July 8, from the effects of an overdose of morphin taken for insomnia, aged 39.

E. C. Bainbridge, M.D. Jefferson Medical College, Philadelphia, 1848, of Harrisburg, Ky., some-time representative from Owen County in the legislature, died at the home of his daughter in Louisville, July 20, after a lingering illness, aged 76.

David Leslie Philip, M.D. McGill University Medical Department, Montreal, 1863, once president of the Brant County Medical Association, died at his home in Brantford, Ont., July 10, from cerebral hemorrhage, after an illness of four years, aged 66.

Michael Kimmel Warner, M.D. Washington University School of Medicine, Baltimore, 1876, for several years connected with the city health department, died at his home in Baltimore, July 22, after an illness of one year, aged 53.

George H. Wilson, M.D. Medical Department of Western Reserve University, Cleveland, 1893, of Cleveland, died at St. Alexis Hospital in that city, July 3, from nephritis, after an illness of two months, aged 35.

Alexander G. B. Parke, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1866, died at his home in Gap, Pa., July 1, from cerebral hemorrhage, after an illness of two days, aged 63.

D. C. Dunn, M.D. Louisville Medical College, 1872, a member of the local board of education, and justice of the peace, died suddenly at his home in O'Fallon, Ill., July 23, from cerebral hemorrhage, aged 61.

Clarke Robbins, M.D. (years of practice, Indiana, 1897), for 49 years a practitioner of Morgan County, Ind., died at his home in Mooresville, June 27, from paresis, after an illness of two years, aged 68.

James A. Armstrong, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1861, died at his home in Hellam, Pa., July 20, after an illness of nearly two years, aged 67.

Rupert W. Parker, M.D. University of Vermont Medical Department, Burlington, 1893, of Boston, died suddenly from heart disease at his summer home, Crow Point, near Hingham, Mass., July 10.

Lafayette Swoope, M.D. Medical College of Virginia, Richmond, 1857, died recently at the home of his nephew in Mississippi, and was buried at Swoope's Depot, Va., July 13, aged 73.

Hiram Murray Stokes, M.D. Pennsylvania, 1884, shot and killed himself at his home in Philadelphia, July 7, while temporarily insane from heat and an old injury to the head, aged 41.

Benjamin R. Ussery, M.D. Medical Department University of Tennessee, Nashville, 1897, died at his home near Shiloh, Tenn., July 10, from tuberculosis of bones, after a protracted illness.

David S. Hogan, M.D. John A. Creighton Medical College, Omaha, 1899, a member of the American Medical Association, died at his home in North Loup, Neb., July 4, aged 33.

George S. Tankersley, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1893, died at his home in La Pine, Ala., July 12, after an illness of one year.

Henry B. Allen, M.D. Jefferson Medical College, Philadelphia, 1883, for several years deputy revenue collector, died at his home in Cloquet, Minn., July 4, from tuberculosis.

Charles W. Robbins, M.D. Penn Medical University, Philadelphia, 1859, died at his home in Richmond, Philadelphia, July 4, from senile debility, aged 70.

George Mathews Telfair, M.D. Medical College of Ohio, Cincinnati, 1860, died at his home near Bloomington, Ohio, July 13, after a long illness, aged 65.

Philip J. Tresch, M.D. Fort Wayne (Ind.) College of Medicine, 1885, of Lafayette, Ind., was shot and killed in that city, by Alexander Kennedy, July 16.

Benjamin Franklin Gardner, M.D. Cincinnati, 1860, surgeon during the Civil War, died at his home in Atlanta, Ill., July 21, from senile debility, aged 87.

William T. White, M.D. Kansas City (Mo.) Medical College, 1895, died at his home in Kansas City, July 18, from an overdose of morphin, aged 35.

Daniel D. Bartholomew, M.D. Ohio, 1880, died at his home in Holly, Mich., July 22, after an illness of one day, from heart disease, aged 56.

Emanuel M. Scheurer, M.D. Pennsylvania, 1871, died at his home in Clearfield, Pa., July 10, from septicemia, after a long illness, aged 59.

James C. Bristow, M.D. University of Louisville Medical Department, 1872, died at his home in Wayne City, Ill., July 16, aged 81.

Mason M. Echols, M.D. Medical College of Alabama, Mobile, 1896, died at his home in Girard, Ala., July 15, aged 31.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

SWAIM'S OINTMENT AND PANACEA.

Manchester, N. H., July 17, 1905.

To the Editor:—Can you give me the formula or composition of Swaim's Ointment or the Panacea of Mr Swaim (as it is called sometimes) for the treatment of leg ulcer. John S. Murray, M.D.

Answer.—Swaim's panacea is supposed to be a preparation similar in composition to the Compound Syrup of Sarsaparilla (U. S.) Swaim's Ointment is said to be composed of 25 per cent. precipitated sulphur, in equal parts of lard and suet.

FITTING GLASSES.

B. C. P. writes: "Wishing to take up the work of fitting glasses in my practice, I write you for information as regards a suitable text-book for a beginner in the work, one that will give necessary information, and as to what will be the necessary apparatus required."

Answer.—Most of the modern student's text-books on ophthalmology will furnish the required information. Those written by Jackson, de Schweinitz, Swanzy, etc., are plain, thorough and understandable. In addition, the principles and practice of retinoscopy should be mastered, and for this we know of no book superior to Thorington's. A retinoscopic mirror should be purchased and used in all cases, and no examination for refractive error is complete without a good ophthalmometer, which, although not always reliable, is still a most important aid in diagnosis. The ophthalmoscope is an instrument which should always be used, as it furnishes essential information, not only as regards the ocular media, but also data concerning the refractive condition of an eye. The surgeon should possess facilities for thoroughly darkening his consultation room, and should use for illumination either a good argand burner or a powerful incandescent light with a glazed shell (as sold by dealers in ophthalmologic instruments, etc.), or both. A Thorington asbestos chimney is a valuable aid in using retinoscopy. A good set of test lenses, etc., is, of course, indispensable, and some Snellen test types must, of course, be purchased. Reliable illumination of such test-types may be obtained by artificial illumination, properly shaded, placed either above or below the letters, as daylight is variable and unreliable. Instead of this arrangement an illuminated box, such as devised by Dr. Nelson Black of Milwaukee, may be purchased, and will be found to be reliable and most convenient. In addition to this some of Jaeger's test paragraphs for close reading will be necessary. All cases should also be carefully tested for their muscular balance by the Maddox rod, or some instrument, such as a Steven's phorometer, supplemented by a small dot of light at the other end of the room, which may be obtained by a minute gas jet, a candle flame, or an incandescent light contained in a small black box, with a round hole in its side, placed underneath the Snellen's test-types. Thus equipped the earnest physician may by much study, patience and practice, become, in time, capable of doing good refraction work.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 29, 1905:

Egan, Peter R., surgeon, assigned to duty at Fort Hamilton, N. Y.

Nelson, Kent, asst.-surgeon, assigned to duty at Fort McHenry, Md.

Crabtree, Geo. H., asst.-surgeon, in addition to his other duties, will take charge of, and perform until further orders, those of attending surgeon, New York City, N. Y.

Torney, Geo. H., deputy surgeon general, Brechemin, Louis, deputy surgeon general, Stephenson, Wm., surgeon, appointed members of a board of officers to meet at the Army General Hospital, Presidio, San Francisco, for the examination of such officers of the medical department as may be ordered before it for promotion.

Kennedy, Jas. M., asst.-surgeon, ordered to report in person to Lieut.-Col. Geo. H. Torney, deputy surgeon general, president examining board, Army General Hospital, Presidio, San Francisco, for examination for promotion.

Godfrey, G. C. M., asst.-surgeon, ordered to report in person to Major Wm. H. Arthur, surgeon, president, examining board, Washington, D. C., for examination for promotion.

Quinton, Wm. W., asst.-surgeon, assigned to temporary duty at Army General Hospital, Presidio, San Francisco, until arrival of 17th Infantry at that post, then to accompany the regiment to Fort McPherson, Ga., where he will take station.

Woodall, Wm. P., asst.-surgeon, assigned to duty at the Army General Hospital, Presidio, San Francisco.

Quinton, Wm. W., asst.-surgeon, granted leave of absencne to include the date of arrival of the 17th Infantry in San Francisco.

Ragan, Chas. A., asst.-surgeon, assigned to duty at the Army and Navy General Hospital, Hot Springs, Ark.

Richard, Charles, surgeon, reported for duty at Fort Jay, N. Y.

La Garde, Louis A., surgeon, having reported to the military secretary of the army, in compliance with orders from the governor of Canal Zone, will proceed to Manila, P. I., for duty. Also granted leave of absence for one month, with permission to apply for an extension of one month.

Whinnery, Jean C., dental surgeon, left Fort Egbert, Alaska, for Fort Gibbon, Alaska, for duty.

Warwick, Clarence A., contract surgeon, arrived at San Francisco, for four months' leave of absence from the Philippines Division.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 29, 1905:

High, W. E. G., asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered home to wait orders.

Smith, C. G., P. A. surgeon, commissioned P. A. surgeon, with rank of lieutenant, from April 12, 1904.

Shipp, E. M., surgeon, orders of June 21 modified; ordered to the New York Hospital.

Backus, J. W., asst.surgeon, detached from the *Southery* and ordered to the *Hancock*.

Dabney V., acting asst.-surgeon, detached from the *Culgoa* and ordered to the *Southery*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending July 26, 1905:

Sawtelle, H. W., surgeon, granted leave of absence for one month from date of arrival in Washington, D. C.

Wasdin, Eugene, surgeon, to proceed to Mobile, Ala., for special temporary duty in Mobile and vicinity.

White, J. H., surgeon, to proceed to New Orleans for special temporary duty.

Guiteras, G. N., surgeon, to proceed to New Orleans and report to Surgeon J. H. White for special temporary duty.

Young, G. B., P. A. surgeon, to proceed to Jackson, Miss., for special temporary duty.

Corput, G. M., P. A. surgeon, to report to Surgeon J. H. White for special temporary duty.

Goldberger, Jos., P. A. surgeon, to report at Bureau, Washington, D. C.

Richardson, T. F., P. A. surgeon, orders to proceed to Brunswick quarantine station revoked, and directed to proceed to New Orleans and report to Surgeon J. H. White for special temporary duty.

Francis, Edward, P. A. surgeon, to proceed to Mobile, Ala., and report to medical officer in command for temporary duty.

Gustetter, A. L., acting assistant surgeon, granted leave of absence for ten days, from July 25, 1905.

Safford, M. V., acting assistant surgeon, granted leave of absence for three days, from July 22, 1905, under paragraph 210 of the regulations.

Savage, W. L., acting assist.-surgeon, department letter granting leave of absence for thirty days from Aug. 7, 1905, amended to read thirty days from August 15.

Goodman, F. S., pharmacist, to proceed to New Orleans, and report to Surgeon J. H. White for special temporary duty.

Watters, K. H., pharmacist, granted leave of absence for fifteen days from August 7.

VanNess, G. I., Jr., pharmacist, granted leave of absence for thirty days from August 1.

Bierman, C. H., pharmacist, granted leave of absence for fifteen days from July 24.

BOARD CONVENED.

Board to meet at San Francisco, July 27, 1905, for the physical examination of an officer of the Reveune Cutter Service. Detail for the board: Surgeon G. M. Magruder, chairman; P. A. Surgeon J. M. Holt, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the period from July 15 to 22, 1905;

SMALLPOX—UNITED STATES.

California: Los Angeles, July 1-8, 1 case.
District of Columbia: Washington, July 8-15, 6 cases.
Illinois: Chicago, July 8-15, 6 cases.
Indiana: South Bend, July 8-15, 1 case, 1 death.
Louisiana: New Orleans, July 8-15, 4 cases (2 imported).
Massachusetts: Lowell, July 1-8, 1 case.
Michigan: Grand Rapids, July 8-15, 6 cases.
Nebraska: Omaha, July 8-15, 1 case; South Omaha, July 1-8, 1 case.
New Jersey: Jersey City, July 8-16, 1 death.
Ohio: Toledo, July 8-15, 2 cases.
Oregon: Portland, June 1-30, 6 cases.
Pennsylvania: Altoona, July 8-15, 1 case; York, 1 death.
Tennessee: Memphis, July 8-15, 2 cases.
Washington: Seattle, July 1-8, 1 case.
Wisconsin: La Crosse, July 8-15, 1 case; Milwaukee, 15 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, May 27-June 3, 2 cases.
China: Hongkong, May 6-13, 1 case.
Colombia: Cartagena, June 17-24, 1 case, 1 death.
Ecuador: Guayaquil, June 13-20, 1 death.
France: Paris, June 24-July 1, 7 cases.
Great Britain: Birmingham, June 24-July 1, 8 cases; Bristol, 2 cases; Cardiff, 4 cases; London, 1 case.
India: Bombay, June 6-13, 4 cases; Calcutta, June 3-10, 5 cases; Karachi, June 4-11, 8 cases, 2 deaths; Madras, June 3-9, 5 cases.
Italy: Catania, June 22-28, 1 case, one death.
Russia: Moscow, June 10-17, 7 cases, 3 deaths; St. Petersburg, June 22-29, 9 cases.

YELLOW FEVER—FOREIGN

Africa: Goree-Dakar, Maay 31, 1 death.
Ecuador: Guayaquil, June 13-20, 3 deaths.
Guatemala: Livingston, June 21-July 6, 8 cases, 2 deaths.
Honduras: Puerto Cortez, June 8-July 7, 12 deaths.
Panama: Colon, July 2, 1 case.
Venezuela: Maracaibo, June 22, present.

CHOLERA—FOREIGN.

India: Bombay, June 6-13, 1 death; Calcutta, June 3-10, 5 deaths.

PLAGUE—INSULAR.

Hawaii: Hilo, July 17, 1 death.
Philippines: Cebu, May 27-June 3, 2 cases, 2 deaths; Manila, 1 case, 1 death.

PLAGUE—FOREIGN.

Australia: New South Wales: New Castle, May 13-27, 2 cases; Sydney, 3 cases, 1 death; Northern Rivers District, May 6-13, 2 cases, 1 death. Queensland, Brisbane, May 27-June 3, 1 case, 1 death. Ipswich, May 31, 1 death.
China: Hongkong, May 6-13, 17 cases, 12 deaths.
Egypt: General, June 3-10, 3 cases, 2 deaths.
India: Bombay, June 6-13, 188 deaths; Calcutta, June 3-10, 52 deaths; Karachi, June 4-11, 67 cases, 63 deaths.
Japan, Kagama Ken, May 30-June 16, 34 cases; Tokyo, April 18-June 10, 11 cases, 6 deaths.

Society Proceedings

AMERICAN ASSOCIATION OF LIFE INSURANCE EXAMINING SURGEONS.

Sixth Annual Meeting, held in the Imperial Hotel, Portland, Ore., July 10, 1905.

Wish to be Independent of Local Agents—College Teaching Asked.

The following resolutions were passed by the Association:

Whereas, The local medical examiner is, under present arrangements, more at the mercy of the local agent than under the protection of the medical department of the company;

Resolved, That the appointment of local examiners should be independent of local agents and the number not added to to suit their desires; also,

Resolved, That the examiners' reports should always be sent direct to the home office by the local examiner and not through the agent; and, further, be it

Resolved, That in each city there should be one chief examiner and only such alternates as are reasonably required—one to one hundred thousand; all examinations to be made by the chief, if available, and when not the reason to be given and his indorsement obtained before policy be issued.

Be it resolved, That the American Association of Life Insurance Examining Surgeons, assembled in Portland, Ore., in regular annual session, July 10, 1905, urge that each medical college in this country provide for and give in their regular course of instruction a special course of instruction on life insurance examining, it being the desire of this association to advance the knowledge of this particular side of diagnostic work and to prepare the recent graduate for this responsibility.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. H. W. Dewey, Tacoma, Wash.; vice-presidents, Drs. A. S. McDaniel, San Antonio, Texas; M. A. Robison, Victor, Colo.; W. Moore, New York City, and W. T. Ames, Portland, Ore.; secretary-treasurer, Mr. J. G. Monihan, New York City. Next place of meeting, Boston.

Instruction of Students in Examination for Insurance.

Dr. W. B. Cluness, San Francisco, discussed the fact that life insurance companies too often are the victims of errors due to ignorance on the part of recent graduates. Teachers should be impressed with the importance of instructing students in the methods of diagnosing disease in its incipiency. He attached much importance to tact and discernment, which sometimes count more than eminent ability. He would have students taught that life expectancy is the principal feature in life insurance problems, and that there is constantly going on an adverse selection against the company which it is the duty of the medical examiner to minimize to the extent of his ability; and that heredity and environment are the principal elements which determine the longevity of individuals. Students should be taught to give the company facts and not generalities. They should be urged to have the courage of their convictions and report their findings.

DISCUSSION.

Dr. H. W. Dewey agreed that instruction in college for this special work ought to be encouraged. Students should be aided to observe normal as well as pathologic conditions.

Dr. H. G. Brainard, Los Angeles, defined the position of the applicant for insurance and of the patient in the office in their different aspects. The latter, he said, gave many points about himself; the former, knowing that any pathologic condition will cause a higher rate of insurance, tries to prevent such disclosure. This different plane of examination should be impressed on the medical student.

Dr. D. W. Smouse, Des Moines, suggested the sending of a letter to the medical schools of this country to this end.

Dr. W. T. Amos, Portland, thought it possible that many applicants were approved by young physicians because of the persistence of the agent and because the young physician needed the money. The young men feel that they are getting no real support from the home office and consequently disregard the instructions of care in the matter of risks.

Collision or Collusion.

Dr. W. T. Amos, Portland, explained his reluctance in writing on a subject which seemingly criticises the insurance companies for which he examines, but in consideration of existing conditions he felt it was to the best interest of all concerned that the matter be brought up of the non-support by the medical directors of the local examiner which resulted in collision between the agent and examiner with the working of injustice to the examiner, or a collusion between the agent and examiner with the working of hardship on the company. He analyzed the modus operandi by which this collusion grew, unconsciously to the examiner, between the agent and examiner. He hinted at the great desire of the insurance companies to get business, good business if possible, but business anyway. He intimated that the medical directors in their instruction to the local examiners cautioned them to be careful to a degree to which they did not expect the examiners to conform. He spoke highly of his opinion of the integrity of physicians as a class but could not see how they could be blamed for receding from the high standing supposed to be set by the medical directors when they see the easy examiners getting all the business.

We Can Do Better Work for Our Companies. Do They Want It?

Dr. William Moore, New York, regarded the chief causes which prevent the companies obtaining the best services of the medical examiners, and the latter receiving their rewards to be: 1. The indifference of all the officials, except the medical director, to the examiners' welfare. 2. Poor pay and unnecessary multiplicity of examiners. He suggested the following remedies: 1. The medical report should call for no expression as to the insurability of the risk. 2. A confidential opinion, whenever the original report is to pass through the agent's hands, should be sent direct by the examiner to the medical director. 3. Examiners should be salaried, or a chief and alternate system be adopted with a penalty for its violation, to be paid by the agent, should he employ other than the chief, when available.

DISCUSSION.

Dr. W. O. Bridges, Omaha, believed that until the medical director has absolute authority to make and to stand by an examination regardless of the business end, there would be difficulty. He regretted that there were few companies in this country who leave the principal part of the business in the hands of the medical director. The multiplicity of examiners is also responsible for much trouble. The only redress open to the medical examiners is to turn against those companies which will not protect them.

Dr. E. S. Clark, Sumas, Wash., thought there should be more safe risks and until examinations are conducted with this view the trouble will not be overcome.

Dr. A. S. McDaniel, San Antonio, said that it has been his rule to make an honest report. While he has gained the confidence of his company, his income has decreased. He finds that other examiners have come in and for some reason they get the greater number of fees.

Dr. M. A. Robison, Victor, Colo., asked whether an examiner was justified in reporting an absolutely poor risk to a company regarding an examination made by another examiner. The case in point was that of a man who had been recommended, but died within one week. Dr. Robison had been familiar with the condition before the insurance was issued and inquired whether he would have been justified in interfering with another's business.

Dr. H. G. Brainard, Los Angeles, said that with most of the insurance companies the medical department was a kind of fifth wheel, which the company requires, but which is dominated by the business end of the concern. In his company the effort is made to have the examination papers sent direct from the examiner to the home office. He felt that the difficulty in question is one which can not be avoided until the examiner is made supreme in his own field. He called attention to the fact that insurance may be given to any man if a sufficient rate is charged; for instance, the man who dies next week may be insured if the rate is right. Because a man is not a first class risk, it does not follow that he should be debarred.

Dr. H. W. Dewey, Tacoma, remarked that theoretically the medical examiner is responsible to the medical department, but that practically he is much more responsible to the agent. He has in his office a scale and measuring rod which he has found keeps business away from him. Agents have told him that they do not want the exact height and weight of a man who is anywhere near the limit. Another cause of difficulty is the multiplicity of examiners; the agent picks out the most lenient. With reference to interfering in the matter of a poor risk, he thought it would be a clear case of "butting in."

Dr. S. F. Sanders, Holdredge, Neb., spoke in protection of the medical director, who is not entirely responsible for the appointment of the agent. He thought benefit would result to the insurance companies if attention were paid to the matter along the lines suggested in the papers.

Dr. Amos wanted it clearly understood that he was not under the second class of the heading of his paper. While he has been fairly successful, he has not made much money in the insurance business. He believes that an examiner should "butt into" the poor risks that have been accepted by other physicians.

(To be continued.)

PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

Second Annual Meeting, held at Manila, March 1-4, 1905.

Under the Presidency of Dr. J. R. McDill.

The second annual meeting of the Philippine Islands Medical Association was convened in the library of the Bureau of Government Laboratories, Manila, P. I., March 1, 1905. The address of welcome was delivered by the Hon. D. C. Worcester, Secretary of the Interior. The address of the President, Dr. J. R. McDill, was on "The Status of Medical Affairs in the Philippine Islands," and will appear in full in The Journal. The meeting was an interesting and profitable one. Wednesday evening the past and present officers and guests of the association were guests at a banquet by the president, Dr. McDill. Friday evening another banquet was given by Dr. R. P. Strong. On Saturday evening the members of the association gave a banquet at the Army and Navy Club, where their guests of honor were the visiting physicians, the governor-general, and the members of the Philippine Commission.

Officers Elected.

The following officers were elected for the ensuing year: President, E. C. Carter; vice-presidents, V. G. Heiser and R. Cuervo; secretary-treasurer, R. E. L. Newberne; councilor, R. P. Strong; delegate to the American Medical Association, W. E. Musgrave.

Report of Secretary.

The secretary reviewed the history and work of the association, and gave the following information with reference to the profession in the islands: Total population, 7,635,426; total number of physicians, 360; practicantes, 131; midwives, 21; ratio of physicians to population, 1 to 21,209; number of physicians in Manila, 217; ratio to population, 1 to 1,013. Last year the death rate among physicians was greater than the supply. There is not a single modern available hospital nor a modern institution for medical teaching in the islands. The Manila Medical Society is the only subsidiary society.

Public Policy and Legislation.

This committee reported on the efforts made to secure a charter for the association, a law for the regulation of the opium traffic and to relieve, to some extent, the unsatisfactory conditions due to the scarcity of physicians in the islands, and at the same time to improve the present service. The committee also considered the establishment of a university of the Philippines to consist of an undergraduate school, a college of applied sciences, engineering, medicine, law, languages and philosophy, and recommended a plan of organization.

Papers Read.

The papers read and those accepted in the absence of the authors included the following:

"Beriberi," by Erwin Baelz; "Social Diseases," by Paul Clements; "Forensic Medicine," by E. F. Johnson; "A Search into the Nitrite and Nitrate Content of Witte's Peptone, with Special Reference to Its Influence on the Demonstration of the Indol and Cholera Red Reactions," by William B. Wherry; "Glaucoma Among the Friars," by C. J. Miner; "Immigration," by V. G. Heiser; "The Episcopal Dispensary, and the Medical Care of the Indigent," by C. R. Johnson; "Control of Tuberculosis," by D. M. Appel; "Address on State Medicine," by E. C. Carter; "Measles in the Tropics," by Rudecindo Cuervo; "Results of Cold Irrigation as Compared with Warm Irrigations in the Treatment of Gonorrheal Urethritis and Endometritis," by E. C. Shattuck: "Symptoms, Diagnosis and Prognosis of Uncomplicated Intestinal Amebiasis (Amebic Dysentery) in the

Tropics," by W. E. Musgrave; "Medical Department of Bilibid Prison and some of the Diseases among the Prisoners," by W. R. Moulden; "San Juan de Dios Hospital," by R. E. L. Newberne; "Metropolitan Police Medical Service," by A. T. Short; "Dentition in Relation to the Excessive Infant Mortality in Manila," by Louis Ottofy; "Organization, Management and Medical History of the Civil Sanitarium at Baguio, Benguet," by J. B. Thomas; "Address on Climatology," by W. S. Washburn; "Care of the Aged and Infirm," by M. Gomez; "Evolution of the Medical Laboratory Work in the Philippine Islands and Opportunities now offered for Future Work," by R. P. Strong; "Chinese Medicine," by Tee Han Kee; "History of Plague in the Philippine Islands," M. Herzog; "Observations on Relapsing Fever," by Koch of Hongkong; "Military Medical Service in the Philippine Islands," by C. Richard; "Infant Mortality," by Louis de Castro; "Disinfection of Ships," by J. D. Long; "Some Unpublished Observations on Endemic Neuritis in the Philippine Islands," by J. M. Wheate; "Pseudo-diphtheria Bacilli," by E. H. Ruediger; "History of Medicine in the Philippine Islands," by A. Bautista; "Medical Laws, Customs and Practices in the Philippine Islands," by J. Maye; "Pathology of Intestinal Amebiasis," by P. G. Woolley and W. E. Musgrave; "Bronchopneumonia in Cattle, Its Relation to Infection and Bacillus Bovisepticus," by P. G. Woolley and W. Sorrel; "New Variety of Granuloma in Cattle Clinically Resembling Lumpy Jaw," by P. G. Woolley; "Sarcoma of the Ciliary Body," by P. G. Woolley.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Treatment of Asthma.

Dr. G. Avellis, in an abstract in the *Jour. Am. Med. Sciences*, divides the antiasthmatics into four classes:

1. The preparations of stramonium and the nitrites.
2. The iodids.
3. The preparations of atropin.
4. Those substances which may be made up for inhalation.

When the attack of asthma is terminated by an abundant secretion of mucus the iodids are to be used.

When there is little secretion, even when there is cough, the iodids are useless and the preparations of belladonna should be used. The cases benefited by the iodids are more common than those in which belladonna preparations are of service. Fumigations are especially effective in children at the beginning of attacks early in the night. Their habitual use should not be encouraged.

The foregoing remedies are of value in asthma when the attacks are seldom and are separated by intervals of entire freedom from symptoms, but in that form of asthma in which the respiration is never free from râles, with more or less constant dyspnea, and no secretion of mucus, other therapeutic measures must also be employed.

In spasmodic asthma some authorities recommend a combination similar to the following:

℞. Tinct. belladonnæ	ʒi	4
Spts. camphoræ	ʒii	8
Kalii bromidi	ʒiiss	10
Elix. simplicis q. s. ad	℥iv	120

M. Sig.: One tablespoonful to be taken at the commencement of the paroxysm and the dose repeated in four hours, if necessary. Or:

℞. Ext. grindelia rob. flu	ʒi	4
Tinct. belladonnæ	ʒi	4
Strontii bromidi	ʒii	8
Elix. simplicis q. s. ad	℥iii	90

M. Sig.: One tablespoonful at a dose and repeated in four hours if required.

Lobelia is sometimes of service in conjunction with other antispasmodics as follows:

℞. Tinct. lobeliæ		
Tinct. belladonnæ, āā	ʒii	8
Elix. simplicis q. s. ad	℥ii	60

M. Sig.: One teaspoonful every four hours until relieved.

The iodids, if necessary, may be combined with other antispasmodics as follows:

℞. Kalii iodidi	gr. lxxv	5
Tinct. belladonnæ	ʒiiss	10
Syr. aurantii q. s. ad	℥ii	60

M. Sig.: One teaspoonful three or four times a day in water.

Treatment of Status Epilepticus.

The following are the most common causes of status epilepticus, according to K. Alt in *Med. News:* Constipation, with absorption of toxic products from the intestinal canal, alcohol, morphin, sexual excesses or nervous irritation, extreme heat from sun's rays, sudden withdrawal of the bromids. An exacerbation of the disease may also be noticed after an acute illness during which the patient is free from convulsions.

The first thing to be done in the way of treatment, according to this author, is to empty the bowels thoroughly by means of a high enema and calomel. This treatment alone will frequently cause the condition to subside by clearing the intestinal canal of all putrefactive material. The bromids are of but little value, as their action is too slow.

Chloral hydrate in thirty-grain doses (2.00), is an excellent medication when the pulse is strong. With cardiac weakness from ten to fifteen drops of the tincture of strophanthus should be added to the enema. In very severe cases the only means of controlling the convulsions is chloroform, which can be combined with oxygen. Should the temperature be high the patient may be placed in a cool bath, and in full-blooded individuals with acetonuria venesection followed by a saline infusion is indicated. Acetonuria, according to this author, is not uncommon in the epilepsy of general paresis, but is rare in genuine epilepsy.

Acne Vulgaris.

As to the causes of acne vulgaris, W. Kenneth Wills, in *Bristol Med.-Chir. Jour.*, regards dyspepsia and constipation as of the most importance, along with the lack of fresh air and exercise, and with an unsuitable dietary. Anything which causes the skin to flush has a harmful action on acne. Too hot drinks are the commonest offenders, while alcohol, mustard, pepper and spices, pork, pickles, and pastry should all be eliminated from the diet. Fats are not good, as they aid in the formation of sebaceous secretion and they should be cut to a minimum, particularly pork and bacon.

After the removal of the predisposing causes the local condition should receive attention, such as:

1. The removal of the fat from the skin.
2. The destruction of irritating micro-organisms growing in the fat.
3. The enucleation of comedones and pustules.
4. The maintenance of the best possible hygiene of the skin.

To remove the superfluity of grease from the skin hyperemia must also be reduced. For this purpose ichthyol, internally and externally, is recommended. Some alkaline medium applied externally with friction is of value, using an alkaline soap. After the friction with the alkaline soap some mild antiseptic should be used, at the same time preventing undue hyperemia. Sulphur and ichthyol are regarded as sufficient in inhibiting the growth of micro-organisms. When pustules are present an incision should be made to prevent pock marking.

The author recommends *x*-rays as an agent of value in stimulating the growth of normal cells and in promoting the absorption of granulomatous tissue. The good results from this treatment are not necessarily permanent, but having got rid of the trouble for a time, the skin may be kept freer in the future and can be kept clear from infection. Yeast sometimes acts well in these cases, presumably by rendering the soil unsuitable for the growth of the bacilli.

Whitfield, in the *Med. Practice*, edited by Bain, recommends the extrusion of the comedones by means of Unna's comedo extractor after thoroughly softening the face with soap and hot water. In very obstinate cases frequent scaling of the skin with strong resorcin pastes is recommended. The following ointments are recommended by him for local application:

℞. Sulphuris precip.	ʒss	2	
Acidi salicylici	gr. x		65
Parafinni mollis q. s. ad	℥i	30	

M. Ft. unguentum. Sig.: Apply locally night and morning. Or:

℞. Sulphuris precip.	ʒss	2	
Hydrarg. bisulph	gr. xx	1	30
Saponis mollis	ʒii	8	
Paraffini mollis q. s. ad	℥i	30	

M. Ft. unguentum. Sig.: Apply locally to the face only for three successive nights in the week. Or:

℞.	Resorcin	ʒii	8	
	Zinci oxidi			
	Pulv. amyli, āā	ʒi	4	
	Paraffini mollis	ʒiv	15	

M. Ft. unguentum. Sig.: To be applied to the face for three successive nights in the week.

As lotions the following are recommended:

℞.	Sulphuris precip.	ʒiss	6	
	Calaminæ prep.	ʒvi	24	
	Spts. vini rectif	℥ii	60	
	Glycerini	ʒii	8	
	Aq. calcis q. s. ad	℥viii	240	

M. Ft. lotio. Sig.: To be applied locally to the face. Or:

℞	Resorcini	ʒiss	6	
	Hydrarg. perchloridi	gr. ii		12
	Spts. odoratus	℥ii	60	
	Glycerini	ʒii	8	
	Aquæ dest. q. s. ad	℥viii	240	

M. Ft. lotio. Sig.: To be applied locally for acne involving the scalp.

The following local application containing ichthyol is recommended by some authorities:

℞.	Ichthyol	gtt. x		65
	Sulphuris precip	gr. xii		75
	Zinci oxidi	ʒi	4	
	Lanolini q. s. ad	℥ss	15	

M. Ft. unguentum. Sig.: Apply locally.

Pruritus Ani.

L. H. Adler, in *Amer. Med.*, states that 95 per cent. of the cases of pruritus ani occurs in males. In nearly all the cases the patients are neurotic and of a decidedly bilious temperament. The treatment requires the removal of the cause, the regulation of the patient's habits of life and attention to local treatment. The latter consists in a daily injection into the rectum of the following:

℞.	Ext. hamemelidis	℥i	30	
	Ext. ergotæ flu	ʒii	8	
	Ext. hydrastis flu	ʒii	8	
	Tinct. benzoini co	ʒii	8	

M. Sig.: One to two and a half drams to be injected into the rectum once daily.

If the perineal skin is dry and tough, the entire surface should be painted with a concentrated solution of silver nitrate (grains 96 to the ounce). This application may have to be repeated several times to restore the skin to normal. After this is accomplished the citrine ointment should be applied in full strength and renewed once daily for fourteen or fifteen days, and then from three times to twice a week. The treatment may have to extend over a period of several months.

Acute Cystitis.

The following is recommended in the treatment of acute cystitis accompanied by pain and hemorrhage:

℞.	Morphinæ acetatis	gr. iv		25
	Tinct. veratri viridis	ʒi	4	
	Tinct. hyoscyami	ʒii	8	
	Syr. zingiberis	℥i	30	
	Aquæ q. s. ad	℥iii	90	

M. Sig.: One teaspoonful in water every four hours.

As a suppository in such cases to be used instead of the foregoing the following is of service:

℞.	Pulv. opii	gr. x		65
	Pulv. camphoræ	ʒss	2	
	Ext. belladonnæ	gr. iii		20
	Olei. theobrom q. s.			

M. Ft. suppos. No. vi. Sig.: One to be inserted at bedtime.

Medicolegal

Finding of Fatal Quantity of Arsenic Not Required.—The Supreme Court of Pennsylvania says, in the homicide case of Commonwealth vs. Danz, where the body was exhumed after an elapse of between eight and nine months and arsenic and antimony were found in various organs, that it is not incumbent on the commonwealth to prove that a quantity of poison sufficient to cause death was found in the body before a jury can be allowed to find that it was the cause of death, if the evidence sufficiently establishes the fact that the poison alleged to have caused death did kill the deceased. If the law were different, murderers by arsenic would often escape.

Friendly Examination Not a Consulting of Physician.—The United States Circuit Court of Appeals, Ninth Circuit, says, in Mutual Reserve Life Insurance Company of New York vs. Dobler, that an applicant for life insurance was asked when he had last consulted or been attended by a physician. His answer was: "Do not remember; years ago." The only evidence was that a physician who was his friend made, at intervals, physical examinations of him to ascertain the condition of his health, and that this was done, not at the instance of the insured, but on the physician's own initiative, without charge, and for the sole purpose of rendering a friendly service. The court holds that it would be a misuse of words as they are ordinarily understood, and especially as they were employed in the application for insurance, to say that, in so submitting himself to those examinations, the insured consulted a physician or was attended by him.

Compensation of Physicians as Expert Witnesses.—The Supreme Court of Nebraska holds, in the case of Main vs. Sherman County, that one testifying as an expert on a subject requiring special knowledge and skill, in the absence of a special contract, is entitled only to the statutory fee. This action was brought by a duly licensed physician who had been called by the prosecution and had testified as an expert witness in a prosecution for homicide in the district court of the defendant county, and had been paid the statutory witness fees. He claimed that he was entitled to additional compensation because his testimony was not that of an ordinary witness, but such as required special knowledge and skill. A demurrer filed to his petition was sustained. The Supreme Court Commissioners say that they are fully aware that the authorities are divided on this question, but think it hardly accurate to say that the authorities are nearly evenly balanced. On careful examination of the authorities it will be found that, after the elimination of the cases resting on peculiar constitutional or statutory provisions and on local customs, the decided weight of authority supports the conclusion reached in this case. The following are some of the cases sustaining this conclusion: Dixon vs. People, 168 Ill., 179; Flinn vs. Prairie County, 60 Ark., 204; Ex parte Dement, 53 Ala., 389; State vs. Teipner, 36 Minn., 535; Summers vs. State, 5 Tex. App., 365; Larimer County Comm. vs. Lee, 3 Colo. App., 177. It has been held that the state may require the services of its citizens without compensation. Bennet vs. Kroth, 37 Kan., 235; West vs. State, 1 Wis., 209; Ex parte Chamberlain, 4 Cow., 49. Nor do the commissioners think the rule embodied in that conclusion so oppressive as it might appear at first glance. They say that the benefits of civil government of necessity carry with them certain duties more or less onerous to the citizen. It not infrequently happens that the citizen is compelled to serve the state at a pecuniary loss. When an officer armed with a warrant commands the assistance of a citizen in making an arrest, the latter, however valuable his time, is not permitted to stand and bicker for fees; when called to serve as a juror, a citizen will not be heard to complain that the compensation fixed by law is inadequate. As to compensation in such matters, the scale is fixed without regard to calling or countenance, and the common laborer and the man of large affairs, rich and poor, learned and unlearned, are on equal footing. As was said in the Dement case, above cited: "The administration of justice being a source of mutual benefit to all the members of a community, each is under obligation to aid in furthering it as a matter of public duty, and every competent citizen may be summoned by due process of law to appear and render personal services in court without right on his part to a special compensation for so doing. His time is claimed by the public as a tax paid by him to that system of law which protects his rights as well as those of others." For these reasons the Supreme Court affirms the judgment of the District Court in favor of the defendant county, holding as first above stated.

Liability of Town for Emergency Attendance on Pauper.—The Supreme Court of Minnesota holds, in the case of Robbins vs. Town of Homer, that, where the town supervisors are required to provide for the care and support of the poor therein, and have no regular physician to attend its paupers, and a pauper suffers from an accident which requires the immediate attention of a surgeon, who renders services to relieve the necessity, he may recover reasonable compensation from the town, although he had not been requested by the authorities to attend the patient. The court says that in Chapter 172 of the Laws of Minnesota of 1899 it is prescribed that county physicians shall be appointed by the county commissioners to attend on the poor when necessary; and it was therein specifically provided that, in case of emergency, where any poor person had become a county charge, and should be suddenly injured or afflicted, and so require immediate treatment before the arrival of the proper county physician, any reputable or duly licensed surgeon who should prescribe for or treat such injured or afflicted person might receive compensation from the board, with added provisions for notice by the emergency physician. Then follows a further proviso that this act shall not apply to counties caring for the poor by the township system. The view, however, is not to be tolerated, under well-settled constitutional limitations, that a class distinction in behalf of counties and to discriminate as to towns was created by this proviso. The most that can be said of this legislation relative to county physicians is that it is an indication of the policy of the state to provide for an apparent and reasonable requirement to protect the unfortunate poor where injury and sudden sickness may prevent the attendance of the regularly appointed physician whose duty is to look after the unfortunate charges of the state, and without any such statute the reason therefor is plain and apparent. The impulses of humanity, the dictates of natural justice, as well as the pecuniary interest of the municipal body on whom the duty is imposed, demand that, where the officials having charge of the poor are unable to act in a case of pressing urgency, the course indicated ought to be pursued, and should be justified, if it can be done on any reasonable legal grounds. The county or town must provide for the unfortunate pauper who has met with an accident requiring instant succor as soon as may be. To decline this mandate of humanity and duty wilfully by those on whom it is imposed would subject such officials to prosecution for misconduct in office. If the poor person in question in this instance had died, and the supervisors had been absent, the court has little doubt that a person providing for his burial would have a legal claim against the town; and, on the same reasons, why not a physician whose ministrations in a pressing emergency seek to avoid what may result in his death? The supervisors on whom the duty to secure the physician was imposed under legal as well as moral obligations had not provided for the same, and the court has no doubt that it should be held that the physician who immediately answered the call of emergency, perhaps to save life, or diminish the increase of expenditures against the public, would have a valid claim for compensation.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

July 22.

1 *Vicarious Action of the Bowels for the Kidneys in Tuberculosis. L. F. Flick and J. Walsh, Philadelphia.
2 *Bacterial Toxins and Immunity. V. C. Vaughan, Ann Arbor, Mich.
3 What Cases Are Suitable for Admission to a State Sanatorium for Tuberculosis, Especially in New England? H. C. Clapp, Boston.
4 Relapsing Fever: Its Occurrence in the Tropics and Its Relation to "Tick Fever" in Africa. F. C. Wellman, Angola, W. Africa.
5 *Syphilitic Spirochetes in Cerebrospinal Fluid. A. Gordon, Philadelphia.
6 Management of Epilepsy. T. P. Prout, New York.
7 *The Surgeon and the Pathologist. J. C. Warren, Boston, Mass.

1. **Vicarious Action of Bowels for Kidneys in Tuberculosis.**—It has long been recognized that in certain cases of tuberculosis there is a looseness of the bowels which is not due to ulceration. This looseness has been termed an irritative diarrhea and has been ascribed to errors in diet. When it has occurred in cases which have come to autopsy the bowels have been found free from ulceration and apparently in a healthy condition. A careful study of a number of cases which were under observation for a long time clinically and which came to autopsy led Flick and Walsh to believe that in these cases the looseness of the bowels is due to a vicarious action of the bowels for the kidneys and that nature is really trying to protect the system by this vicarious action. In all of the cases—11—there was severe diarrhea, usually over a protracted time. In all, the intestines were found normal and the kidneys were found to have undergone acute alterations. In three cases out of the eleven the autopsy showed the ileum slightly congested; in all the remaining cases the intestinal tract, with the exception of the appendix, was normal. Several forms of nephritis were found, toxic nephritis, parenchymatous nephritis, diffuse nephritis and interstitial nephritis. In seven cases out of the eleven there were scattered tubercles in the kidneys. The authors have found magnesium sulphate and nitroglycerin of greatest use in the treatment of this complication. When the bowels are very loose, .78 gm. (12 gr.) doses of magnesium sulphate every hour will lessen the number of stools. When the bowels are costive the magnesia will greatly improve the general condition. Sometimes patients begin to gain in weight under the use of magnesium sulphate who have done badly before. Opiates should never be used in these cases.

2. **Bacterial Toxins and Immunity.**—The theory on which Vaughan's work is based assumes that the bacterial cell is, in its essential part, a chemic compound made up of many groups. The endeavor in this work has been to split up the cell molecule of the colon bacillus into its constituent groups and to study the physiologic action of these groups. The result of the work has been to show: (a) That the colon bacillus even when grown on proteid-free mediums contains a highly poisonous group and that animals treated with repeated doses of this group have their resistance to living cultures of the colon bacillus multiplied from two to four times; (b) that a group similar to that mentioned can be obtained from egg albumin and pepton and that animals treated with this also show increased resistance to the living bacillus; (c) that animals treated with successive doses of that portion of the colon cell left after the removal of the poisonous group acquire a specific immunity to the colon bacillus; (d) that the blood serum of animals treated with either the poisonous group or the nonpoisonous group of the colon bacillus does not agglutinate the living colon bacillus; (e) that cultures of the colon bacillus contain a fatty acid which either as a free fatty acid or as a neutral soap dissolves red blood-corpuscles.

5. **Syphilitic Spirochetes in Cerebrospinal Fluid.**—The object of Gordon's investigation was to determine whether the newly discovered spirilla of Schaudinn and Hoffman are present in the fluid which is in immediate contact with the nervous tissue. If so, it would be directly indicated to inaugurate a treatment of those multiple nervous lesions caused by syphilis by introducing into the cerebrospinal fluid mercury and iodid. Gordon examined the cerebrospinal fluid in 8 cases of multiple lesions of brain and cord which developed many years after the initial chancre and 2 patients in the primary stage of syphilis. Although the results were negative, the researches are nevertheless important from the standpoint of the pathogenesis of parasyphilitic affections.

Medical Record, New York.

July 22.

8 *Influence which the Acquisition of Tropical Territory by the United States Has Had, and is Likely to Have, on American Medicine. G. Blumer, San Francisco.

9 *Sea-Air Treatment of Surgical Tuberculosis. C. Wallace, New York.
10 *Prevention and Management of Summer Diarrhea Among Tenement Children. C. G. Kerley, New York.
11 *Treatment of Acne. C. M. Williams, New York.
12 *Treatment of Pertussis in Relation to Etiologic Factors. J. B. Tyrrell, Waterville, Minn.
13 Mental Symptoms of Neurasthenia. E. L. Hunt, New York.

8.—See The Journal, July 15, 1905, p. 169.

9. **Sea Air Treatment of Surgical Tuberculosis.**—Wallace's report was prepared for the purpose of acquainting the profession with the progress of the work carried on at Sea Breeze, Coney Island, an experimental hospital for the sea-air treatment of surgical tuberculosis. Forty-three patients have been under treatment in the hospital, and in selecting them the management did not make it a rule to take only incipient cases in such desperate condition that their improvement alone could leave no doubt as to the efficacy of the treatment. There are four factors in the treatment, namely: (1) Sea all night and day. (2) Cheerful, normal surroundings. (3) Ample, nourishing food. (4) Orthopedic treatment.

The children get all the sea air possible; rain or shine they are out of doors the entire day except for two hours in a tent school on the beach, and at night they sleep in wards where all of the windows are open during even the coldest weather, 12° F. being not an uncommon temperature here in winter. They are amply protected against the cold by many blankets, and wear warm hoods and jackets over flannel night gowns, also mittens and woolen bed slippers. The same rule about open windows prevails in the dining hall. The patients in the non-ambulatory class spend their days in bed on the second floor veranda. Under all this radical treatment the children are happy and comfortable. After a few days of gradual acclimatization they become accustomed to the outdoor life and do not mind the cold. There has been only one slight case of bronchitis, and coughs and colds are unknown. The dietary is abundant and of the best. As to orthopedic treatment, the methods are the same as those in general use. The results obtained at the hospital have been very gratifying.

10. **Prevention and Management of Summer Diarrhea Among Tenement Children.**—Kerley says that the reduction of the large infant mortality during the summer is to be accomplished by the education of the mothers and by the possibility of their procuring a reasonable pure milk supply, the latter to be effected by the establishment of numerous milk depots throughout the tenement districts under the management of the health department. Kerley's standing order in every household of children is as follows: With the first appearance of intestinal derangement give two teaspoonfuls of castor oil, and stop milk. Give barley water or rice water until further advised by the physician. The further treatment is simple. The child should be kept as quiet as possible and in the coolest room in the house, and the quarters as spacious as are to be had. Boiled water is given as a drink, and frequent spongings during the very hot days are advised. The cereal water, plain or dextrinized, is to be continued until the acute symptoms have subsided in large measure, regardless of the age of the patient. Barley water or rice water is given in the strength of one-half ounce of the cereal to the pint of water. When milk is resumed it is given skimmed, in small quantities, in cereal water; never more than a half ounce in the feeding. Condensed milk given in amounts of from one-half to one dram in a feeding of cereal water is often well digested when fresh milk would not be. The author's experience is that just four drugs may be relied on in diarrhea, and these are calomel, castor oil, bismuth, and opium. Bismuth must be given in large doses to be of service, and opium must be used with care, is best given in the form of Dover's powder. The technic of and indications for irrigation of the colon are described, and it is stated that the measure should not be used indiscriminately. Kerley never washes out the colon oftener than once in twelve hours, and usually once in twenty-four hours suffices. In conclusion it is urged that the matter of prophylaxis be taken by the municipal government.

11. **Treatment of Acne.**—Williams urges both local and general treatment, and the necessity for thoroughness in the search for and correction of all possible predisposing causes, and for minute detail in all efforts at treatment, is particularly emphasized. Of the predisposing causes indigestion with constipation, diseases of the sexual organs, the scrofulous type, and anemia are mentioned as especially important and their treatment when complicated by acne is outlined. The local measures are, however, the most important, and the hygiene of the skin is described in detail. Of topical applications, after the irritated skin has been soothed by the use of bland lotions like milk of magnesia diluted, stronger preparations, of which the basis is usually sulphur and of which lotio alba is a useful example, are to be employed. The treatment also includes the expression of comedones, incision of indurated or sluggish nodules, etc., and the minutiæ of these various phases are fully described. The author urges the adoption of a single drug as a main reliance and study of its possibilities, rather than shifting from one thing to another in the hope of finding a panacea, which does not exist. As the morococcus, which is responsible apparently for most of the inflammation and suppuration in acne, is exceedingly common if not universal in dermatitis seborrhoica, treatment of the scalp should go hand in hand with the other measures.

12. **Treatment of Pertussis.**—Tyrrell believes that prophylaxis is the first essential and entails avoidance of contact with whooping-cough patients; schools and kindergartens being closed during severe epidemics. Disinfection of sputa and excreta is advisable, and good results in cutting short the disease have been reported by fumigation of the patient's room with sulphurous acid. Of the drugs to be used, quinin stands foremost and it may be given three times a day, as many decigrams as the child is years old, or as many centigrams as it is months old. Camphor is useful, but the coal-tar products are less favorable than quinin and are frequently dangerous. Careful dieting is necessary, and it is desirable to give small amounts of concentrated food at short intervals to avoid overflowing the stomach. For the paroxysms, belladonna and opium, and moral suasion are advocated. The author reports encouraging results attending the use of the elastic abdominal belts recommended by Kilmer for the purpose of controlling vomiting and reducing the number and violence of the paroxysms.

New York Medical Journal.

July 22.

14 Operative Surgery at the Mayo Clinic. R. Hill, St. Louis, Mo.
15 Value of the Recognition of Errors of Refraction in Functional Diseases of the Nervous System. E. D. Fisher, New York.
16 Fulminating Peritonitis Complicating Pregnancy; Due to Ruptured Pus Tube at Eight and One-half Months; Cesarean Operation; Death. P. B. Bland, Philadelphia.
17 *Private House Operations. Preparation and After-Treatment of the Patient; Preparation of the Rooms, etc. C. H. Richardson, Pittsfield, Mass.
18 *Rapid Healing in Septic Cases, Including the Use of Iodoform Wax in Bone Cases. A. T. Mann, Minneapolis.
19 Case of Lithemic Gangrene. A Contribution to Haig's Uric Acid Theory. N. Rosewater, Cleveland, Ohio.
20 Congenital Absence of the Kidney. L. W. Glazebrook, Washington, D. C.

17. **Private House Operations.**—Richardson does not discourage sending patients to a hospital for operation, but there are so many cases, particularly in women, in which circumstances render it next to impossible to be away from home for the required length of time, that they drag out a miserable existence which a relatively simple operation, almost devoid of danger, would rectify. In cases requiring a great deal of help during the operation, such as large fibroid tumors, or cases which may require prolonged after treatment in the line of dressings, etc., and in patients whose homes are uncleanly, a hospital is far and away the better place to have the operation performed, but the idea that an asceptic operation cannot be performed in an ordinary dwelling is certainly a great error.

18. **Healing in Septic Cases; Iodoform Wax in Bone Cases.**—Mann is convinced that in thorough removal of septic tissues, and in the use of strong carbolic acid followed by alcohol, we have powerful agents which allow us to prepare many septic conditions for rapid healing, and in subacute and chronic processes very often for healing by first intention. He also believes that in the iodoform wax we have an admirable sub-

stitute for iodoform packing, bone chips, and healing by blood clot, one which makes convalescence smoother and shorter, and which in some cases enables us to gain results which are impossible by the usual methods.

Medical News, New York.

July 22.

21 *Clinical Features of the Benign Stenosis of the Pylorus. H. L. Elsner, Syracuse, N. Y.
22 *Relations of Some of the Metabolic Diseases to Intestinal Disorders. T. B. Futcher, Baltimore, Md.
23 *Immediate Effect of Biliary Retention on the Secretory Function of the Stomach. J. Friedenwald, Baltimore, Md.
24 Sulphonated Guaiacol Compounds. H. C. Jackson and G. B. Wallace, New York.
25 Men We Lost. S. J. Meltzer, New York.
26 Future of the Laryngoscope and the Study of Laryngology. J. N. Mackenzie, Baltimore, Md.

21. **Benign Stenoses of Pylorus.**—Elsner discusses those abnormalities, benign in character, within or without the stomach, which block its outlet sufficiently to interfere in any degree with the emptying of that organ or otherwise disturb its functions.

22. **Relation of Metabolic Diseases to Intestinal Disorders.**—Futcher reviews some of the main facts concerning these diseases, particularly alkaptonuria, ochronosis, and cystinuria.

23. **Immediate Effect of Biliary Retention on Secretory Function of Stomach.**—An examination of 11 cases of which 8 were cases of catarrhal jaundice, one of hypertrophic cirrhosis of the liver and 2 of cholelithiasis, leads Friedenwald to conclude that in conditions of biliary retention there is a marked tendency to an increase in the secretion of the hydrochloric acid of the gastric secretion. The gastric contents were examined for the total acidity by titration with one-tenth normal sodium hydrate solution, using phenolphthalein as an indicator; the percentage of free hydrochloric acid was determined in some cases by means of Mintz's method, in others by Töpfer's method. The cases of catarrhal jaundice were mild forms, running their course in five or six weeks.

Boston Medical and Surgical Journal.

July 20.

27 Facts and Fancies About Mind and Body. C. A. Drew, Bridgewater, Mass.
28 *Actual Results of Cerebral Surgery at the Massachusetts General Hospital. E. A. Codman, Boston.
29 *Results of Brain and Cord Surgery at the Massachusetts General Hospital. J. J. Putnam, Boston.
30 *Results in Nontraumatic Surgery of the Brain at the Boston City Hospital. W. M. Bullard, Boston.
31 Three Cases of Intraspinal Tumor, Operated on by J. C. Warren. By W. B. Odiorne, Boston.
32 Operations for Cerebral Tumor at the Boston City Hospital. F. B. Lund, Boston.
33 Operability of Brain Tumors from the Point of View of Autopsied Cases. G. L. Walton, Boston.
34 Operation for Cerebral Abscess. F. L. Jack, Boston.
35 Two Cases of Typhoid Fever, with Acute General Peritonitis. C. L. Scudder, Boston, Mass.

28. **Cerebral Surgery.**—Codman reports on the actual results of cerebral surgery at the Massachusetts General Hospital. Operations were done in 28 cases for the removal of a tumor or to relieve pressure symptoms. Seven patients died, 11 showed no improvement, 7 were improved, 3 could not be traced. Eight patients were operated on solely for the relief of pressure symptoms; 4 died, 2 showed no improvement, 2 could not be traced. For the relief of epilepsy, 21 patients were operated on; 9 improved, in 12 no improvement. For drainage of cerebral abscesses, 6 patients were operated on; 5 died, 1 showed no improvement. Codman says that the chance of any success by radical operation is so small, that in any given case diagnosed as brain tumor, even if the symptoms gave evidence of a more or less exact localization, it would be wiser to do an operation simply for the relief of intracranial pressure, rather than to explore with the idea of removing the tumor. Surgical endeavor in brain cases for the present should aim rather at devising an operation which might give relief to intracranial tension without exposing the important motor area to trauma and strangulation through the opening in the skull. It would be particularly satisfactory, he thinks, if an exploratory operation could be devised which might serve at the same time to expose a large area for the inspection of the surface of the brain and when the flap was resutured could be so arranged as to prevent bulging of the motor area. Possibly this could be done by removing all the bone in a large osteoplastic flap, except the portion covering the motor area, and wiring this portion *in situ*.

29. **Brain and Cord Surgery.**—According to Putnam, the history of his cases, taken in connection with the experience of others, leaves no room for doubt that the cleaning up of the results of old injuries to the cerebral membranes and skull results favorably in a fair number of cases. The favorable outcome seems to be due in part to the removal of reflex irritations and to the securing of better conditions of local nutrition of the cortex. The results, however, are strangely variable, and there is a mystery hanging over the matter which only a far better knowledge than we now possess, of the physiology of the brain and the pathogenesis of epilepsy can dispel. The most important point in regard to the treatment of epilepsy by operation is as to the value of excision of motor-areas of the cortex in patients with localized aura. This is still in doubt. There is much to say of a practical character in its favor, but our knowledge of the physiology of the brain and the genesis and nature of the epileptic seizure is still too immature to be utilized satisfactorily as the basis of so radical a procedure.

30. **Nontraumatic Surgery of Brain.**—Bullard presents the following summary of cases: Trephining for epilepsy, 18 patients; results unknown, 3. Traumatic, 12 patients; not relieved, 3; doubtful, 1; relieved, 8. Non-traumatic: apoplexy, with multiple cysts, 1, relieved; idiopathic, 2, 1 improved; in the other, in spite of possible temporary relief, the disease seems to have progressed. Two patients died, and in both multiple cysts of the brain were found at the autopsy. In two other patients cysts were found on operation. Three of these patients were supposed to be due to trauma, one non-traumatic. It seems probable that when cysts are present, the result of operation is likely to be more favorable than in those cases in which they do not exist.

Lancet Clinic, Cincinnati, Ohio.

July 22.

36 *Nephroptosis—New Operative Treatment. E. Harlan, Cincinnati.
37 Observations on the Treatment of Chronic Diseases. C. Pope, Louiville, Ky.
38 Ethyls in General Anesthesia. S. J. Goodman, Columbus, Ohio.

36. **Nephroptosis.**—In cases of dislocation so slight as to cause little trouble, Harlan prescribes the continuous use of a laxative tonic, containing iron, and an elastic abdominal bandage. He uses an ordinary elastic bandage five inches wide, which, when applied, extends from the pubis to the iliac crests, with a loose kidney pad inserted over the cecum. The reason for limiting the support to the top of the ilia is to have all the upward pressure to come from below, crowding the pelvic viscera higher into the abdominal cavity, thus making the viscera themselves the main support of the kidney. He has found this bandage superior to the full abdominal bandage, first, because it remains in position better, being anchored, as it were, in the hollows below the crests; second, it fulfils better the theory of general abdominal support, knowing as we do of the tendency in these cases to a splanchnoptosis on account of the insufficient support afforded the viscera by a weakened peritoneum. This gives equal pressure from below upward, simulating muscular fiber in the elastic support imparted. For the successful treatment of those patients in whom the degree of suffering is greater he has devised the following operative treatment: Cut down on the organ in the line of dislocation from the front; press aside the abdominal viscera over the track of the dislocation and carefully reattach the peritoneum to the back, following up the track until the kidney rests in its original location; imbricate the peritoneum in front of and over the lower end of the kidney if there be enough elongation (and there usually is) of the peritoneum in front of the kidney to allow of sufficient dislocation forward to give rise to pressure symptoms upon the descending portion of the duodenum and the colon. Attach the meson of the ascending and transverse colon (if necessary) to the wall of the back and shorten them, if need be, to bring the bowel into position, as also the hepatic flexure of the colon. Care should be exercised

during the operation not to wound the colica sinistra or colica media arteries, as the case may be, and the kidney must not be placed too high. Remove the appendix. A prolapsed duodenum should be normally replaced and its fixation secured if necessary. Use either silk or catgut ligature. If there be much fat about the kidney it is best to incise the peritoneum and to remove it. If the kidney be adherent to the peritoneum enucleate it from its bed of adhesions and then replace and attach it in the manner described. A continuous superficial catgut suture may also be used to secure the anterior surface of the kidney to the peritoneum, thus obliterating the path in which the dislocated kidney wanders, and re-establishing the normal relations and positions of both the kidney and abdominal viscera, and the equilibrium of the sympathetic and general nervous systems. By reason of the congestion of the peritoneum prompt and efficient union of the latter to the back is secured. Rest in bed with proper diet should bring about perfect recovery in two weeks. No danger of pyonephrosis can result from this operation, as there are no deep sutures through the kidney, and the danger of abdominal troubles is practically *nil*, an aseptic operation being done.

St. Louis Medical Review.

July.

39 *The Surgeon and the Pathologist. J. C. Warren, Boston.
40 *The Influence which the Acquisition of Tropical Territory by the United States Has Had, and is Likely to Have, on American Medicine. G. Blumer, San Francisco.

39.—See Journal, July 15, 1905, p. 149.

40.—See Journal, July 15, 1905, p. 169.

Chicago Medical Recorder.

June 15.

41 *Maloplasty. C. Wagner, Chicago.
42 Convergent Strabismus or Squint and the Modern Method of Treating It. T. A. Woodruff, Chicago.
43 *Shall the Physician Dispense? J. A. Clark, Chicago.
44 *Surgical Treatment of Lacerations of the Cervix Uteri. G. C. Waiss, Chicago.
45 *Enemata of Oxygen Gas. H. J. Burwash, Chicago.
46 Theories of Eclampsia. J. B. DeLee, Chicago.
47 Fistula of the Rectum. C. J. Drueck, Chicago.
48 Therapeutic Verities. C. Reiterman, Chicago.
49 Three Obstetrical Cases. E. V. Davis, Chicago.

41. **Maloplasty.**—In the case described by Wagner an operation was performed for a cancer of the mucous membrane of the left cheek. The tumor had invaded the muscular tissue and fascia of the cheek. It was located opposite the molar teeth, of which the decayed root was continually irritating the adjacent mucous membrane. The glands were not involved. The resulting defect from the extirpation of the tumor necessitated a planing for immediate plastic work, in order to avoid an impairment of the function of the lower jaw bone, or total lockjaw. The operation performed was a modification of that advocated by Gersuny. The functional effect is now, after a number of months, a perfect one, the patient being able to open the mouth to the fullest extent. The cosmetic result is good. The operation is described in full.

43. **Shall the Physician Dispense?**—Clark gives some of the reasons why he believes it best for the physician to do his own dispensing. Patients have more confidence in a medicine given by the physician himself than in one furnished by the druggist. There is no fear of substitution; nor is their case open to gossip in the drugstore. By dispensing his own remedies, the physician saves hours of time to his patients and gains the same number of hours in the treatment. This may mean saving a life in acute diseases. The patient saves money. The physician always knows just what his patients are getting and he has a better chance to watch the effect of his remedies. He will become a better therapeutist by doing his own dispensing. Patients can not get their prescriptions refilled whenever they feel like it. A physician is more certain of getting what he is after, because the drugs are not so likely to vary as do the remedies from the different manufacturing and pharmaceutical houses. Many preparations can not be made extemporaneously. Clark gives four reasons, any one of which he thinks should be sufficient to induce every physician to do his own prescribing: (1) Many more lives are saved to the state and nation. (2) Patients recover in much less time, a great economic saving to the family. (3) Families like it better. (4) It pays the physician by increasing his business, his fees and his cash collections.

44. **Treatment of Lacerations of Cervix.**—Waiss practices a modification of Schroeder's operation in the following manner: The cervix is steadied by an assistant and held just within the vaginal outlet; with the straight scissors two flaps are created. By making firm traction with the vulsella forceps, it is a comparatively simple matter to scalp the cervix with the knife, dissecting the vaginal tissue back about one-half inch or more. On the anterior flap of the cervix and at right angles to the direction of the cervical canal, a transverse cut is made across the face of the flap to the depth of about one-quarter inch. Another cut is made obliquely down through the tissue of the cervix to join this, but not including the vaginal strip which has been dissected back, thus removing a wedge-shaped piece. The same procedure is carried out on the posterior lip. A portion of the posterior vaginal flap in the median line is now united to the cervical canal by two interrupted chromicized catgut sutures; the needle entering the center of the vaginal tissue and passing over the intervening part of the cervical stump, enters above and is then brought out of the uterine canal. The anterior portion is treated in the same manner. When these sutures are tied, the free vaginal tissue will be drawn over the cervical stump to the uterine canal, thus forming a new anterior and posterior lip of the external os. One end of each suture will be left long and the other cut short. The resulting raw surface of the cervical stump must now be united with interrupted catgut sutures which approximate the cut surface, but do not include the vaginal tissue. As these cervical sutures become buried, the operation is finished by bringing the vaginal tissue over the cervical stump with a running suture of fine catgut, the end of which is tied to the long end of the suture employed in creating the new canal on the opposite side. The opposite side is treated in the same manner with the exception that the running suture is tied to the long end of the suture on the posterior side. Sutures No. 1 are used to form a new canal. Sutures No. 2 are used to bring the cervical stump together, and to control hemorrhage. Sutures No. 3 unite the vaginal flaps over the cervical stump. When suture No. 1 is tied, it will pull the cervical canal up and down, and when suture No. 3 is tied to suture No. 1, it will pull the cervical canal laterally, consequently creating a patulous canal lined on all sides with squamous instead of columnar epithelium. A loose gauze pack is placed in the vagina to absorb the discharges for the first two or three days, after which it is removed and the outlet simply protected by boric acid powder and a vulvar pad. If there is any discharge after this, the vagina should be douched out daily with a boric acid solution. If no operation has been performed on the vaginal outlet, the patient is allowed to be up in two weeks. Neurasthenic patients should be kept in bed eight weeks or longer, to get the benefit of a rest cure.

45. **Enemata of Oxygen Gas.**—Burwash has made use of enemata of oxygen gas in the treatment of acute respiratory disease, particularly pneumonia. He says that the introduction of a large quantity of oxygen gas into the intestinal canal not only neutralizes and deodorizes the noxious gases that frequently are found there, but also introduces oxygen through the portal system to the liver, and the already overcharged lungs are resisted in their function of aeration of the blood by this reinforcement.

American Journal of Medical Science, Philadelphia.

June.

50 Cerebrospinal Meningitis. N. B. Foster, New York.
51 *Croupous Pneumonia. T. G. Ashton, and H. R. M. Landis, Philadelphia.
52 Peripheral Obliterating Arteritis as a Cause of Triplegia Following Hemiplegia and of Paraplegia. C. W. Burr and C. D. Camp, Philadelphia.
53 Phases of the Neurotic Heart. B. Robinson, New York City.
54 Trauma of the Mesentery. J. F. Erdmann, New York.
55 *Extensive Burn of the Third Degree. A. M. Fauntleroy, Philadelphia.
56 Acute Flexion (Jones' Position), in the Treatment of Supracondylar Fractures of the Humerus. A. P. C. Ashhurst, Philadelphia.
57 *Splenic Anemia with Hemoglominemia and Decreasing Splenomegaly. J. O'Malley and A. O'Malley, Philadelphia.

58 Three Cases of Hypernephroma. I. C. Herb, Rochester, Minn.
59 Problem of the Treatment of Laryngeal Tuberculosis. W. G. B. Harland, Philadelphia.
60 Tuberculosis of the Prostate. T. R. Crowder, Chicago.
61 Résumé on the Issues Concerned in the Diagnosis and Treatment of Renal Tuberculosis. M. W. Ware, New York City.
62 Effects of Transportation of the Daily Routine on the Rhythm of Temperature Variation. R. B. Gibson, New York.
63 Study of the Metabolism of a Vegetarian. J. M. Swan, Philadelphia.
64 Detection of Minute Traces of Sugar in Urine. E. L. McEwen, Philadelphia.

51. **Croupous Pneumonia.**—Ashton and Landis present analyses made from clinical observations of 991 cases of croupous pneumonia observed in the Philadelphia General Hospital. Of these, 757 were males and 234 were females. The ages of the patients ranged from 1 to 90 years; the majority of cases occurring between the ages of 20 and 70; the second, third and fourth decades showing the greatest number. The general mortality of these cases extending over a period of five years and nine months, was 54.3 per cent., a death rate only to be accounted for by the class of patients from which these statistics are derived. The seasonal occurrence in 706 of the cases was found to be as follows: January, 111; February, 119; March, 125; April, 74; May, 60; June, 27; July, 18; August, 19; September, 10; October, 30; November, 57; December, 76. In 900 cases the right lung was alone involved in 487; the left in 293; both lungs, in varying positions, 120; lesions of the apex alone in one or both lungs, 128 cases. Of the 991 patients, 104 were alcoholic, many of whom developed delirium tremens and still more presented the disease in its various atypical and grave forms. Traumatism appeared to have some causative influence in seven cases. Pain of the peculiar stabbing character common in pneumonia was present in 679 cases; chill was noted in 492 cases; cough in 737 cases; abundance of sputum in 53; blood-tinged and rusty sputum in 537; prune-juice sputum in 14; and absence of sputum in 123; herpes was noted in 47 cases. Vomiting was present in 95; nausea without vomiting in 134; jaundice in 9; nephritis in 207; albuminuria in 232; delirium in 213. The highest temperature range recorded in 991 cases was 108, the issue being a fatal one. In 9 cases, the temperature was subnormal; these patients all developed uremia and all died. Respirations were above 40 in 107 cases; the maximum being 82 in a case shortly before death. The pulse ranged from being uncountable to 26 per minute. The leucocytosis ranged from 10,000 to 75,000. No definite relation between the degree of leucocytosis and the tendency to recover could be elicited. Among the complications noted were the following: Abortion, rheumatism, empyema, erysipelas, influenza, malaria, myocarditis, pleural effusion, typhoid, uremia, hemiplegia, and cardiac dilatation. The course of these cases seems to have been practically uninfluenced by any particular plan of treatment.

55. **Extensive Burns of the Third Degree.**—Fauntleroy reports a case of extensive burn involving nearly all the skin over the abdominal area from the seventh rib downward, the outer surface of the right thigh and buttock and portions of the right leg. The patient was placed in a 3 per cent. boric acid bath, which was maintained continuously, at about 38 C., for ten days, being only removed now and then to allow the tub to be cleaned. Each day the wound was examined and portions of the sloughing tissue removed. The patient expired suddenly on the sixteenth day. Fauntleroy believes that all extensive burns should be treated, if possible, by the continuous warm bath. The method is very restful to the patient, relieves shock, and attention can be given to the burned area without handling the patient or the dressings. When the sloughs have begun to separate, some form of more active continuous antiseptic irrigation, preferably aluminum acetate, is indicated. Food should be strictly liquid and given in small, but repeated, doses. For the shock, the intravenous infusion of normal salt solution often times will give miraculous results.

57. **Splenic Anemia.**—The striking characteristics of the case reported by the O'Malleys are: (1) The fact that the spleen shrank 10 cm. while the case was under observation; (2) there was a marked true hemoglobinemia throughout the last six or seven months of the patient's life.

Kentucky Medical Journal, Louisville.

June.

65 Uses of Chloroform. D. G. Simmons, Adairville, Ky.
66 Syphilis. J. W. Parker, Grays, Ky.
67 Abortion. B. F. Fyke, Springfield, Tenn.
68 Malformations of the Anus; Entire Absence of Anus; Exhibition of Patient Successfully Operated on. P. C. Layne, Ashland, Ky.
69 Croupous Pneumonia—Pathology, Etiology, Symptoms. J. L. Miller, Ashland, Ky.
70 Fracture of Inferior Maxillary; Report of Three Interesting Cases. D. C. Bowen, Nolin, Ky.
71 *Case of Typhoid Fever. T. H. Garvin.
72 Seven Cases of Intestinal Obstruction. E. W. Owen, Irvine.
73 Murdered for Ten Dollars. J. T. Reddick, Paducah, Ky.
74 Progress in General Surgery. I. Abell, Louisville.

71. **Adrenalin in Typhoid.**—Garvin reports a case of typhoid in which a very severe hemorrhage occurred on the twenty-first day. The usual agents employed for the control of hemorrhage proving futile, he resorted to the use of five drops of adrenalin chlorid solution, .001, every two hours for 60 hours. The patient recovered and Garvin is of the opinion that the case terminated favorably because of the use of adrenalin.

Annals of Surgery.

June.

75 *Experimental and Histologic Study of Cargile Membrane. A. B. Craig and A. G. Ellis, Philadelphia.
76 Subperitoneal Pelvic Fibromata. W. F. Whitney and F. B. Harrington. Boston.
76½ Gangrene of the Scrotum. A. D. Whiting, Philadelphia.
77 *Diagnosis and Treatment of Fracture of the Carpal Scaphoid and Dislocation of the Semilunar Bone. E. A. Codman and H. M. Chase, Boston.
78 Relation of Gonorrheal Rheumatism to Seminal Vesiculitis and Its Cure by Seminal Vesiculotomy. E. Fuller, New York City.
79 *Twine Triangular Stitch for Gastro- and Entero-enterostomy. J. W. Maury, New York.
80 Suture of the Spleen for Traumatic Hemorrhage. A. I. Ludlow, Cleveland, Ohio.

75. **Study of Cargile Membrane.**—An experimental and histologic study of Cargile membrane was made by Craig and Ellis with reference to its efficacy in preventing adhesions in the abdominal and cranial cavities and around nerves and tendons, and its ultimate fate in the tissues. The most distant time at which they found unchromicized Cargile membrane existing intact, microscopically, within the peritoneal cavity, was the fourteenth day; in most instances it had disappeared to macroscopic view much sooner. The earliest time at which they found the membrane had disappeared over the area of actual denudation was on the third day. Unchromicized Cargile membrane was buried in living animal tissue, as when placed around tendons and nerves, or in muscle, apparently is absorbed sooner than when placed within the peritoneal cavity. In no instance was so much as a fragment of the membrane observed macroscopically as late as the fifth day, though in the fragmental state membrane was noted microscopically as late as the fourteenth day. Chromicized Cargile membrane when placed within the peritoneal cavity or when buried in living animal tissue, remains unabsorbed much longer than does the unchromicized variety. The two varieties doubtless bear relatively the same relation to each other, so far as absorbability is concerned, as do chromicized and unchromicized catgut. While the unchromicized, and to a less extent the chromicized, variety will adhere firmly to a surface denuded of peritoneum, when such surface is relatively dry, yet neither can be depended on to remain where placed, unless anchored by some method, in a situation which is subject to peristaltic activity. A logical deduction from the results of the experiments seems to warrant the belief that neither variety of the membrane is of value in preventing adhesions within the peritoneal cavity. In every instance, the membrane, until absorbed, appeared to act as a foreign body, and therefore as an irritant. Craig and Ellis believe, from results of their observations, that both varieties of the membrane are of value in preventing adhesions to wounded nerves and tendons when such structures lie in tissues which have been subjected to trauma, operative or otherwise. Their conviction is that for this purpose the chromicized variety is the more valuable, and that several layers of either variety of the membrane, when placed around tendons or nerves, afford a safer and better protection than one layer. When used in the cranial cavity to replace destroyed or removed dura, the

unchromicized variety would be exceedingly difficult to handle on account of its being unmanageable when moist; and on account of the rapidity with which it dissolves, it would be of no special value in this situation even though it could be used with ease. Owing to the facility with which the chromicized variety can be handled, its greater toughness and increased power to resist absorption, it would prove of greater value in replacing the dura. These studies indicate that the membrane is destroyed by a lytic substance, or substances contained in the body fluid. The celloidin capsule experiments, even though bacteria were present in one, show that the membrane is softened, and at least partially absorbed by body fluids without the presence of cells. In the tissues it is split into fibrils, this change being accompanied or followed by the penetration of formative cells of the new tissue enclosing it. Fragmentation, disintegration and absorption finally ensue. Phagocytosis may be safely excluded as a chief important contributing cause.

77. **Fracture of Carpal Scaphoid and Dislocation of Semilunar Bone.**—Codman and Chase urge a more systematic observation and more exact methods of diagnosis and treatment of carpal injuries than exist at present. They believe that the profession at large does not realize that many obstinate sprained wrists are instances of fracture or dislocation of the carpal bones, and that the treatment should be known as definitely as is the treatment of a similar injury of any other joint. The results obtained in six patients operated on lead the authors to recommend a somewhat radical treatment, because the patients who were treated conservatively neither recovered so quickly nor so completely as those who were operated on. The large majority of carpal injuries are either simple fractures of the scaphoid or anterior dislocations of the semilunar bone. These two injuries are frequently combined, and in such cases the proximal fragment of the scaphoid is usually dislocated forward with the semilunar. Simple fracture of the scaphoid gives a definite clinical picture, and may be recognized even without the *x*-ray by the association of the following symptoms, viz, (a) the history of a fall on the extended hand; (b) localized swelling in the radial half of the wrist joint; (c) acute tenderness in the anatomic snuffbox when the hand is adducted; (d) limitation of extension by muscular spasm, the overcoming of which by force causes unbearable pain. A broken scaphoid has little power of repair and appears capable of but slight callous formation. Fractures of the scaphoid which remain untreated or are treated by massage and active and passive motion, generally, if not always, remain united, and the original symptoms often persist for years with only slightly abated tensity. Fracture of the scaphoid may unite if motion of the wrist be prevented during the first four weeks after the injury, but if by this time no union has occurred, future union is unlikely. Excision of the proximal half of a fractured scaphoid gives a somewhat better result than conservative treatment. A posterior incision to the outer side of the tendons of the extensor communis digitorum gives an easy and safe access to the proximal half of the scaphoid. Passive motion of the wrist joint and active motion of the fingers should be begun after this operation. The possibility of the existence of a bipartite scaphoid should be considered in interpreting *x*-rays of simple fracture of the scaphoid, but its occurrence must be very rare in comparison with fracture. Anterior dislocation of the semilunar bone should be recognized clinically, even without the *x*-ray, by the association of the following symptoms: (a) The history of an injury of considerable violence to the extended or twisted wrist; (b) a silver-fork deformity, the posterior prominence of which corresponds with the head of the os magnum, and between which and the lower end of the radius is found a groove representing the position formerly occupied by the now anteriorly dislocated semilunar; (c) a tumor under the flexor tendons of the wrist anterior to the lower end of the radius; (d) a shortened appearance of the palm as compared to the other hand; (e) stiffness of the partially flexed fingers, motion of which, either active or passive, is painful; (f) the persistence of the normal relation of the styloid processes of the ulna and radius and the existence of shortening of the distance from the radial styloid to the base of the first metacarpal. Recent dislocations of the semilunar may be reduced with good result even after the fifth week by hyperextension followed by hyperflexion over the thumbs of an assistant held firmly in the flexure of the wrist on the semilunar. Irreducible dislocations demand excision of the semilunar and the whole or a portion of the scaphoid if there is a coincident fracture of the latter.

79. **Twine Triangular Stitch.**—Maury reports the experimental and clinical status of the method of application of the twine triangular ligature. He employed the strong white twisted twine used in the dissecting room for suspending the extremities of subjects. If the braided line is used, 22 thread, Cuttyhunk, is recommended. An advantage of using a twisted rather than a braided twine lies in the fact that tighter pressure can be made on the tissues to be constricted with the twisted material. It offers less resistance to the tissues and causes less friction on itself when the first knot is made taut. A possible objection to it lies in the fact that during its insertion the twine may uncoil slightly and the operator may inadvertently pass the needle through one of the coils without encountering sufficient resistance to realize it. To prevent this, Maury seizes the stitch at about its center with a thumb forcep and makes sure that it is entirely free before the twine is tied. Twenty-nine dogs and one hog were operated on. On seventeen dogs, the twine triangular gastroenterostomy was done, and in thirteen of these the pylorus or some region of the upper gut was tied off, either at the time of operation or at a subsequent period. The Y gastroenterostomy has been done on five dogs. Seven dogs were experimented on in connection with other work. In one hog, two gastroenterostomies were done February 2. The amimal is still in excellent condition. Of all these dogs, four died as the result of evagination of the cut ends of the gut. Three died with tetanoid symptoms. Three died owing to faulty technic, gut punctures, etc. Fifty per cent. of the dogs who underwent the modified technic of cutting out the center of the triangle died of peritonitis. No dogs have died of peritonitis directly the result of the twine triangular stitch. There has been one failure of the stitch to cut out, owing to its not being tied tight enough. The technic of making the stitch is described in full and is illustrated by numerous cuts.

Journal Missouri State Medical Association, St. Louis.

June.

81 President's Address, Missouri State Medical Association. J. N. Jackson, Kansas City.
82 Symposium on the St. Louis Water Supply. E. E. Wall, St. Louis.
83 Tubo-Abdominal Pregnancy, Associated with Parovarian Cyst and Myomatous Uterus. F. J. Taussig, St. Louis.
84 Mixed-Cell Hypernephromatous Tumor of the Kidney, Associated with Calculous Pyelonephritis. F. J. Taussig, St. Louis.
85 Constipation and Its Relation to Diseases of the Rectum. W. H. Stauffer, St. Louis.

New Orleans Medical and Surgical Journal.

June.

86 Annual Report of 1905, to E. B. Craighead, President of the Tulane University of Louisiana, at the Annual Commencement of the Medical Department, May 3, 1905. S. E. Chaillé, New Orleans, La.
87 Ptosis and the Operation of Motais. H. D. Bruns, New Orleans.
88 Genu-Varum and Valgum, Corrected by Osteotomy. E. D. Martin, New Orleans.

Northwestern Lancet, Minneapolis, Minn.

June 1.

89 Appendicitis in Relation to Pelvic Disease. J. C. Webster, Chicago.
90 Diagnosis of Latent Pulmonary Tuberculosis. L. A. Nippert, Minneapolis.
91 Tonsillectomy for the General Practitioner. J. A. Watson, Minneapolis.

Medical Herald, St. Joseph, Mo.

June.

92 Clinical and Operative Phases of Appendicitis. A. H. Cordier, Kansas City, Mo.
93 Critique of the Medical Profession of St. Joseph. O. B. Campbell, St. Joseph.
94 Synoque. W. T. Waugh. Chicago.
95 Consideration of Recent Methods of Correcting Retrodisplacements of the Uterus. C. H. Wallace, St. Joseph, Mo.

Archives of Otology, New York.

June.

96 Mastoiditis in an Infant with a Sequestrum Consisting of a Large Segment of the Petrous Portion of the Right Temporal Bone. W. C. Braislin, Brooklyn.

97 Two Anatomic Anomalies Encountered During the Performance of Mastoid Operations. W. C. Braislin, Brooklyn.
98 Mooted Points in the Treatment of Protracted Cases of Acute Middle-Ear Diseases and their Complications. A. Wiener, New York.
99 Two Cases of Acute Otitis Media Suppurativa, Followed by Mastoiditis and Meningitis, and Caused by the Diplococcus Intracellularis of Weichselbaum. G. Bacon, New York.
100 Infective Sigmoid Sinus and Jugular Thrombosis Complicated by Lepto-meningitis; Lumbar Puncture; Subdural Irrigation; Death. J. D. Richards, New York.

Medical Sentinel, Portland, Ore.

June.

101 Progress in Nervous and Mental Diseases. Wm. Honse, Portland.
102 Extirpation of External Carotid Arteries with Branches, for Cure of Certain Malignant Growths. E. P. Geary, Portland.
103 Prolapse of the Uterus and Its Treatment. A. J. Giesy, Portland.

Annals of Gynecology and Pediatry, Boston.

June.

104 Diphtheria, Its History and Control by Antitoxin. M. Long, Hingham, Mass.
105 Investigations of the Energy of the Life Functions in Women, After Extirpation of the Uterus, with and without the Adnexa. Drs. Mandl and Burger, Boston.
106 Consideration of Recent Perineal Lacerations. G. Clarke, Cambridge.

Canadian Practitioner and Review, Toronto, Canada.

June.

107 Cystic Degeneration of the Villi of the Chorion and Its Relation to Chorion Epithelioma. C. J. C. O. Hastings, Toronto.
108 Symptomatology and Diagnosis of Smallpox from a Study of Thirty-three Cases. G. E. Greenway, Toronto.

Pacific Medical Journal, San Francisco.

June.

109 Address. College of Physicians and Surgeons. D. M. Delmas, San Francisco.
110 Relation of the Public to the Medical Profession. H. D. Power, San Francisco.
111 Is the Mosquito a Disseminator of Malaria? J. M. Hnrley, San Bernardino, Cal.
112 Use of Copper Sulphate and Calcium Oxid as a Deodorant, Disinfectant and Possible Purifier of Water Supplies. C. E. Jones, San Francisco.
113 Urethral Chancre with Misleading Complications. L. Gross, San Francisco, Cal.

Denver Medical Times.

June.

114 Psammoma of the Maxillary Sinus. J. C. Mnnro, Boston, Mass.
115 Rheumatoid Pains Following Injuries in High Altitudes. C. F. Kieffer, Fort D. A. Russell, Wyo.
116 Congenital Ulcer of Stomach. J. N. Hall and T. H. Hawkins, Denver.
117 Infection with Fly Larvæ. W. C. Mitchell, Denver.
118 Medical Ethics. B. B. Frankle, Pueblo.
119 Normal Obstetrics. T. M. Burns, Denver, Colo.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

July 8.

1 The Nature of Tabes. W. R. Gowers.
2 Indirect Injuries of the Optic Nerve. J. J. Evans.
3 *Substitute Feeding in Infants. T. H. Sanderson-Wells.
4 Increase in the Consumption of Animal Food; a Survey of the Past Fifty Years. C. Watson.
5 *Clinical Method for the Quantitative Estimation of Uric Acid in Urine. •N. F. Surveyor.

3. **Substitute Feeding in Infants.**—Sanderson-Wells concludes that all proprietary foods are bad because, (1) they are all deficient in fat, one of the most essential elements of an infant's food; (2) they are not antiscorbutic; (3) they contain as a class too much sugar; (4) they mostly contain foreign elements: starch, maltose, cane sugar, etc. Wet nursing, he declares, is seldom or never justifiable on the following grounds: (1) It is inaccurate. The milk of one mother does not necessarily suit the child of another, and although analysis is possible it is practicable, and we have little chance of modifying the supply to suit our requirements. (2) It is inconvenient, upsets the house. Domestic difficulties are great and misconduct frequent. (3) No examination, however careful and thorough, will exclude the presence of syphilis in a woman. In preparing cow's milk for the use of the infant, careful attention must be given to having the various constituents in as nearly the same proportion as they are found in mother's milk. Lactose is the proper sugar to use. The milk must be absolutely sterile, and this is best attained by pasteurization at 70 C., for thirty minutes.

5. **Method for Quantitative Estimation of Uric Acid in Urine.**—Surveyor describes his method as follows: For this method, from 5 to 10 c.cm. of urine is quite sufficient, and the only reagent required is a couple of tiny drops of pure hydrochloric acid; the drops must be so small that 50 such equal 1 c.cm. of the acid. This can be easily managed by using a capillary tube, drawn out in a blowpipe like the ordinary glass bristle used for bacteriologic purposes. Have the urine as free as possible from extraneous dirt. Remove albumin and pus, if present, by adding acetic acid and heating the urine. Render the urine slightly alkaline by adding tiny drops of strong NaHO—boil it, and take 5 c.cm. of this boiled urine for examination. Add two tiny drops of HCl from a capillary pipette (each drop equals 0.02 c.cm.), stir it well; see that it is quite clear again. Freeze it and centrifugalize till the whole has remelted, and read off the percentage of deposit as soon as the temperature is about 25° C. In case there is much pus or albumin or any other deposit is present, it must be removed by boiling 10 c.cm. of the urine acidulated with a tiny drop of glacial acetic acid, and 5 c.cm. of the filtered urine is to be treated as above. The temperature of the freezing mixture is about 12° .C. in a room at 25° C.

The Lancet, London.

July 8.

6 Clinical Lecture on Automatic Flushing of the Stomach in Certain Cases of Vomiting. W. H. Bennett.
7 *Analysis of 300 Consecutive Gynecologic Laparotomies. A. H. N. Lewers.
8 *Hypertrophy of the Mammary Glands. J. Darquler.
9 Sporadic Case of Cerebrospinal Meningitis. J. R. Collins.
10 Perforated Gastric Ulcer, with Fatal Hemorrhage from the Bowel in an Infant Forty-five Hours Old. A. G. Bisset.
11 Rates of Attack by Enteric Fever in Ninety Large Towns of England and Wales. G. S. Bnchanan.
12 Examination of Cultures and Smears from the Throat and Nose. W. T. G. Pngh.

7. **Analysis of 300 Laparotomies.**—The cases tabulated by Lewers include the following: ovariotomy, 100; abdominal hysterectomy for fibroids, including panhysterectomy for fibroids, 73 cases, 4 deaths; removal of uterine appendages for chronic inflammation, 47 cases, 4 deaths; laparotomy for ectopic pregnancy, 33 cases, 1 death; abdominal hysterectomy, for conditions other than fibroids, 17 cases, 6 deaths; exploratory laparotomy, 14 cases, 5 deaths; Cesarean section, 8 cases, 1 death; myomectomy, 3 cases; hysteropexy, 5 cases. The mortality for the whole series was 7 per cent. The article is to be concluded in a subsequent issue.

8. **Hypertrophy of Mammary Glands.**—In the case reported by Darquier the mammæ were enormously increased in size, reaching the umbilical line. When submerged in water, the right breast displaced 15 liters and the left 11 liters. The right breast weighed 13 kilograms, the left, 10 kilograms. Microscopic examination showed that the enlargement was due to the formation of fibrous meshes with few cells and many vessels with thick fibrous walls. The glandular acini were atrophied by compression. The pathologic diagnosis was chronic fibrous mammitis and diffuse fibroma of the mammæ.

Journal of Tropical Medicine, London.

July 1.

13 Reports of Commission on Investigation of Mediterranean Fever. Part II.
14 Cataracts and Secondary Cataracts and Membranous Opacities of the Vitreous. G. H. Fink.
15 *Classification and Pathology of Beriberi. H. Wright.
16 Experiments Relative to the Toxicity of the Disinfectant Cyllin. D. Sommerville.

15. **Classification and Pathology of Beriberi.**—Wright makes the following classification: 1. Acute pernicious beriberi, in which the onset is sudden, with more or less severe symptoms of gastroduodenal irritation and cardiac paralysis. There may be varying degrees of pulmonary, vaso-motor and sensorimotor paresis. On first examining a case in this class it may generally be predicted that death will shortly occur. 2. Acute beriberi, in which the onset is sudden, though never so sudden as in acute pernicious beriberi, with more or less noticeable symptoms of gastroduodenal irritation and concomitant vasomotor and sensorimotor paresis. 3. Subacute beriberi, in which the onset of the disease is more insidious than in either of the above classes of cases; in which the symptoms of gastroduodenal irritation may escape notice, and in which the

concomitant sensorimotor and vasomotor paresis may be so slight as to involve only one or two movements, a few areas of sensation and the vascular supply to the front of the legs. 4. Beriberic residual paralysis or neuritis, or the disease as it appears after the symptoms of gastroduodenal irritation have disappeared, and after the causal organism and its toxin have accomplished their work and been eliminated.

Bulletin de l'Académie de Médecine, Paris.

Last indexed page 76.

17 (Year LXIX No. 23.) Case d' achondroplasie. Sevestre.
18 (No. 24.) Prolapsus de la muqueuse de la vessie à travers l'urèthre chez la femme (of female bladder through urethra). F. Villar.
19 *Influence nocive de la vélocipédie et de l'automobilisme sur la vision et les moyens d'y remédier. Mirovitch.
20 *Alimentation dans la tuberculose expérimentale. Influence nocive de la viande cuite (injurious influence of cooked meat). C. Richet.
21 (No. 25.) *Utilisation des matières grasses chez les tuberculeux (of fats). Laufer and Pouchet.
22 *Action thérapeutique des formiates. H: Huchard.
23 Mort rapide de 2 juments ayant présenté à l' autopsie une plénitude extrême de l'estomac (death of mares solely from overeating). H. Benjamin.
24 (No. 26.) *Heredo-syphilis de seconde génération. E. Fournier.

19. **Protection of Eyes in Automobiling.**—Mirovitsch expatiates on the injury to the eyes from the high speed in bicycle or automobile riding. He suggests as a remedy some protecting goggles he has devised which shut out the wind entirely, while allowing a gentle circulation of air.

20. **Zomotherapy in Tuberculosis.**—Richet's experiments on tuberculized dogs have attracted considerable attention. He fed a certain number on raw meat exclusively, the same number on cooked meat exclusively, and others on starchy foods, etc. At the end of the year, the group fed on raw meat was in far the best condition, while all the dogs fed on cooked meat had died. Animals kept fasting thrived better than those fed on cooked meat. He ascribes this to the fact that they lived on their reserves, which are essentially raw meat. He does not venture to apply these results to man, although he remarks that it is certainly suggestive that in experimental tuberculosis cooked meat kills, while raw meat sustains life in better condition than any others of the foods.

21. **Utilization of Fats in Tuberculosis.**—Laufer has become convinced in the course of much clinical and experimental experience that the albuminoids, carbohydrates and fats must be ingested in a certain definite proportion to derive benefit from them. When one of these groups is given predominance, especially the fats, the weight increases rapidly at first, but it soon becomes stationary and then rapidly declines, while there is more or less anorexia. In presenting his memoir Pouchet confirmed these statements and emphasized the importance of the diet for preparing a favorable soil for the action of drugs or therapeutic measures in general. The resisting powers of the patient depend on the diet. His food determines his general condition and his receptivity for drugs.

22. **Formates in Therapeutics.**—Huchard protests against the sensational statements that have been credited to him in regard to the tonic action of the formates on the muscular system. He also warns against the danger of immoderate dosage, disclaiming all responsibility when more than from 1 to 2 gm. is taken during the twenty-four hours. A Lyons physician has already called attention to what he calls "formic fever," due to improper use of the drug.

24. **Syphilis Inherited to the Third Generation.**—Fournier has collected 116 cases of the lesions or stigmata of the second generation of hereditary syphilis. His analysis of the data compels him to accept the possibility of this transmission of inherited syphilis from the grandparent to the grandchild. It generally manifests itself by dystrophic stigmata, similar in every respect to those of inherited syphilis in the first generation, but occasionally the lesions may be those of true, virulent syphilis. The latter form was observed in about 14 per cent. of the cases. Only three-fifths of the descendants in this second generation lived to grow up.

Presse Médicale, Paris.

Last indexed page 76.

25 (No. 44.) *Miners' Anemia in the Army.—L'anémie du mineur en milieu régimentaire. Thooris.
26 Technique de l' appendicectomie. Chaput.
27 (No. 45.) *La tuberculose en Chine (China). A. F. Legendre.
28 *L'obstruction brusque dans le tubage sans surveillance. E. Escat:
29 (No. 46.) Diagnostique des tumeurs de l'hypochondre droit (in right hypochondrium). T. Tuffier.
30 (No. 47.) Des embolies hydatiques de l'artère pulmonaire. M. Garnier and J. Jomier.
31 *L'hydro-hémolyse. Recherche des microbes dans le sang. L. Nattan-Larrier and A. Bergeron.
32 (No. 48.) L'atonie dans les dyspepsies. A. Mazeran.
33 Comment il faut administrer les formiates (mode of administration of formates). A. Martinet.
34 (No. 49.) Le congrés colonial, Paris, June 5-9, 1905.
35 Des fractures supra-condyliennes de l'humérus chez l'enfant (in children). Deniker and P. Dezarnaulds.
36 *Traitement des dartres du visage (patches on face). L. M. Pautrier.
37 (No. 50.) *La cystoscopie à vision directe. G. Luys.
38 *Nouvelle pathogénie des varices. R. de Gaulejac.
39 *L'alimentation par les oeufs (eggs). A. Martinet.
40 (No. 51.) Des kystes hydatiques des os du crane (of skull). Antoniu.
41 *De la médication oxytocique (sugar and quinin). G. Keim.
42 (No. 52.) *Pylorospasme avec hypersecretion et tétanie. T. Jonnesco and J. Grossman.
43 The Formates in Therapeutics. C. Vermeulen.
44 Traitement de l'ozène par les injections de paraffine solide. G. Mahu.
45 Report of German Congress of Surgery. (Commenced in No. 40.)

25. **Miners' Anemia in the Army.**—Thooris found a number of cases of severe miners' anemia among the new recruits who previously had been miners. The ankylostoma was found in the majority, but in others the anemia seemed to be due to the *Trichocephalus bothriocephalus* or ascaris. The helminthiasis had an evident debilitating effect, as a rule.

27. **Tuberculosis in China.**—Legendre describes the condition observed in the remote province of Se Tehouen, where he has established a medical mission. Tuberculosis and opium smoking are very common, and his impression is that the Chinese race is thoroughly decadent both physically and morally.

28. **Fenestrated Tube for Intubation.**—Escat gives illustrations of the tube he has devised to prevent the possibility of sudden obstruction. There are three or four openings in the lumen, on each side, arranged in a spiral. Even if the main lumen becomes obstructed at any point, there is still room sufficient for ingress and egress of air at some part of the tube. He suggests that the membrane obstructing the tube might be forced out of it by using a Politzer bag or similar devise to blow it through.

31.—**New Technic for Detecting Microbes in Blood.**—The technic described is based on the hemolytic properties of distilled water. The clot derived by centrifugalizing a little blood diluted with distilled water is used to inoculate animals on culture media. The positive results parallel those of other more complicated technics. The proportions must be exactly 200 gm. of water for 10 c.c. of human blood or pleural effusion. The mixture is shaken in the vial for three or four minutes and then distributed in from two to four centrifugalizing vials, and centrifugalized for fifteen minutes. There is very little sediment, and it is free from fibrin. The fluid is decanted, and the sediment can be aspirated with a pipette and spread on from 6 to 8 cover glasses, fixed with heat, and stained by Ziehl's or other technic as usual.

36. **Treatment of Rebellious Patches on the Face.**—Pautrier refers to what he calls *dartres*, a vague French term meaning a rebellious skin affection, which may be dry impetigo, eczema or pityriasis. It may be cured in children sometimes by merely substituting salted water for the ordinary faucet water, with or without sodium borate or bicarbonate. In women, all irritation from veils, sun, wind, extreme cold, etc., should be avoided and the face should be bathed in water that has boiled long, thus getting rid of some of its lime. The affection is probably due to the streptococcus, and suitable local treatment should be used. He commences with Brocq's salve:

R.	Sodium borate	gr. viii		50
	Zinc oxid	ʒss	2	
	Cerate or vaselin	ʒivss	18	
	Tincture of benzoin	m. xv		9

A glycerolate with tannin and calomel may be useful or a salicylic-acid combination. The salve should be wiped off in the morning, and during the day a mixture of sodium borate, glycerin and rose water should be applied. The nasal mucosa should be disinfected at the same time with tepid salt solution or otherwise once or twice a day.

37. **Cystoscope for Direct Vision.**—Luys has perfected his cystoscope which does away with the prism and the necessity for distension of the bladder with air or water. He applies it in the Trendelenburg position and gives illustrations of the instrument and its mode of application, enumerating six special advantages of this technic.

38. **Pathogenesis of Varices.**—Gaulejac suggests that varices may be due to an extra strain on certain parts of the veins. These overstrained valves yield, and varicose enlargement is the result. Compression of the walls of the vein, always at a certain place, impairs the nutrition at this point. This explains why the bicycler, the coachman, women working the sewing machine or in the habit of sitting long, have varices. It also demonstrates how they can be avoided by changing the position frequently, thus changing the point of compression and strain. This conception of varices entails the specificity of varicose enlargements according to trades and manners of life. It also demonstrates that gentle, varied exercise is the best means of prophylaxis and treatment. If this fact were borne in mind in the care of the puerperium, phlebitis might become less common. It is much less frequent among the women of the working classes than among the well-to-do, probably because they are obliged to resume early their household duties instead of staying so long in bed after delivery.

39. **Eggs in Diet of the Sick.**—Martinet declares that the cook is as important an auxiliary as the pharmacist for the physician, and that an annotated cookbook should be found in every physician's library. He gives a number of recipes for various egg dishes, with their calories, mentioning a number of points that should be observed, but of which the average cook is ignorant. For instance, if omelets, custards and such dishes are cooked until the albumin is entirely coagulated, their digestibility is not that of a soft-boiled but of a hard-boiled egg. The addition of butter, etc., also reduces their digestibility. He says that the Italian *zabaglione*, well made, represents about 800 calories and can be taken by the most delicate stomachs. He gives the directions for it and also for "egg beer," which represents 240 calories. The yolk of egg in bouillon he regards as the best dish for the convalescent. The yolk of egg in 200 gm. of milk represents 185 calories, with about 11 gm. of albumin, 12.5 gm. fat, and 9 gm. of carbohydrates. The proportion of fat is too high in comparison with the carbohydrates. This can be partially corrected by adding 15 gm. of sugar and a pinch of salt.

41. **Oxytocic Medication.**—Keim discusses the action of sugar and of quinin on the contractility of the uterus. Both have a marked and rapid action in promoting the contractions, but only when labor is already established, when the uterine muscles are already in play. He gives the sugar or lactose diluted and between meals. When labor commences, if it is normal and rapid, the reserves of sugar in the organism suffice for delivery, but, if these reserves are not quite enough, sugar given when the dilatation of the cervix has reached a certain point will aid materially in successful delivery. It increases the muscular energy and aids in the expulsion of the child. He gives the sugar or lactose in three doses of 25 gm. each at half-hour intervals. Quinin has a similar action, but it has several disadvantages, while sugar has none.

42. **Pyloric Spasm and Tetany.**—Jonnesco describes a case of gastric hypersecretion, dilatation and tetany successfully treated by surgical interference. Operations have been performed in 11 such cases to date, with 8 recoveries and 3 deaths from postoperative complications (Fleiner and Gumprecht). In Jonnesco's case there was permanent hyperchlorhydria with insufficiency of the second degree. The various symptoms were noticed for about ten years. They grew worse during the last two, the attacks of pain became more frequent and were relieved only by copious vomiting. The extreme hyperacidity after an error in diet induced pyloric spasm, probably to prevent the invasion of the intestine by the too irritating stomach contents. The painful spasm was followed by vomiting, and the patient was then relieved until the next attack, the stomach motility in the interval being apparently normal. After years of these troubles the emaciated patient restricted himself for a week to exclusively starch diet, which materially aggravated the condition, which was not improved by tentative mercurial treatment nor by a course of olive oil. Hypersecretion became superposed on the hyperchlorhydria; the secretion amounted to several quarts a day, while scarcely any was evacuated into the intestine. The consequent congestion in the walls of the stomach induced hematemesis, and the great loss of fluids by the hypersecretion in the stomach was the cause of the tetany. This was relieved by saline infusion, and the hard and thickened pylorus was excluded from the alimentary canal by a side-to-side transmesocolic gastroenterostomy, which cured all the symptoms as if by magic. Two months later the stomach content was approximately normal. This case confirms Fleiner's assumption that the loss of fluids reduced the dilution of the tetanizing toxin normally present in the blood. When not diluted enough to pass through the renal filter it accumulates in the stomach—although not produced there originally—and induces actual tetany.

Centralblatt f. Chirurgie, Leipsic.

Last indexed page 224.

46 (XXXII, Nos. 25-26.) *Aid to Rapid Suturing.—Ein Hilfsmittel zu raschem und exaktem Nähen. O. Bernhard (Samaden).
47 (No. 27.) Zur operation der komplizierten Hasenscharte (complicated hare-lip). Küster (Marburg).

46. **Aid to Rapid and Exact Suturing.**—Bernard's observation, the surgeon, after a long and tedious operation, is too apt to slight the suturing of the skin or to leave it to some assistant, and to remedy this he uses a set of clamps similar to Tiemann's bullet forceps. The extreme tips curve abruptly inward, the tips crossing and very sharp, the handles locking. These "wound clamps," as he calls them, answer the same purpose as Michel's clamps or agrafes, but, unlike them, can be used for each tier of the suture in turn.

Centralblatt f. d. Grenzgebiete, Jena.

Last indexed XLIV, page 747.

48 (Viii, Nos. 1-4.) *Die operative Therapie der Gehirn-Syphilis (of brain). E. Stransky. Collective review of recent literature.
49 *Erfolge der chirurgischen Behandlung bei Peritonitis. W. Klink. Collective review.
50 *Roentgen-Behandlung bei Leukämie und Pseudo-Leukämie. K. H. Schirmer. Collective review.
51 (Nos. 4-7.) *Stab Wounds of Spinal Cord.—Stichverletzungen des Ruckenmarkes. G. Flatau. Collective Review.

48. **Operative Treatment of Syphilitic Brain Lesions.**—Stransky reviews forty-eight articles bearing on this subject, which, he remarks, has been better studied in America and England than elsewhere. He cites the details of the various cases in which an operation was done, his general impression being that the unfavorable termination in some cases was due to the incorrect localization or age of the process before intervention. The syphilitic nature of the lesion is no indication against operating, but rather the reverse, if specific treatment does not promptly relieve or if it can not be waited for. The physician should merely advise the operation, not urge it. Gummata in the brain are generally of meningeal origin, and the symptoms may be due exclusively to a syphilitic affection of the meninges. In quite a large proportion of the cases of syphilitic cerebral lesions treated by operation the relief and cure obtained by the operation have proved permanent. The prophylactic value of such interventions can not be overestimated.

49. **Surgical Treatment of Peritonitis.**—Klink's article is based on 598 articles on this subject, the total number of cases on record now being 1,459, with 643 recoveries and 816 deaths. He tabulates the cases reported by various authors, with columns of recoveries and deaths. Lennander's statistics in 1904 were 283 operations of this kind, with 236 recoveries to only 57 deaths; in 1895 his statistics were 10 recoveries and 4 deaths, and in 1899, 2 recoveries and 4 deaths. Only two of the other surgeons listed have passed the one hundred mark, Sonnenburg with 58 recoveries and 55 deaths (1900) and von Beck with 54 recoveries and 46 deaths (1903). The proportion of cures has risen from 27 per cent. before 1898 to 59 per cent. The proportion of cures is 18 per cent. when the operation is done in the first three weeks in case of typhoid perforation. On suspicion of perforation, the surgeon should operate

at once, not waiting for the shock to pass over. The moribund and the decrepit aged should not be operated on. In 1,069 cases the peritonitis was the result of appendicitis. The proportion of cures was 35 per cent. (1888-1904), but in the 482 operations performed since 1900, 45 per cent. of the patients were cured. In 52 cases of peritonitis from gastrointestinal perforation, 27 per cent. of the patients recovered, and 50 per cent. in 32 cases in which the peritonitis had developed following some suppurative gynecologic affection, generally a pyosalpinx. In typhoid, perforation of the large intestine displays a tendency to encapsulation, not noted in case of perforation of the small intestine. The latter runs a rapidly fatal course unless arrested by operative intervention. There is no meteorism during the first twenty-four hours, unless pre-existent. It develops later and is an accessory sign of the functional obstruction of the intestine resulting from the peritonitis. If the latter remains circumscribed, the paralysis of the intestine may spontaneously subside. The laparotomy relieves the intestine, but the majority of the patients who died after the laparotomy did not succumb to the direct consequences of the peritonitis, but to the unrestrainable progress of the ileus. The perforations were multiple in about 10 per cent. of the cases on record. In 80 per cent. the perforation was located just above the ileocecal valve; in 12 per cent. in the colon, and in a few instances in the appendix. Peritonitis by contiguity can not be absolutely differentiated from perforation peritonitis, but it may heal spontaneously. Rupture of the typhoid spleen and of suppurating mesenterial glands must also be remembered in differential diagnosis. Peritonitis due to the action of the pneumococcus is generally cured by operative intervention. Forty out of 50 children operated on for this cause have recovered. All that is needed is evacuation of the abscess and extensive drainage. In children, the onset of the affection is as stormy as that of any peritonitis, but it soon passes into a chronic phase. The thick, creamy, greenish pus may perforate through the umbilicus. It may accumulate by the quart, but the large proportion of fibrin induces formation of adhesions, and they are responsible for the generally favorable outcome. The pus accumulates near the umbilicus, in the hypogastrium or iliac fossæ. The affection may last for weeks, but the child is doomed without surgical treatment. The condition is rare in adults and assumes more the aspect of ordinary peritonitis. Typhoid, appendicitis and tuberculous peritonitis must be excluded in the diagnosis.

50. **Roentgen Treatment of Leukemia and Pseudo-leukemia.**—Seventy articles on this subject have already been published in eight different countries since Pusey's and Senn's pioneer work in 1902 and 1903. Schirmer cites the details of each of the 72 cases on record of leukemia treated by Roentgen exposures. In nearly every instance, the general health was notably benefited. The spleen grew smaller and the leukemic composition of the blood became improved or the blood findings became normal. In some cases there was a transient disappearance of myelocytes. This freedom from symptoms, it has been found, is liable to last for several months. Recurrences are also amenable to the same treatment. Indications for prophylactic exposures during an interval free from morbid manifestations must be based on the blood findings at the time. Similar favorable results have been obtained in Banti's disease, and Dinkler has reported a case of idiopathic enlargement of the spleen which subsided under Roentgen exposures without recurrence to date. As the erythrocytes show a marked resistance to the exposures, no success need be anticipated in pernicious anemia, especially as Grawitz has recently directed the treatment of this affection into new routes by his assumption of causal intestinal autointoxication. (See these columns, page 638 of volume xliii.) The local action of the Roentgen rays has no influence on toxins in the circulation. Roentgen treatment of pseudoleukemia is older than that of leukemia, but not a single instance of failure has been reported to date. As Senn's name is connected with the first application of the *x*-rays to leukemia, so Pusey takes the lead in the cases of pseudoleukemia, his first publication having appeared in The Journal, Jan. 18, 1902, a year before Senn's. In every case known, the rays have caused the rapid involution of the glandular tumors. The enlarged glands subside more slowly than the enlarged spleen as a rule. On account of the multiple localizations, the exposures were generally more numerous and more intense than in the cases of leukemia, and by-effects were more frequently observed. Hard tubes mostly were used. Milchner and Mosse advise exposure of the peripheral portion of the bone marrow rather than the center, as more cells are accumulated at the periphery. Perthes covers the skin with a thin sheet of tin foil to divert any possible soft rays. Guerra enhances the activity of the rays by preliminary subcutaneous injection of methylene blue. Levy-Dorn recommends what he calls radial exposure, that is, to expose the focus on two or more sides, in order to insure the deeper penetration of the rays. A large proportion of the Roentgen energy is lost by the resistance of the tissues. He advocates increasing the distance to 30 cm., as the penetrating action of the rays under the skin does not diminish in the same proportion as their action on the external skin. He thinks that too abrupt resorption of pathologic masses is liable to be injurious. He has observed two cases in which retrogression of sarcomata was accompanied by conditions suggesting collapse, with intense sweating, etc. A larger number of "refractory" doses is borne much better. His method of partial radiation of the single glands and groups of glands seems logical. Heineke's researches, described in The Journal on page 86 of volume xliii, are cited by Schirmer as having established a scientific basis for all this empiric work. He regrets that so few of the cases have been followed systematically to date and the remote results published.

51. **Stab Wounds of Spinal Cord.**—Flatau has found 108 communications on this subject in the literature, and analyzes the findings in the numerous cases reported, as also in the experimental researches. He thus presents a composite picture of all that is known on the subject to date. The lesions induced by a stab or cutting wound of the spinal cord differ with the violence of the injury, whether splinters of bone or scraps of clothing were carried into the wound, and whether the marrow was cleanly incised or crushed, and whether there was much hemorrhage and inflammation. The communications on the reparatory processes generally harmonize with Stroebes' experiences. Regeneration of conducting fibers is not probable after a stab wound.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

52 (XXXI, No. 24.) *Treatment of the Morbidly Lean.—Ueber die Behandlung der Abmagerung. W. Ebstein.
53 *Action of Alcohol on Circulation.—Wirkung des Alkohols auf den Blutkreislauf des Menschen. M. Kochmann.
54 *Foreign Bodies in Esophagus, etc.—Die traumatischen Erkrankungen der oberen Speisewege und ihre Behandlung. G. Glücksmann.
55 *Ueber Lungentuberculose und Schwangerschaft, nach Beobachtungen im Hochgebirge (and pregnancy). O. Burckhardt.
56 Advances in Treatment of Laryngeal Affections.—Fortschritte in der Behandlung der Kehlkopfkrankheiten. Hopmann.
57 *Tuberculöse Ohrerkrankungen im Säuglingsalter (ear affections in infants). Haike.
58 Ueber Metastasenbildung beim Adenocarcinom der Mäuse (metastasis in mice). J. W. Baesluck (Buffalo).

52. **Treatment of the Morbidly Lean.**—Ebstein groups the causes of morbid leanness as those accompanied by other morbid symptoms and those in which the individual grows thin without any other appreciable morbid manifestations. Long-continued intellectual work is one cause of morbid leanness. After removing the cause, treatment should be symptomatic, and many hints can be gained from the experiences in fattening animals for the market. Sheep and cattle can be kept fat for a long time on little food by keeping them from active exercise and protecting them against cold. Rest and warmth are, therefore, important factors in promoting the taking on of fat. Psychic measures are frequently valuable, especially in case of loss of appetite. A carefully regulated, rational utilization of the fat-sparing action of alcohol is also advisable, as well as administration of arsenic and regulation of the bowels. The main point in treatment, however, is the diet. Abrupt change of diet is not wise, but the more fat taken the better. In his experience with treatment of obesity he found that as the patients lost their fat their heart action became much improved. His experience has further shown that ingestion of carbohydrates causes deposits of fat in and around the heart, thus

hampering its action, while ingestion of fats is free from this danger. This coincides with what is observed in the hearts of pigs fattened on fats. He consequently orders fats for his patients instead of carbohydrates. Neurasthenic conditions demand change of environment and treatment in a special institution, therefore, is indispensable in such cases, with the application of individualized physical and psychic measures. The physician should be a model for the patient not only in what he says, but in what he does. Ebstein pays a high tribute to G. M. Beard, who invented the term neurasthenia, and remarks that his principles are the basis of almost later work in this line. In conclusion, Ebstein gives the daily bill of fare for a morbidly lean person in his private clinic. At 7 a. m. oatmeal porridge, into which butter has been stirred. At 8, milk or cocoa, with a buttered roll or piece of zwieback. At 9, bouillon, with egg or kefir and a slice of bread. At 12, a wineglass of port or madeira, with a few cakes. At 1:30 p. m., dinner, bouillon, with or without an egg stirred in it; fish or a little meat, with a change of light vegetables, or with potato, rice pudding, or boiled rice, green peas or beans, roast meat, jelly, and some nourishing flour pudding. At 4 p. m., milk or cocoa, with a roll or piece of zwieback. At 6, kefir or milk, and at 7:30, milk or gruel and bread, with a slice of cold meat or some warm hot meat. Butter should be taken freely at every meal, and the amounts of the different articles of food should be small at first and gradually increased, studying the patient's tastes and wishes.

53. **Action of Alcohol on Circulation.**—Kochmann's experiments on animals and on healthy and sick persons has demonstrated that alcohol raises the blood pressure. This is due to a vasoconstriction in the domain of the splanchnic nerve while there is vasodilatation in the peripheral circulation. These vasomotor changes increase the blood supply in the heart muscle and thus stimulate it to renewed activity.

54. **Foreign Bodies in the Esophagus.**—The full title of Glückmann's article is "Traumatic Affections of the Upper Alimentary Canal and Their Treatment." This title expresses the motive of his communication, which is to call attention to the extremely traumatic character of such an event as the swallowing of a foreign body, and the liability to infection with serious complications, even fatal septicemia. The physician must also bear in mind the possibility of infection from the instruments he uses in extraction of the foreign body. The patient usually locates the foreign body by pointing through his mouth when it is above the constrictors of the pharynx, while he points to his neck when it is located farther down. The soft, comparatively insensitive tonsil tissue seems to favor the penetration of sharp foreign bodies, such as needles or fishbones. If the patient in such a case locates the pain from the outside, pointing to the side of the neck near the larynx, it will be found that the foreign body has passed farther along or expelled by the vigorous reflex action of these parts, and that the pain is the result of the local damage inflicted. It frequently happens that a person with pharyngitis and reflex neuroses imagines that he has swallowed a foreign body. A scrap of crust scratches the irritated mucosa and he is convinced that it is a severe foreign-body lesion. Careful examination of mouth, pharynx and larynx, with digital exploration of the constrictor muscles of the pharyngeal region, are sufficient at first. No instrument should be used, but radiography will be found a great help, and also the esophagoscope and extractor with the dilating ball which are the features of his instrument, previously described and illustrated in THE JOURNAL, page 157 of volume xliii. He reports a number of cases treated on these principles. One patient coughed up a fishbone while being prepared by rest in bed, ice to the neck and morphin for tracheobronchoscopy, as the esophagoscopy had been fruitless.

55. **Tuberculosis Plus Pregnancy According to Experiences in a Mountain District.**—Burkhardt practices in Switzerland and his observation of 15 cases of pregnancy in tuberculous women has not confirmed the experience of others in regard to the deleterious influence of the state on the pulmonary affection. He found that the sojourn in the mountains induced a favorable turn in the tuberculosis, notwithstanding the existent pregnancy. Cases of progressive phthisis became arrested in the course of the pregnancy. Abortion had no curative action and in some cases proved directly injurious. Artificial abortion, therefore, should be restricted to cases of the most advanced phthisis or to those complicated by uncontrollable vomiting. During childbirth, the loss of blood and physical effort should be restricted to the minimum, possibly resorting to artificial delivery and using chloroform freely. The mother must refrain from nursing the child. The course of treatment in the mountain region should be continued for from four to six months after delivery, even in the mildest and most favorable cases, to forestall tardy disturbances. Infants thrive in the mountain climate. In classifying cases of tuberculosis he accepts Turban's classification as an advance, but still far from the ideal, as it does not afford a basis for prognosis. Besides the lung findings, the sputum, pulse, temperature, weight, height, general condition and heredity should all be considered in relation to the further course of the disease. He believes that a child may be born with congenital tuberculosis which, like syphilis, may remain latent for many years before showing signs of its presence. He urges others practicing in mountain districts to publish their experiences, and relates the details of about a dozen cases.

57. **Tuberculous Ear Affections in Infants.**—Haike is convinced that a tuberculous ear affection may develop in an infant and cause serious general disease without any noticeable local symptoms. Preysing found marked tuberculous lesions in the ear in only 2 out of 197 infant ears. The only other writers in the accessible literature who have discussed the subject are Schwabach, Rebbeling and Finkelstein. Haike has had occasion to observe 5 cases of tuberculous ear affections, the first symptoms noted from the fifth week to the seventh month of life, and which all terminated fatally in a few weeks or months, none surviving the ninth month. Four of the infants had phthisical mothers, and nothing was known of the mother of the fifth child. In every case the course of the affection could be traced from the mouth and throat through the tube into the ear—conclusive demonstration that the affection had been acquired by contact with the tuberculous mother. The evidence is all in favor of the assumption that the ear affection was primary, although some or all of the glands became involved later. Caseous degeneration was found in the mastoid process in every case. These findings teach the necessity for removal of infants from tuberculous environments.

Münchener medizinische Wochenschrift.

59 (LII. No. 21.) Agglutination of Paratyphoid Bacilli by Typhoid Serum.—Agglutinierende Wirkung des Serums von Typhuskranken auf Paratyphus-Bazillen, nebst Bemerkungen über makroskopische und mikroskopische Serodiagnostik. Korte and Steinberg.
60 Case of Probable Pernicious Anemia plus Leukemia.—Zur Leukanämiefrage. Kerschensteiner.
61 *Occupation in Therapeutics of Nervous Affections.—Bedeutung und Wert der Arbeitsbehandlung Nervenkranker. G. Geissler.
62 Adenoid Vegetations as Favoring Epidemic Cerebrospinal Meningitis.—Zur Verhütung der ep. Zerebrospinalmeningitis. O. Dornbluth.
63 *Sugar as Food for Diabetics.—Wurfelzucker als Nahrungsmittel für Diabetes. Oefele.
64 Self-Protection Against Venereal Disease.—Schutzmittel gegen Geschlechtskrankheiten. O. Grosse (Munich).
65 *Ueber eine neue lokale Behandlungsmethode des Furunkels und Karbunkels. A. Marcus.
66 *Protection for Vaccination Pustule.—Ueber Impfschutzverband. A. Groth.
67 Exhibitions of Hypnotism: Waking Suggestion.—Ist Wachsuggestion erlaubt? A. Riedel.

61. **Occupation in Treatment of Mental Affections.**—Geissler greets the introduction of systematic therapeutic occupation as an advance in the treatment of the mentally unsound. Its advantages are in the line of its psychic influence, but this is also its weak side, as so many fail to respond. It is, nevertheless, another valuable means at our disposal, and those who have introduced it should take courage, he says, and proceed to study further and to perfect the technic.

63. **Sugar as Food in Diabetes.**—Oefele has been cautiously testing the results of allowing loaf sugar to hundreds of his diabetic patients and tabulates the findings in a number of cases in which 35 gm. of sugar or more were taken daily. In 95 per cent. the glycosuria was improved; in 2.5 per cent. it remained stationary, and in 1.5 per cent. it increased. In 95

per cent. the improvement in the glycosuria was accompanied by great improvement in the general health and strength. This increased vigor after taking sugar harmonizes with the results observed in military circles. It is indispensable however, that the sugar must be taken apart from the albuminous meals, in water or coffee or the like, and that it should be followed by muscular exercise, accepting as an axiom, "No sugar without muscular exercise afterward, and no considerable muscular exercise without previous ingestion of sugar." He remarks, in conclusion, that ordinary sugar is better for diabetics than any kind of flour, as the starch of flour becomes transformed into diabetic sugar, while only half the molecule of saccharose produces dextrorotatory sugar.

65. **Electric Treatment of Furuncles and Carbuncles.**—Marcus suggests the empiric treatment of these lesions by allowing them to "ripen" possibly owes its efficacy to the local production or accumulation of antibodies. Unless there is some safe and certain means of destroying the cocci on the spot, this is the best way, he says, to treat a furuncle or a carbuncle. During the last year he has evolved a local treatment which, he says, has accomplished wonders in his hands. In the presuppuration stage he seeks for the most sensitive follicle and introduces a depilation needle connected with the negative pole of an electric current of 1 or 2 milliamperes. He then increases the current to 10 milliamperes, stirring the needle around to enlarge the hole. The nascent hydrogen pours out, bringing with it scraps of tissue and cocci. After from one to three minutes he removes the needle, cleans the parts, and reintroduces the needle as before, but connected with the positive pole of the current, increasing to 10 milliamperes as before. Ozone is then generated, which he calls the strongest disinfectant known, and the lesion is soon thoroughly disinfected. After two or three minutes the current is again reversed so that the hydrogen generated will again rinse out and wash away the débris. By this means the cocci are killed *in situ* and the further development of the furuncle is arrested. If pus has already formed it is mechanically removed as cautiously as possible to aid the above procedure, which is repeated twice a day. All pressure on the parts must be avoided, especially from the collar when the lesion is on the neck. It is remarkable how promptly and perfectly even large carbuncles heal under this electric treatment. Marcus has been applying this treatment for a year with increasing satisfaction.

66. **Vaccination Shields.**—Groth is convinced that many serious complications might be averted by using a simple covering for the pustule which can not get out of place like the ordinary shields. He uses a shield made of cotton, which fits over the arm and shoulder like a sleeve to the elbow, with a band from the top passing around the body under the other arm. He asserts that the state in enforcing compulsory vaccination should manage it so as to avert complications.

Therapie der Gegenwart, Berlin.

Last indexed page 361.

68 (XLVI. No. 3.) *Einwirkung von Salicyl-Präparaten auf die Nieren (action on kidneys). Quenstedt (Jena).
69 Die Technik der Stauungs-Hyperämie (aftificial passive congestion). R. Grunbaum.
70 Zur Behandlung der gonorrhoischen Erkrankungen. F. Kornfeld.
71 Results to date with Roentgen Treatment of Leukemia and Pseudo-Leukemia.—Kritisches Referat. De la Camp.
72 Allgemeine Grundsätze der Prophylaxe und Therapie der Magenkrankheiten (of stomach diseases). G. Klemperer.
73 Easy Reduction of Incarcerated Hernia and Ethyl Chlorid Spray and Vaselin.—Zur Repositionstechnik der eingeklemmten Hernien. H. Fischer.

68. **Action of Salicylates on Kidneys.**—Quenstedt's experience and research have shown that on administration of salicylic acid in the ordinary moderate doses signs of irritation appear after a short time and last as long as it is being taken. If salicylic treatment is suspended, these symptoms disappear after a time, but as soon as the drug is given again the signs of irritation reappear. The salicylic nephritis disappears quickly on suspension of the salicylic treatment, leaving no bad results, but when the salicylic acid is continued in small doses recovery is not complete. Loeb and Knecht arrive at somewhat different conclusions. They noted merely tokens of absolutely insignificant irritation from the salicylates. Knecht suggests that this difference may be due to differences in diet or to climatic causes. The appearance of signs of irritation after use of salicylic acid is observed, however, in various localities, so that it can be attributed only to the drug. It does not seem necessary to lose the benefits of salicylic medication on account of the slight nephritis noted after its use. Large doses should be given without hesitation if the severity of the case demands. All investigations show that salicylic acid leaves no permanent effects on the kidneys. In acute cases indicating the salicylates, they are indispensable, but in chronic cases they are of too little value to be continued very long.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

HUMAN PHYSIOLOGY. Prepared with Special Reference to Students of Medicine. By J. H. Raymond, A.M., M.D., Third Edition, Thoroughly Revised. 444 Illustrations, Some in Colors, and 4 Full-page Lithographic Plates. Cloth. Pp. 687. Price, $3.50 net. Philadelphia: W. B. Saunders & Co. 1905.

TREATMENT OF FRACTURES, with Notes on a Few Common Dislocations. By C. L. Scudder, M.D. Fifth Edition, Thoroughly Revised, with 739 Illustrations. Polished Buckram. Pp. 563. Price, $5.00 net. Philadelphia: W. B. Saunders & Co. 1905.

THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY OF LONDON, Centenary 1805-1905. Written at the request of the President and Council by N. Moore, M.D., F.R.C.P., and S. Paget, F.R.C.S. Cloth. Pp. 337. Aberdeen University Press, Limited 1905.

DISEASES OF THE KIDNEYS AND OF THE SPLEEN; HEMORRHAGIC DISEASE. By H. Senator and M. Litten, edited, with additions, by J. B. Herrick. Cloth. Pp. 915. Price, $5.00 net. Philadelphia: W. B. Saunders & Co. 1905.

TEXT-BOOK ON THE PRACTICE OF MEDICINE. For Students and Practitioners. By J. M. French, A.M., M.D., Second Revised Edition. 61 Illustrations. Cloth. Pp. 780. Price, $4.00 net. New York: William Wood & Co.

DIRECTORY OF INSTITUTIONS AND SOCIETIES DEALING WITH TUBERCULOSIS in the United States and Canada. By L. Brandt. Cloth. Pp. 270. Charity Organization Society of the City of New York. 1904.

DIETETICS FOR NURSES. By J. Friedenwald, M.D., and J. Ruhräh, M.D. Cloth. Pp. 363. Price, $1.50 net. Philadelphia: W. B. Saunders & Co. 1905.

New Patents.

Patents, recently granted, of interest to physicians:

792698	Fumigating candle, John F. Cunningham, Springfield, Mo.
792711	Artificial limb, Edward Koeber, Chicago.
793004	Eye-massage machine, Frank H. May, Birmingham, Ala.
792918	Tablet or pill-counting machine, Charles A. Ohlendorf and W. Brough, Baltimore.
792637	Electromedical appliance, Paul Wenigman, Chicago.
793351	Massage appliance, Herbert A. Church, Syracuse, N. Y.
793061	Mattress and accessories for invalids, Ada B. Dugan, Londonderry, Ireland.
793428	Ambulance cot or stretcher, George R. Edgley, Cincinnati.
793125	Physicians' adjustable chair, Victor A. Fagerstrom, Rockford, Ill.
793517	Sterilizer, John S. Forbes, Philadelphia.
793436	Earpiece or accoustic device, Peter C. Green, Philadelphia.
793582	Sterilizing cabinet, James A. Henning, Beardstown, Ill.
793527	Massage apparatus, Lorraine King, Knebworth, England.
793595	Folding display-box for suspensories, John E. Lee. Conshohocken, Pa.
793099	Syringe, Julius B. Sapp, Cleveland, Ohio.
793975	Plaster, Wm. H. Albach, Mount Gilead, Ohio.
794096	Syringe, Ella M. Gray, Des Moines, Iowa.
794033	Atomizer, Edward E. Menges, New Haven, Conn.
794387	Vaporizer, Edmund W. Ballentine, Chicago.
794160	Surgical appliance, Andrew Breslin and J. Lees, Summithill, Pa.
794161	Medical battery electrede, Kittie L. V. Curry, Chicago.
794233	Suppositorial bougie, Samuel L. Kistler, Los Angeles, Cal.
794641	Inhaler, Alfred H. Ramey, Aurora, Ill.
794256	Device for relief of club or flat feet, Wm. M. Scholl, Chicago.
794208	Electrothermal bath apparatus, Frank W. Weeks, San Antonio, Texas.
794771	Formaldehyde candle, Aleck Bauer and B. K. Hollister, Chicago.
794918	Pneumatic ophthalmic chart-cabinet, Louis O. Bisang, San Francisco.
794782	Stopper-holder for water bags, Albert C. Coe, Orange, Conn.
794788	Shield and support for *x*-ray tubes, Levitt E. Custer, Dayton, and D. H. Allen, Miamisburg, Ohio.
795212	Massage apparatus, George W. Fitz, Boston.
795213	Massage apparatus, George W. Fitz, Boston.
794707	Mercury pump, Stanwood E. Flichtner, Englewood, N. J.
794978	Invalids' bed, Ernest A. Hall, Vancouver, Canada.
795130	Truss, John J. Horn, Philadelphia.
795056	Injector for medical or like purposes, Selly Noah, Nuremburg, Germany.
794962	Massaging implement, Harry F. Waite, New York.
794996	Medicine receptacle, Robert B. Mimmack, Rochester, N. Y.

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Address

THE SUNSHINE AND SHADOW IN MEDICAL ENDEAVOR.*

JOSEPH D. BRYANT, M.D.
NEW YORK CITY.

Justice to myself, and a proper consideration for those whose faith or curiosity has prompted them to be present on this occasion, impels me to say at the outset, that I have been not a little troubled to select a topic that might suitably meet expectations and at the same time afford an excuse for my presence. I might, perhaps, with a faint trace of propriety, lighten each of these contingencies with the guileless claim that neither you nor I can be regarded entirely responsible for a crisis which has been fostered for a considerable time, and is now launched by those who are charged with the success of the occasion. However this may be, a reasonable fidelity to those who have so implicitly trusted us, should beget praiseworthy patience in you, and a degree of commendable brevity in me that befits your present comfort and the character of the topic under consideration.

The theme of the evening as already announced is somewhat euphonious, but quite suited, as it seemed to me, for an occasion of this kind; one healthful in all respects, dignified by character and learning, and adorned by beauty and grace.

In order that there may be no suspicion in the minds of any, that the topic of our choice is intentionally clothed in a garb of mysticism, I hasten at once to say that the expression, "The Sunshine and Shadow" has no hidden meaning, but is chiefly employed on this occasion to express in a metaphoric and more agreeable, but in no less emphatic way, the well recognized results of our profession, in the long struggle for the relief of human affliction. The glorious sunshine of medical achievements is reflected in the happy faces and glad manners of the patients and their friends, also in the gratified expression of the otherwise imperturbable demeanor of the experienced medical attendants.

Bereft, indeed, of healthy human sentiment are those whose hearts are not gladdened by the melodious expression, "the patient is better," "is out of danger," "is well again," thus indicating to all concerned that Nature's forces, aided by those of genuine medical endeavor, have rescued yet another sufferer, thereby restoring happiness and help to loved and needy ones.

To those who think of others than their friends, and sympathize with them in their distress and forebodings, those who have in their bosoms thoughts of the welfare of mankind, the sunshine in medical endeavor is seen in the results of the efforts of rescue of all men, of all climes, from physical distress, thus adding correspondingly to the comfort and prosperity of the whole people. No financier notes with greater care the fluctuations in monetary affairs, nor accounts for the variations more astutely, nor appreciates more keenly the import of the changes, than does the true physician note and estimate the varying results of genuine medical endeavor, in the different medical centers, and in the medical clearing houses of the civilized world. The features of the former brighten with the gratifying sensation of the knowledge that he is the possessor of greater wealth, and let us hope of greater determination to aid the unfortunate and to add to the world's enhancement. The features of the latter are brightened by the sunshine of the facts, that the beneficent endeavors of his profession have robbed pain of its terrors by means of the strengthening slumber of anesthesia; have stripped infection of its dread by the power of sanitation and asepsis, and have disarmed fatal contagion and distressing disfigurement by means of simple vaccination.

These achievements alone have added more lives and treasure and comfort to the world than all its conquests have destroyed since their time; they have added more to a nation's financial and human assets, than have all of its victories. The bounteous achievements of the physician are attained in comparative silence,. and with unobtrusive effort as becomes his calling, and are therefore much less manifest and understood by the people than are the achievements of statesmen and warriors, whose general aims and activities are only rarely out of sight and hearing, and whose final rewards emphasize in no uncertain manner the confidence and appreciation of the people. The sunshine of successful effort and of appreciative response gladdens the heart of the true physician no less than it does the heart of one who achieves beneficent triumphs in other fields of action.

Those who guard the security of individual existence in the cool moments of every day life exhibit quite as great and often greater steadfast bravery than do those whose fortitude is strengthened and whose efforts are stimulated by the fascinating din and intoxicating allurements of battle. But enough of this feature of the matter has been said, for were I to continue longer in this manner of expression you might be led to believe that I am partial in my views and utterances regarding the achievements and the burdens of those of my own profession.

As you will no doubt recall, my theme provides for shadows as well as sunshine in medical endeavor. The shadows in medical endeavor, like other shadows, bespeak the absence of enlivening sunshine, and suggest the want of the good cheer that accompanies the need of its presence, more especially in the counterfeit form of endeavor. Sunshine and shadow have antithetic attributes and attend on each other with a degree of fidelity that puts to shame the fealty of human co-operative action in tangible matters. Sentimental writers have noted this fact and utilized it in a delicious manner, as did Bovee when he sang, "False friends are like shadows, keeping close to us while we walk in the sunshine, but leaving us the instant we cross into the shade." Physicians have ample chance to mark the change from sunshine to shadow as modified by the acts and sayings of those dwarfed by the characteristics of complacency or envy. The gratifying sunshine of a conscientious physician's success is too often darkened by the distressing shadow of envy of those who find it easier to gaze into the large than into the small end of the glasses, and quite as natural, and then contend that small things and those beyond their conception or reach are too unimportant for serious thought, instead of keeping step with the comprehensive endeavor that leads the way in meritorious advance. Such persons as these clog the channels of success and are as brigands in the paths of enlightenment.

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* A popular address delivered at the meeting of the Indiana State Medical Society, 1905.

The sunshine and shadow in medical endeavor! Again the topic is repeated, so that we may better emphasize the fact that the endeavor which we are considering is no less surgical than medical. Medical endeavor includes that of surgical, since the resources of the latter are as much remedial measures of cure as are other means of relief. The proper practice of surgery is based on experience and knowledge and on hard knocks, no less than is the practice of medicine.

I wish, with the requisite degree of emphasis for the purpose, to register my unqualified objections and strenuous opposition to the idea, wherever it may be entertained, that the surgeon is the executive agent of the physician unless, unworthily, he himself so chooses to be. That the judgment and services of the surgeon are not necessary until the physician in charge suggests that they be secured, and perhaps because of a threatening complication that requires for its interpretation and remedy surgical experience and surgical therapy, is a folly that is, I am happy to say, rapidly disappearing, not only because of the recognized fatality that too often follows late consultations, but because of the mutual appreciation of the greater services to the patient and to the profession of prompt and early co-operative thought and action. It would be strange, indeed, at this particular time, and would be reasonably dependent on heedless thought or unpardonable vanity on my part, were I not to insist with equal emphasis on the need of co-operative action in surgical instances as well as in medical.

The shadows of popular distrust and disapproval, and those of professional displeasure and censure, sometimes appear so suddenly and become of such magnitude as to smother by their unforgiving and spiteful character all efforts of explanation in instances of fancied or real oversight, referable especially to the treatment of distinguished public personages. So frequent and inconsiderate are those manifestations in such instances that "the head that wears a crown" can not lie more uneasily than that of one of our profession who is charged with the physical welfare of a person of markedly distinguished rank. Especially is this true when, in moments of misguided confidence or of mistaken policy, matters whose importance can only be properly estimated by the family of the patient or by the medical attendants, are given public notice. Aspiring and proud souls whose ambitions prompt them to place their names highest on the rugged face of an unconquered precipice are not more foolhardy in many instances than are those of our profession who affix their names to a public bulletin bearing details that offer the opportunity for invidious chatter of envious and self-constituted critics. The soothsayer who bade Cæsar "Beware the ides of March," were he living to-day, might with equal pretension bid us beware the "ides" and ends of medical bulletins of prolific recital.

Fearing that you may suspect that I, for some reason, yet feel the smart of the public lash, I beg to inform you that I am not "a bruised reed" that has been broken, nor have I been subjected at all to the Shakespearan form of chastisement as verbally dispensed by Cleopatra; therefore no one has said, like her, "Thou shalt be whipped with wire, stew'd in brine, smarting in lingering pickle," but medical friends of mine and of yours have been thus figuratively whipped by the mischievous and overwise utterances of those to whom have been graciously given or wisely denied, facts that can be properly construed by only those at the bedside of the patient.

In a lesser degree than in the preceding examples many of us occasionally receive more than we deserve, because of expressions that thoughtlessly escape us entering at once the public ear, or entering a private ear with public predilections. Let us then cultivate the sunshine of endeavor in these respects with a due consideration for the shadows begotten in our paths by the unwise or thoughtless indulgence of others in matters beyond their willing understanding.

It is the medical endeavor of modern age that has just engrossed our attention, the sunshine and shadow of which in all of their characteristics have been the natural product of the spirit of the times, as, in essential respects, no doubt, have been the sunshine and shadow in the medical endeavor of the early history of the healing art.

The knowledge and ability of healing the afflicted is developed in accordance with the opportunity and desire to cultivate the calling; the opportunity and the desire result from the willingness to seek relief and the degree of the devotion exercised by those who aim to provide it; the willingness to seek relief is prompted by the confidence reposed by the afflicted in those whose capacity for good is measured by the honest outcome of intelligent assiduity, exercised in a proper and adequate field for the purpose.

The laity too frequently clothe those of our calling, more especially the surgeons, with romantic attire, and often seem more impressed with the agents of our craft and by our utterances than by our material presence. They watch for something startling and even measure our importance by the magnitude of the exhibit; and not all of us, I am disposed to remark, make perilous efforts to dispel the illusion. I now recall a physician whose appearance and manner were, to my then youthful and unsophisticated mind, the personification of Ajax defying the lightning. One day in the presence of many by-standers, this physician was asked by a patient: "How much shall I pay you for your advice, doctor?" The pseudo-Ajax, rising to the occasion and to his full height at the same time, in a loud, convincing tone replied: "An ordinary doctor would charge you two dollars. I am an extraordinary doctor and I won't charge you but two." The interest of the onlookers seemed to me to increase a hundred fold at once, and so far as I am concerned, I am not quite willing to deny that a microbe of some form of ambition did not infect me at that time. Certainly every one present on that occasion seemed to be delighted to have been a factor in so startling an announcement, and the poor patient himself parted with his hard earned money, emitting a radiant expression of wonder and satisfaction that seemed to say, "By Jupiter, an angel, or if not, an earthly paragon," and at the same time unconsciously illustrating by his appearance the sentiment of Emerson, uttered perhaps twenty-five years before: "There is a remedy for every wrong and a satisfaction for every soul!" In this instance, however, the charge made was twice the sum usually asked at that time and place for the services rendered, and which on this occasion were for the relief of an illusionary complaint. It has been many years since this incident happened but not so many since similar ones have occurred. The circumstance then illustrated and still illustrates the subtle and controlling influence exercised on the minds of those with imaginative ills, annoying to themselves and friends and perplexing to the medical attendant, of the assertive declarations made by noisy and irresponsible persons.

Patients in despair because of these afflictions, encouraged by their friends and sometimes offended by the apathy or well meant sarcasm of the medical attendant, often reluctantly seek the relief offered by exploited means of cure. Sad it is that in these cases the medical attendant too frequently expresses his satisfaction for having thus escaped the irrational besetments of the victims of imaginary disorders. Such patients as these deserve abundant sympathy and are difficult to convince against their morbid inclinations and are cured only with great effort by ordinary officinal methods. On this unfortunate class of people the human buzzards prey with persistent eagerness and gratified glee, aided by the alluring statements and false beacons hoisted into view by selfish agents for the purpose of securing the gross gains of the soulless thrift encouraged by this form of business enterprise.

In secular, sectarian and medical publications are found too frequently alluring announcements of remedial promise, and the recital of cures that can have no foundation in real fact and which, it seems to us, should be well known to those intelligent persons who assume to educate us in all things relating to the flesh and to the spirit. If these misleading statements and their deplorable outcome be not comprehended by so distinguished and earnest public servants as are these same agents of enlightenment, whose efforts in the search of knowledge and truth in the affairs of men and nations, lead them to overcome all obstacles opposing the purpose, then indeed should the duties of the editor on "serious things" be so increased as to include an essay on the fact that "nothing is more terrible than active ignorance." I beg to suggest, as an earnest of this graphic utterance of Goethe, that the essay be illuminated with the shadows of the unfortunate, and the results of misguided hope as pictured by the emaciated forms and mental wrecks strewn along the pathway of delusive medication. If there be any of these who are not ignorant of the disaster which their business instincts invite, to them the least I will say is: Dismiss your family physician at once and administer to your children and take yourselves the curative agents you exploit, and in accordance with the directions on the package.

The worst that might be said to this class of persons is not fitted for utterance at this time and place, and in this presence.

I will, in this connection, give an illustration of the sentiment "Where more is meant than meets the ear." Perhaps, however, it is better to say, than meets the eye—as might have been said had the expression been written near to this period of frenzied enterprise.

Not very long ago a loyal friend of mine whose loyalty to me could only be measured by her loyalty to a certain sectarian journal from which she had gained in spiritual consolation and comfort for many years, chanced to call my attention to the "high character," as she expressed it, of the abundantly illustrated "business columns." I naturally wishing to take note of so important a fact, at once scanned the announcements relating to its business purposes and to other undertakings. It required no special scrutiny to determine the presence of several exploitations of things that fasten the attention of those of inquiring minds and confiding natures; those who, while waiting for something to turn up of substantial character, invest their unbounded faith and limpid assets in problematical ventures; those whose failing health from incurable or imaginary afflictions have often experienced "the sickening pangs of hope deferred," and ventured their all, with no other gain than this. However, I will mention only one, "A Cure for Consumption," at so much "per" bottle. I inquired of my friend why it is that in a publication of this character, devoted to spiritual matters and bearing a title that means Christian effort and Christian outcome that such an announcement as this appears on its pages. She frankly replied, "Because I assume that their presence here inspires greater confidence and is followed by larger returns than when announced by the secular press." I earnestly inquired, "Do you believe consumption can be cured by medicine alone, and do you not believe that such medication as is here announced is quite likely to be delusive and even destructive because of its artful composition and misleading effect?" She, being the wife of a physician, and therefore more interested and better informed in such matters than many others, promptly replied, "Yes, I do, and I will call on the editor and see about it, for surely he either believes the statement to be true, or is not aware of its presence in the publication." Later I saw the lady again and inquired if she had seen the editor and what he had said. "Yes," she replied, "I saw him and he said: 'I am not responsible for the advertisements, as the business affairs of the paper are no part of my duty.'" "Well," I inquired, with a somewhat confidential, continuously curved interrogative inflection, "what are you going to do now?" "I have written him already," she replied, "that unless that deceptive consumption cure is expunged, I will stop my subscription for the paper." I wish to say, in justice to the management of the publication, that after a little time the objectionable announcement ceased to appear, but for what reason I never knew.

While writing these lines it occurred to me to examine the pages of a number of sectarian publications periodically devoted to the enlightenment and the spiritual guidance of the people. Twelve different examples were selected without reference to any consideration other than the main object in view—the ascertaining of the presence or absence in the paper of the alluring recitals to the unfortunate afflicted already mentioned. The pages of the great majority of these publications were above reproach. The pages of a small minority of them were a sad commentary on sincere religious pretension and honest business enterprise. On a page of one appeared a sensible article illustrative of the fact that "Where there is prayer there is peace." On another page of the same publication was conspicuously announced, "The curing of cancer without the use of the knife," followed by "If you are seeking a cure come here and you will get it." In another instance was noted a three-quarter page announcement in which a list of not less than forty diseased conditions appeared, along with the assurance that in any stage of any of those diseases "The results are so certain" that gladly an absolute guarantee will be sent to any inquiring patient. The exact meaning of this phraseology is somwhat dim and is open to diverse conjecture; but that the intent is obvious and the outcome is remunerative is told by the liberal area of the space devoted to the purposes of the announcement. Among the diseases in the list were croup and Bright's disease, piles and cancer, constipation and tuberculosis, dandruff and women's diseases, along with the alluring bait, "A fifty-cent bottle free."

We all are more or less familiar with, and gladly welcome the happy inspiration that conceived the idea of tasteless, of agreeable, and of sugar-coated medication, but are we familiar with and do we approve of medication that has for its vital inspiration the misguided faith begotten by sanctimonious business enterprise?

One other instance of this nature and I am through with examples of these special shadows. In a local paper of a town and not in the list of the regular advertisements, but in a conspicuous place in the reading matter and therefore of a conspicuous price, is announced "A new cure for cancer," fortified with a certificate from a far distant state of a man who had a cancer of the lip that "seemed incurable," and "is now perfectly well." This medical agent is also guaranteed to cure cuts and burns—price twenty-five cents. I do not contend that this compound if applied to cancer will cause local harm, but surely it will not effect a cure and probably as surely will contribute to final disaster by delay of proper means of treatment, and possibly will rob the patient of established methods of benefit while chasing the delusive phantoms of hope, incited by the agents of thoughtless or of mercenary gain. The columns of many of the lay journals of the country are disgustingly disfigured with a humiliating class of notices, notices that filch from the helpless and unsophisticated their hard earned and much needed money, giving in return but renewed disappointment and often final disaster.

This form of filching is supplemented, in some instances, by one of far lower degree, whose slimy bids for trade exact a tax on the most unfortunate of the unfortunate class that abides with us. Neither the sunshine of medical endeavor nor even that of Christian endeavor has as yet uprooted, nor more than lessened the presence in conspicuous places of the beguiling hand-bills of these audacious vipers. Surely the failure of the efforts in accomplishing so righteous a purpose casts a fixed and almost impenetrable shadow, demonstrative of the frailty of beneficent human endeavor in the correction of such insatiable evils. The remedy for these conditions lies in the development of such a degree of moral determination on the part of all as will secure the enactment of corrective legislation and the development of an abiding courage sufficient to cause enforcement of the legal commands. I am disposed to believe that the wise and emphatic utterances of President Cleveland regarding such matters on the occasion of the semi-centennial celebration of the New York Academy of Medicine in January, 1897, can well be quoted at this time as an earnest of the opinions of all thoughtful, considerate and patriotic citizens. He said:

> You have established a code of ethics which condemns charlatanism in all of its forms, and yet ignorant pretenders roam over the land offering to perform miracles, or are located in our towns and cities preying on the weakness of the sick and afflicted, while men and women are allowed to die without medical attendance, deluded with the hope that faith will save them in their last extremity. Within the limits of your professional power and influence you seek to restrain any approach to criminal malpractice, yet newspapers disgustingly, though covertly, advertise the way to such crimes and startle their readers with sensational tales of death and misery to which they are directly accessory. I need not suggest that such evils are allowed to exist by reason of the insufficiency of our laws or the laxity in their execution. I have intimated that for this condition you are not responsible in a professional sense; but are you sure that as citizens you are doing all in your power to remedy the situation?

The potency of these remarks is the product of the careful thought and acute observation of a distinguished citizen whose fearless loyalty to the public interests has frequently been demonstrated in no uncertain manner.

I am fittingly reminded at this time by the sacred lessons of the greatest of all teachers, that "He that is without sin let him first cast a stone." Also, "And why beholdest thou the mote that is in thy brother's eye, but perceivest not the beam that is in thine own eye? How canst thou say to thy brother, Brother, let me pull out the mote that is in thine eye, when thou thyself beholdest not the beam that is in thine own eye?" No one is more aware than am I of the number and the magnitude of the motes and the beams in the eyes of those who profit by the unethical policy of medical journalism. No one is more aware than am I that until quite recently, the casting of a stone in any direction of the compass exposed to justifiable hazard the metaphoric eye of an offending medical journal, and possibly of a noted practitioner. The failure to recognize the essential differences between thrifty commercialism and ethical proprieties has been a blighting reproach on the ethical pretensions of our profession, subjecting us to biting jests and humiliating scorn painful to bear and difficult to gainsay. But I am gratified to be able to announce that an apparent era of consistency in this respect is at hand, and is rapidly increasing in all directions, embracing alike the personnel and the press of our profession. Let us, therefore, congratulate ourselves for ourselves because the rising sunshine of professional consistency is now dispelling the gloomy shadows of professional inconsistency that have too long darkened the path of consistent medical thought and action.

The construction of even a very brief retrospective review of the birth and past attainments of our profession requires abundant leisure, infinite patience and unrestricted access to almost numberless records representative of all nations, and of all ages, in order correctly to understand the earliest periods of medicine and surgery and the sequence of their logical development. We can do no more on this occasion than to touch lightly here and there at long distances apart along the pathway of advance, thereby fitting us the better to appreciate the full significance of modern medical triumphs as demonstrated through the effulgent sunshine in medical endeavor. The beginning of medical thought and action is so obscure and so intimately associated with the strange conceits and fantastic beliefs of early recorded time as to make impossible the fixing of a period of commencement in established medical endeavor. Medical thought and action at that time were a part of the imaginative features of early human existence, when superstition and false philosophy dominated the actions and beliefs of men. In ancient times, the physician of a locality was its magician and conversely, as sometimes happens now in pagan and aboriginal countries. The art of healing was then regarded as most mysterious and its agents were believed to be in communion with spirits. Amulets were worn to chase away the ague, extracts from the Iliad to lessen the suffering of gout, and a verse from Lamentations for cure of rheumatism.

But do not, my friends, pity too soon these ignorant people, nor indicate by signs a doubt regarding their mental equilibrium, for neither you nor I know how many here this evening pin their faiths of cure or prevention of rheumatism to a well-worn horse chestnut deposited in the left-hand trousers pocket; nor how many experience relief from insoles made of mullen leaves; nor how many are benefited by brass rings worn on a special finger or toe, which ring extracts the virus of disease, as is asserted to be proved by the presence on the ring, from time to time, of the products of oxidation, and, pardon me if I suggest, of careless personal sanitation. Lessing truly said, "The superstition in which we were brought up never loses its power over us, even after we understand it."

An ordinary scrutiny of the advertising columns of the secular press to-day will furnish exhibitions of the perverse ingenuity of man, affording him ample subsistence because of the presence now of receptive beliefs like those of the earliest times.

The prescriptions of early times are a caution to modern pharmacy. Galen and Avicenna secured greater professional repute as successful physicians than is possible in our period, and, were their famous prescriptions to be given now, it seems quite certain that more patients would succumb than receive benefit from their use. Yet in their time these prescriptions were employed with seemingly marvelous success. Do these facts suggest an absence of stability of medication, or only the presence of its fallacies?

In the second edition of a small book published in 1692, denominated the "Choice of Remedies," is found this prescription for "Convulsive Fits" and "Hysterical Vapors:" "Take the liver of a hare (if it have been hunted it may be better) and hang it up in a dry place till it is somewhat friable, having a care that it is not putrific; of this reduced to powder let the patient take two or three scruples at a time, in any convenient vehicle." Also we find another for cure for cancer of the breast: "Take the warts that grow on the hinder legs of a horse, dry them gently till you can reduce them to powder, of which you may give half a dram for a dose in any convenient vehicle." This latter agent had the merit of doing no local harm, even though it could be of no special good.

In this connection, I am reminded of the fact that in my early youth a fond and solicitous domestic gave me freely of grated dried pumpkin stem and molasses for the cure of colic. Whether or not the sweetened sunshine of the molasses or the insipid shadow of the pumpkin stem or the implicit faith entertained in the curative virtue of the remedy or, perhaps, only old-fashioned homely coincidence afforded the relief in this instance of medical endeavor, I am not prepared to say.

On closer examination of this little book on "Choice of Remedies," one is forced to the conviction that, indeed, much sunshine should have followed medical endeavor when attended by the dark shadows of such sickening therapy, the proper vehicle for which I am disposed to say should be the ash cart of a modern city. It should not be overlooked, however, that they did then, as we do now, the very best they knew.

The recorded growth of surgery began 3,000 years ago, and the tangible evidences of surgical endeavor antedate this period an unknown length of time. Fossil examples of prehistoric trephining done some time during the polished stone age may be cited as examples of this fact. About 1,550 years before the birth of Christ was made the following record regarding a tumor: "If this tumor goes and comes under your finger, trembling even when your hand is still, say it is a fatty tumor and treat it with the knife, after which treat it as an open wound. A work on anatomy (a true foundation of safe surgical endeavor) was in existence about 5,240 years before the birth of Christ. The Old Testament contains expressions relating to medicine and surgery. And we find, at that time, an expression that has come down to us with a pungent flavor not greatly attenuated, though highly seasoned with the smart sarcasm of the day. King Asa, "In his disease sought not to the Lord, but to the physicians." And, "Asa slept with his Fathers!" In Exodus is found this statement: "And if men strive together and one smite another with a stone. . . . then shall he that smote him . . . pay for the loss of his time and shall cause him to be thoroughly healed." or, when practically rendered, shall pay the surgeon his fees.

About 1,000 years before Christ, Homer in his songs described the wounds of the conflicts of that period and the method of their treatment, which in some respects may be regarded as rational for the present time. In the fifth and sixth centuries before Christ, numerous temples erected to Æsculapius, the father of medicine, were extant, to which the afflicted resorted for relief, suggestive of the dispensaries of to-day. At these places, certain medical families, having presumptively special medical endowments, dwelt and treated the complaints of the callers, not in accordance with any established dogmas, but in accordance with their own individual conceptions of the means best suited for medical and surgical relief. It is likely that each individual family had its own records of remedies, of methods and of results, which were transmitted from father to son, just as one now finds in a good old-fashioned family "grandmother's recipe for cake" or for colic. And, also, perhaps, not unlike the self-constituted doctor of our day, who prescribed corn beef and cabbage for a blacksmith suffering with cramps, with instant relief, and so recorded the fact. Later, however, a minister thus afflicted called him in and was given the same treatment, but promptly died. Whereof this unprejudiced recorder of facts made the following entry in his record of endeavors: "Corn beef and cabbage is good for a blacksmith with cramps, but ain't worth a d—n for cramps in a minister."

Hippocrates, the father of medicine, born 460 years before Christ, was the offspring of a direct family of medical practitioners. Prior to his time medicine and surgery were but little advanced, and a distinct line of demarcation had not been drawn between them. Dr. Hippocrates, like some doctors of divinity, had great faith in the efficiency of fire as a remedy. The maxim of Hippocrates that "the diseases which are not cured by medicine are cured by iron; those not cured by iron are cured by fire, and those not cured by fire are incurable," was the cause of great suffering and of bad surgery—and theology—up to nearly the present century. Hippocrates and his students were prolific writers on surgical topics. They wrote on injuries of the head, on fractures and dislocations and sympathetic fevers, and many of their statements are to-day a part of the structure of modern established surgery. Thus it appears that the wise men of that period were able to establish enduring truths in medicine and surgery of significant modern importance, and, too, without the aid of the special means of analysis that characterize the bountiful period in which we live.

It may not be amiss to observe in this connection that the powers of human reasoning in diagnostic attainments are developed in direct proportion to the paucity of other means than this of reaching final conclusions in the field of differential endeavor. Conversely, inductive diagnostic attainment, if not carefully fostered, will be disabled by the vigorous assaults made on reasoning effort by use of the novel expedients employed in diagnostic aims; not necessarily because of the abundance of expedients, nor of their presence, but because it is human to accomplish a perplexing desire with as little effort as possible. The scant danger that now attends "explorative incision" is apt to encourage a degree of mental contentment, inhibiting the reasoning powers, so as to be followed, after brief and unconvincing effort, by the expression, "Oh! well, an explorative incision will settle it."

Let us now turn to a more pleasing picture, illustrative of the sunshine and shadow in medical endeavor as demonstrated by the direct results of professional effort in the alleviation and cure of preventable human affliction, during many years of toil of those of our calling. It is well to be reminded here that of one million human beings born a hundred years ago only about three hundred are now living, and they are living but feebly, cheered by the recollections of the past.

In this connection, you should be told that, during the last hundred years, the expectation of life has been remarkably advanced. The ubiquitous "King of Shadows" has been moved many more paces to the rear of the "shining marks" that he so much loves to demolish. The expectation of life in New York City in 1886, says Dr. Biggs, was only a little more than twenty-five years, while in 1903 (17 years after) for the same period the expectancy had nearly doubled, equaling quite forty-one years, and constituting an equivalent in the saving of life in that city of 28,000 lives annually. In the seventeenth and eighteenth centuries, according to Dr. Biggs, the average death rate of the civilized world was about 50 per 1.000. In London, from 1628 to 1635 (in the absence of pestilence), the average death rate was 50 per 1,000, and the absolute mortality there for twenty-four years (1620-1643) was over 70 per 1,000.

So much for shadow in medical endeavor. Now mark the sunshine. In London, in 1902, the death rate was but a fraction over 17 per 1,000. In London, from 1771 to 1780, 5 per 1,000 died of smallpox; in 1880, 2 in 1,000; in 1837, 1 in 12,500; in recent years the death rate per 1,000 from smallpox in London is expressed by an insignificant decimal.

In 1888, in the Department of Health of New York City, the initiative in the present war against tuberculosis in this country was begun. Then and for some time following, the idea was regarded by distinguished members of the medical profession of the city as being meddlesome, puerile and demoralizing and doomed to prompt and inglorious defeat. At that time the medical commissioner of the Department of Health of that city addressed to each of twenty-five of the leading physicians of the city a letter inquiring if, in their opinion, the time had not come when tuberculosis should be regarded as a communicable disease and measures be taken to combat it, based on the reporting to the Department of Health by the medical profession of the cases of this disease coming under their care. From the great majority of the twenty-five thus addressed no reply whatever has yet been received. From the small minority halting replies of the "Yes, I guess not" type came to hand and to ear. But two only of the twenty-five responded promptly and in the affirmative. Physicians of lesser rank than those already mentioned amused themselves and others of high attainment and doubting method by means of cheap writings and sayings that prompted mirthful comments on the part of those with no faith and little desire to aid in the undertaking. Since that time (1888), however, the cause has made rapid progress, and physicians who then deprecated the attempt are now convinced of its wisdom and are using the weight of their eloquence and standing to secure sufficient monetary support from the city and from citizens to provide for the care and relief of the minority host of this class of sufferers. The rewards of effort thus far gained can be no better related than by Dr. H. M. Biggs. who has been among the foremost in aggressive action and suggestion of those who have engaged in the conflict against tuberculosis. Says Dr. Biggs:

> The average death rate in the Boroughs of Manhattan and the Bronx from all tuberculous diseases for the five-year period preceding 1888 was 4.35 per 1.000 of the population and for the five-year period preceding Jan. 1, 1905. was 2.83, the decrease exceeding 35 per cent.; or, going a little farther back, in 1881, the rate was 4.92, and twenty years later, in 1902, it was 2.63, or a decrease comprising only these two years of 45 per cent. Translated into lives, the difference in the rates for the five-year periods, computed on the present population of Greater New York, means a decrease in the annual deaths from tuberculous diseases of over 5,500 in the greater city.

Nor is this but a little, my friends, of what has been accomplished in life saving during the average age of those within this inclosure. Surgeons who labored in the hospital wards before the days of antisepsis and asepsis will recall the abundant harvest of lives and limbs gathered in by the almost omnipresent and ever-strenuous and unrecognized agents of infection. It requires no effort of mine to recall that, while as interne in Bellevue Hospital, the presence there of pyemia, septicemia, erysipelas and puerperal fever often halted the surgeon's best efforts of relief and forbade him to employ the most approved means of operative cure under the risk of increasing the death rate of the hospital. I believe that you will indulge me if I cast on this picture of unavoidable woe the resplendent sunshine of a little of the present outcome in preventive medical endeavor.

During the last twenty-five years it has been my honor and duty to be a visiting surgeon at Bellevue Hospital, a hospital devoted to the care of the unfortunate poor of the city, those whose habits and associations, in a large proportion of cases, do not fit them for the endurance incident to disease and injury. Yet, during this time, in Bellevue, plus eighteen additional years in St. Vincent's Hospital, largely devoted to the same class of patients, I have not met with as many cases of infective diseases of preantiseptic type as came under my notice in a month's time as a hospital interne before that period. And in this connection I desire to say that each of these hospitals was as successful in treatment as were any before that dark period, and since that time are unexcelled by none devoted to the same class of cases. I can say, without fear of gainsay, that hopeless cases of injury and disease for which no practical relief could be afforded before antisepsis and asepsis are now, as the result of the practical application of these remarkable agencies, rescued in large percentages (10 to 90) by the means of established operative endeavor—and so it is everywhere. Please remember in this connection, however, that the astonishing differences in these results is the consequence of increased knowledge and not of greater assiduity nor of more thoughtful care.

Enough has been said to emphasize decidedly the glorious results in medical endeavor—of preventive medical endeavor—of the last century and a half. The brilliant sunshine of the outcome in this endeavor mingling with its unshed tears would fashion a resplendent bow of promise gloriously betokening God's choicest gifts to man.

Vaccination, anesthesia, antisepsis and asepsis, antitoxin, the *x*-ray, the discovery of the tubercle bacilli and of the kinship between the mosquito and the yellow fever plague of commerce, and of malarial torments, are among the most potent and far-reaching beams of sunshine in medical endeavor, and which are constantly increasing in their brilliancy and beneficent power, adding comforts and life to the inhabitants of the world, and lessening correspondingly the tears and sorrows of the earth that cast a sunless shadow on all of life's endeavors.

Original Articles

THE CORRECTION OF EXOPHORIA BY DEVELOPMENT OF THE INTERNI.*

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There are sins of omission as well as sins of commission in every profession. Oculists are guilty of the former when they treat asthenopic symptoms as though all were accommodative and none muscular. This paper does not aim at bringing out anything new in the way of diagnosis, or treatment, but simply recommends the necessity of determining the muscle balance in all refraction cases, and emphasizes a known and tried method of relieving the vast majority of cases in which exophoria exists. This subject has been impressed on me by seeing numerous cases that have passed through the hands of competent oculists, wearing glasses practically correct, with asthenopic symptoms unabated because of an unsought for and unrelieved exophoria.

I wish also to sound a note of warning against the indiscriminate performance of the various tenotomies, with or without advancements, wherever imbalance is found. While not opposed to operative measures when indicated, I believe they should only be performed when the lack of balance can not be cured or relieved by other measures, and then only by men who are so situated as to be in constant practice. I firmly believe that more eyes are injured than benefited when the muscles are cut by any but oculists of large experience, living in the larger cities and having sufficient clinical facilities for keeping well up in this class of operative work.

Orthophoria is an ideal condition of perfect balance, or equilibrium, of the external ocular muscles, in which the tendency of the visual axes is toward parallelism.

It is rather infrequent, however, that we find orthophoria, generally a slight esophoria being associated with our hypermetropic patients, and in our myopic, a slight exophoria. Most authorities are agreed that from one to two degrees of esophoria will enable the eyes to be used for near with greater comfort, owing to the slight excess of convergence, than will a condition of orthophoria. Slight degrees of exophoria in strong, robust patients may not produce symptoms of eye strain.

Exophoria, when seen in connection with its concomitant myopia, gives the least symptoms, since fewer demands are made on the adductors in this disease than in hypermetropia.

It is not the intention of this paper to go into the causes of exophoria or to take up the subject of muscle balance in an exhaustive manner, but to recognize the fact that in many of our patients a troublesome exophoria exists, and to report some cases to show that the condition can be entirely overcome, or relieved, by muscle exercise. No originality of method is claimed. We merely desire by showing results to encourage others to adopt this simple method of affording relief to a disturbing symptom.

A routine examination of the muscle balance should be made in every case refracted. It is not absolutely necessary to measure the degree of adduction or abduction, or of supraduction or infraduction. With the Maddox rod and the small point of light at six meters the balance for distance can be quickly determined, with sufficient accuracy for all practical purposes. In those cases where the Maddox rod test shows no exophoria for distance, and the glasses prescribed do not relieve all the asthenopic symptoms, it is well to make use of von Graefe's equilibrium test for the working distance, for frequently deficient convergence for 30 cm. will be found. If no attention is paid to the exophoria, either as regards the strength of the spherical portion of the lens ordered to correct the ametropia, or to the development of the weak interni, we shall fail to give the vast majority of our exophoria patients the relief they should have at our hands.

It is very essential that all refractive errors should be carefully measured, generally under a mydriatic, in patients under 45, for many cases of exophoria are undoubtedly produced, or at any rate, greatly aggravated, by an improper correction. In errors of refraction associated with hypermetropia the amount of the plus sphere must be very considerably reduced, or omitted, when exophoria is present, as such incentive to convergence as slight amounts of uncorrected hypermetropia give, are of aid in overcoming the exophoria. If myopia be present in connection with exophoria, a full correction of the myopia should be prescribed.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

The general health should be considered and brought as near to normal as possible. The use of the eyes for close work should be restricted and out-of-door exercise advised. Dr. de Schweinitz recommends increasing doses of nux vomica, beginning with fifteen drops three times daily and running up to as high a dose as the patient will stand.

The method I use for developing the adductors consists of exercises at home, reinforced by regular visits to the office for supervision and additional exercise.

EXERCISES AT THE OFFICE.

Generally the proper ametropic correction is placed before the patient's eyes in a carefully centered trial frame and the attention directed to the point of light (or candle) six meters distant. Weak prisms, bases out, are put in the trial frame and the strength rapidly increased until the patient has difficulty in keeping the point of light (or candle) single. He is then told to close his eyes, slightly stronger prisms are inserted and on opening the eyes he looks at an ivory ruler held twelve to fourteen inches from his eyes, my body shutting off the point of light which is across the room. Telling him to look intently at the ruler I slowly back off towards the light and when I reach it I step aside and his gaze is quickly transferred to the point of light which is now usually single. If it is double I use weaker prisms until he can readily fuse the image and then gradually increase the strength. When the light is single after transferring his gaze from the ruler, I have the patient look steadfastly at it for a few seconds, then close his eyes for two or three seconds and if on opening them he can compel the lights to fuse, stronger prisms are placed in the trial frame. The rapidity with which the strength of the prisms can be increased, and the total to be overcome, must be determined for each case. Usually I add one or two degrees each time I walk across the room, until twenty-five or thirty degrees are overcome readily. It is not often necessary to overcome more than thirty or thirty-five degrees, but occasionally I run up to fifty. In all this work it is essential to stop short of actual fatigue of the external muscles, or no true development will occur. After the exercise the patient should sit a few moments with the eyes closed until they have somewhat recovered from the excessive convergence.

EXERCISES AT HOME.

The patient is given a pair of eight or ten degree prisms, mounted bases out, in a properly fitting straight temple spectacle frame, to be worn with or without the distance correction, as may be deemed best in each case. He is then carefully instructed in the use of the prisms as follows: To use the longest room or hall available, six meters or more being desirable. Then with the prisms properly adjusted before the eyes, to keep them closed until a lighted candle is brought in front of the eyes and twelve or fourteen inches distant. If the patient has some one to assist him with the work, the candle is then slowly carried across the room. If alone the patient slowly backs away from it, keeping the eyes and mind strictly on the light. After getting across the room the eyes are closed until the candle is carried back to the starting point, or if exercising alone the prisms are removed and not replaced until ready to start on another pilgrimage. This procedure should be repeated until the light can be at once fused at six meters distance. In the beginning these home exercises should be gone through with morning and evening, the time occupied being about ten minutes. As the muscles strengthen, once daily will suffice. It may be necessary to increase the strength of the home prisms several times, depending on the results obtained. The exercises must be persisted in until the Maddox rod will show from one-half to two degrees of esophoria for distance, and the von Graefe test shows orthophoria for near. It is well to tell the patient at the outset that it will probably be necessary to keep up a moderate degree of exercise for an indefinite period after the methodical exercises are discontinued. If the athlete stops all training after his muscles are thoroughly developed, they will gradually lose their tone. So with the developed adductors; if all prism or converging exercises are stopped, some exophoria may again show itself, therefore it will be well to use the prisms for a minute or two daily, or the thumb exercise will do.

The following cases are reported to show what good results may be obtained by the methods just outlined:

Case 1.—E. G., male, aged 32, architect. This patient was referred to me through Dr. Geo. M. Gould of Philadelphia, and came under my care Dec. 18, 1903. For two years he had been unable to work at his profession owing to inability to use his eyes for close work. For a while he was a nervous wreck—which condition he ascribes entirely to his eyes—and was under Dr. S. Weir Mitchell's care. Dr. Mitchell sent him to an oculist, who prescribed O. D. + sph. 1.25, O. S. + sph. 1.00, which gave him no relief whatever. For some months he had been living a strictly out-of-door life, sleeping in a tent, hoping that his eyes would tone up and that the insomnia from which he suffered would disappear. He was greatly discouraged, and as he told me afterward, he would have gone back east forthwith had it not been for the fact that he could not look at the time table long enough to see what train he should take. He disliked to ask anyone for fear he should have to explain about his eyes. His examination showed O. D. V. 6/5 ??, O. S. V. 6/5 ??, 3° exophoria at 6 meters, 2° exophoria at 30 c.m.; adduction 10, abduction 9.

After careful mydriatic refraction I ordered, O. D. + sph. 0.50 ⊃ + cyl. 0.37 ax. 45 = 6/4, O. S. + sph. 0.50 ⊃ + cyl. 0.50 ax. 20 = 6/4.

He was given prism exercises at the office, supplemented by work at home with a pair of 8 degree prisms which were later increased to 12 degrees. By February he had ¾ degree exophoria for distance, and orthophoria for near. In March he had a slight esophoria for distance. He returned to active work in his profession in April, keeping up moderate exercise with his prisms. In May he had from 3 to 6 esophoria. When last seen in March of this year he reported his eyes perfectly comfortable. Adduction was 28 and abduction 9.

Case 2.—R. H., school girl, aged 16, complained of frontal headache, which came on only after use of eyes. O. D. V. 6/6 ??, O. S. V. 6/6 ??, 3° exophoria at 6 meters, 8° exophoria at 30 c.m.

Under a mydriatic no astigmatism could be found, either at trial case or by the retinoscope, only a slight hypermetropia, and this was not prescribed for. She was given the exercises at home, and at the office, and in just one month she had orthophoria. From that time on she was entirely free from headache.

Case 3.—Mrs. G. B. H. had been repeatedly refracted by one of the best oculists in Los Angeles, without any relief from her asthenopic symptoms. The glasses she was wearing were practically a full correction of her compound hypermetropic astigmatism. She showed 3 degrees of exophoria. I cut down materially the spherical portion of her lens, made a slight change in the cylinders and commenced muscle gymnastics. Her relief was prompt. On her return to her home in the east, three months after I examined her, her eyes were more comfortable than they had been for years. Until she came to me her muscle balance had never been tested.

Case 4.—Miss E. F. A., aged 37, passed through the hands of the same oculist as Case 3 and with like results. She was unable to use her eyes with any comfort. Her lenses were practically correct, but she had 4½ degrees of exophoria, which had been entirely overlooked. Rest of her eyes from all close work for a time and moderate gymnastics worked wonders. In a little more than a month all her exophoria disappeared. In a short time more she had a slight esophoria and now she can use her eyes in moderation without any ill effects.

Case 5.—T. G., school girl, aged 18. Asthenopic symptoms were unrelieved by the lenses she had been wearing for over a year, which were practically her full mydriatic correction. She showed 2 to 3 degrees of exophoria for both distance and near. I reduced the spherical portion of lenses each — 0.50 and prescribed prism exercises, with complete relief.

Case 6.—Mrs. A. S. L., aged 50, wife of a physician, was wearing from one of the best oculists in the country, for reading, each eye, + sph. 1.50 ⌒ 3° prism base in. Her eyes were such that she could not read at all without diplopia. She showed 8 degrees exophoria for distance and 12 degrees for near. I was very doubtful in my prognosis of this case and rather advised a tenotomy, as her abduction was 12 degrees and adduction almost nothing. I made her rest her eyes, however, and gave here the exercises with astonishing results. She soon had an adduction of 33 degrees. With suitable correction, omitting the prisms, she is now able to use her eyes with comfort.

Case 7.—Miss J. L., aged 23, came to me March 27, 1905, wearing a pair of 1 degree prisms, bases in, complaining of inability to use her eyes at all. Her vision was normal, adduction 14, abduction 9, 2½ degrees exophoria. I took off her prisms, started her on the exercises, and in two weeks her eyes were feeling much better. I did not see her again till June 27. She then had orthophoria for distance and near, adduction 30, abduction 9. She reported that she could use her eyes, all she wished, without discomfort.

Case 8.—N. S. M., student, aged 18, consulted Dr. William Campbell Posey, Philadelphia, last fall, for sudden loss of vision in his left eye. Dr. Posey found a large lymph extravasation apparently from the superior temporal vein. Vision 2/60.

The young man had been indulging in sea bathing with great frequency. For some time he had had a thick discharge from his nostrils, evidence of some sinus involvement, and had been in the habit of sniffing the sea water through his nostrils. Dr. Posey made a diagnosis of thrombosis of the temporal vein, following a sphenoiditis, contracted by swimming. Dr. Posey put the young man on large doses of salicylate of soda. Active diaphoresis by hot air baths and pilocarpin was ordered every other day. In two months vision was normal. He then came to California and on May 10 consulted me. He had been studying hard for his Princeton examinations and his eyes felt strained and weak. He was greatly worried for fear he had injured his left eye by overuse. He was wearing weak sphero-cylinders, adduction 14, abduction 6, 1½ degrees exophoria. The ophthalmoscope showed evidences of an old chorioretinitis above the disc and in the foveal region, but not involving the macula. I made slight changes in the axes of his cylinders and ordered prism exercises. Improvement was immediate. After a short rest he was able to resume his studies with a tutor. By the middle of June he took his examinations without any evidences of eye strain. On June 26 he had 1½ degree esophoria, adduction 30, abduction 6.

I could give the histories of many more cases, but I think it unnecessary. The ones reported are fair examples of cases I meet every day. You will notice that of these eight cases two were emmetropic, and three were wearing lenses that practically corrected their refractive error but did not take into account the muscular defect.

I think the results obtained in these cases justify me in my enthusiasm for prism exercises and should reflect great credit on the originators.

DISCUSSION.

Dr. G. C. Savage, Nashville, pictured two ciliary muscles on the blackboard, and two internal recti; also two brain centers, one controlling the ciliary muscles and the other the interni (functionally). He said that there are two centers at the base of the brain, each of which is connected with two muscles, the ciliary and the interni. The centers of convergence and accommodation, he said, are so intimately related that one can not act without the other. The center of convergence, he assumed, is the third, and the center of accommodation the tenth, and asked what establishes the intimate relationship between the two. For every nerve impulse sent by the tenth center there is a corresponding nerve impulse sent to the two interni for convergence. Now, if there be orthophoria for distance and the tonicity of the ciliary and interni is normal, there can be no exophoria for near, for every time the ciliary muscle undergoes contraction the interni will also undergo the necessary contraction to converge to the object. Orthophoria for distance and esophoria for near is the normal condition. There is proper relationship as to tonicity between the ciliary muscles and the interni. Nature, he said, has placed in every brain centers for the correction of muscle errors. These centers are not the volitional centers; they are not in the cortex of the brain, but there is an individual center for every muscle connected with every eye for the correction of every condition that would cause diplopia. These centers, he believes, are in the base of the brain. There is the third basal center on one side and the third on the other. Volution has no influence over these basal centers, but influences the cortical centers only. In the proper test for heterophoria the basal centers are thrown off their guard and do nothing. He said that the Maddox rod does not offer a correct test for heterophoria, and said that the remedy is to increase the tonicity of the interni and that no operation is necessary. The muscles are to be exercised. Accommodation is strong, but convergence is weak; therefore, prism exercises are needed. That does not disturb the third center, but excites to activity the basal centers and they throw into a state of contraction the interni, and if such exercise is allowed to alternate with rest the patient will be cured.

Dr. F. B. Eaton, San Francisco, preferred to look at the subject from a clinical point of view. Eleven years ago, he read before this section a paper on the physiology of the ocular muscles, especially those of convergence, and he said that he has learned something in the eleven years that have followed. While Dr. Savage's demonstration from a theoretical point of view is impressive and experience will bear him out, yet he thinks the great error is not giving attention to the directions given last year by Dr. Ramsay, to build up the vitality of these patients. Dr. Eaton can overcome any amount of prisms and can converge one eye without the other, but he has exophoria for nearly 14 degrees. While this may be due to some disturbance of the vertical ocular muscles, his experience is that as the physician builds the patient up in a common sense way, he cures these muscle conditions. Otherwise it does not make any difference how much exercise is given them. Dr. Eaton thinks the condition is a neurotic one.

Dr. Dudley S. Reynolds, Louisville, stated that he has seen many cases of heterophoria subjected to tenotomies, after Dr. Stevens' suggestion, and to a great variety of exercises with prisms, without satisfactory results. He believes that with a full correction of whatever error of refraction may exist, with systematic feeding and such medication as has been suggested by de Schweinitz, full doses of tincture of nux vomica, and perhaps change of scene, without any reference to the eyes at all, beyond the correction of the refractive error, a complete cure may be attained, and not in any other way.

Dr. William C. Posey, Philadelphia, declared that he fully believes that with the proper use of regular rhythmical exercises the condition of exophoria for near may be turned into esophoria for far, but for only so long as the prisms are used. When the use of the prisms is stopped the trouble returns. If the symptoms are to be held in subjection the exercises must be continued. One other point is that when the interni are exercised with prisms bases out, if the exercises be kept up a long time, Dr. Savage's hypothetical third center is also exercised, and it will be necessary to change the spherical lenses as the muscle power is brought up. Dr. Posey believes these are of value in bringing up the adduction. He has not been able to accomplish good results with bases up or down, or with the use of the cylinders, after Dr. Savage.

Dr. S. D. Risley, Philadelphia, said that he published a paper some years ago on abnormalities of ocular muscle balance, in which he outlined what seemed to him a just classification of these cases. The group of cases which depends on insufficiency of the interni, which does not exist until a number of convex glasses have been placed before the eyes, he denominated as relative insufficiency; that is to say, a patient who all his life has found it necessary to accommodate without converging might in this case converge without accommodating. When convex glasses are placed on a hypermetropic patient the condition which experience has taught him to exercise is disturbed and he is left with a relative insufficiency of the interni. These patients get well under the exercises set forth in Dr. Roberts' paper, but, there is another entirely different group which does not belong to these mentioned by Dr. Roberts nor to those spoken of by Dr. Savage; they are the patients who depend on faulty attachment of the muscles to the ball itself, deformity of the orbit. Given a deformed orbit, with different planes from the normal skull and the points of attachment may be distributed in many ways. The interni may be attached too far back, or the externi too far forward. The physician can exercise those patients until doomsday and while they may be made more comfortable for a time, as soon as the exercise is omitted their discomfort immediately returns. The muscle can never be strengthened. Dr. Risley doubts very much if any amount of exercise ever strengthens the ocular muscles, but it may teach some facility in using them.

Dr. John E. Weeks, New York, agreed with Dr. Roberts in his belief that there is a class of patients who can be benefited by these exercises, but said that there is a class that can never be benefited by prism exercises. It seems to him that there is a simple method of testing muscles to determine whether there is an absence of strength in one or the other, and that is by means of the perimeter, or better still, the tropometer of Stevens'. The power that the muscles have on the eye may be tested and one can judge very accurately whether a given case requires treatment with prisms, or operative interference. Dr. Weeks has not infrequently had patients come to him with a static exophoria of from 2 to 10 degrees and on measuring the muscles by means of the tropometer he found the actual rotation of the globe to be normal in every direction; with a rotation in, say 50 degrees; outward 45, approximately; and these patients have been benefited by treatment. When the rotation inward was perhaps 45 degrees and the rotation outward 50, such patients have not been benefited and operative procedure is necessary in the majority of patients to relieve them. He fully believes that there are anatomic defects in the muscles that require operative procedures for their correction. Each class of cases should receive its particular form of treatment and physicians have at their disposal the means of determining what that treatment shall be.

Dr. C. H. Williams, Boston, said that as the muscle is exercised and gets a little more facility or strength, the physician should keep on decreasing the correcting prism, keeping it always less than the amount of error, so that the muscle is always doing something to try to bring the eye to a proper position. In the use of the Maddox rod he finds that there is always a tendency to bring the line and the light together, a tendency to fuse images. That, however, can be avoided very well by the use of a little apparatus which he showed before the section in St. Paul, consisting of a series of green figures with a red line running through them. Put in front of the eyes a pair of spectacles with one glass red and the other green, so that with one eye the patient sees the line and with the other the figures. With deficiencies in the vertical meridian especially, can a demonstration of a deficiency of one or two degrees be obtained, which could not be obtained with a Maddox rod, and these deficiencies in the vertical meridian he finds give the patients more discomfort than those right and left.

Dr. William Zentmayer, Philadelphia, said that a great many of these patients may be relieved without the use of prisms by putting on a very partial correction which relieves the disturbance created by correction of the hypermetropia. If the astigmatism has been corrected there is often relief of the asthenopic symptoms caused by the exophoria. He believes in prism exercises for exophoria.

Dr. Leartus Connor, Detroit, asked why most of the cases of muscle imbalance exist without producing any trouble and that only exceptionally is there trouble from this cause. That question he has not been able to answer satisfactorily, though the trouble may be called neurasthenic. In a practical way, he has found the use of the galvanic current of value in many instances. Another agent that he has found to be of use is very deep massage as near the medulla as possible, and of the vibratory variety. He does not know of anything that affords so much relief as this shaking up of the base of the brain. The occasional effects of such treatment are marvelous. Each case is a study of itself from the beginning to the end.

Dr. J. S. Kirkendall, Ithaca, N. Y., said that aside from medication directed to constitutional troubles, there are various reflex causes which should always be looked for. He recalled one patient who had been under the care of several prominent oculists and by the removal of a plug of wax from the ear he was able to relieve the symptoms. Another cause, the relief of which he has seen followed by good results, is an abnormal nasal condition, spurs, etc., in the nose. Many of these patients might be relieved by correcting these various reflex factors.

SUBCONJUNCTIVAL SALT INJECTIONS.*

S. D. RISLEY, M.D.
PHILADELPHIA.

Personal experience with subconjunctival injections of solutions of different crystalloid substances in the treatment of various forms of ocular disease, a study of the literature of the subject, and differing views entertained by some of my colleagues regarding the efficiency of the method, have led me to think that a discussion of the subject by this section would prove interesting and valuable. The literature is too recent and too well known to need extended references; I shall, therefore, confine these remarks to my personal experience regarding the groups of disease in which the method has proved useful, its mode of application and a brief consideration of the theoretical basis for its adoption. In my early experience, injections of solutions of the mercurial salts were first experimented with, but soon abandoned because of the severe pain they occasioned and the more or less violent reaction which was liable to follow their employment. Solutions of chlorid of sodium in varying strength were then substituted and experience soon excluded strong solutions of this salt. For several years, only the so-called physiologic salt solution has been employed at about the temperature of the body. In the cases here reported, this was the solution invariably used and extended experience has shown that it can be injected with practical impunity. In many hundreds of injections, I have not seen an instance of inflammatory reaction, or any thickening of the conjunctiva or subconjunctival tissues, or any adhesion of the tissues to the sclera, even when the injections had been made daily or on alternate days continuously for many consecutive weeks. While the results have often been disappointing, there has been no cause for regret because of harm having been done.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

The following reported cases are taken at random to illustrate, not only favorable results, but groups of diseased conditions in which the method has proved a valuable addition to our armamentarium.

ABSCESS OF THE CORNEA.

CASE 1.—G. G., aged 50, an Irish laborer, came to the Wills Eye Hospital with an abscess of the cornea situated near the lower limbus. There was a large hypopion with much infiltration of the cornea and the anterior wall of the abscess was breaking down into an open ulcer.

Treatment.—A Saemisch operation was performed, the man placed in bed and the usual well-known methods of treatment instituted. While they probably prevented the eye from passing rapidly into a state of panophthalmitis hypopion recurred and no progress was made toward recovery. Enucleation seemed inevitable, but before adopting this radical measure he was taken to the operating room, cocain solution instilled and an abundant injection of physiologic salt solution made under the conjunctiva at a point contiguous to the now large, open ulcer. It was immediately followed by a profuse sanguineous discharge from the needle puncture. In an hour the severe pain he had suffered subsided and in twenty-four hours the pus in the anterior chamber had disappeared. The injection was repeated on alternate days until four in all had been given, and hot saline stupes applied continuously.

Result.—The man made a rapid recovery and was discharged from the hospital with a circumscribed leucoma at the site of the original abscess.

INTERSTITIAL KERATITIS.

CASE 2.—A Norwegian housemaid, aged 22, with pale blue irides, nearly white, flaxen hair, thick pendant lips, a flabby indented tongue and opaque, pale, muddy skin, clubbed fingerends, and a tall, lax, angular frame, came to the Wills Hospital for impaired vision in the right eye.

Examination.—There was some ciliary injection, there was no increase of tension, the iris reacted normally, the corneal reflex was not impaired, but there was a ring of gray opacity, apparently in Bowman's membrane, surrounding the corneal pole inclosing a nearly transparent center about 2 mm. in diameter. She was obviously in ill health, but there were no physical signs of cardiac or pulmonary disease. Menstruation was scanty and irregular. The central incisors were not notched.

Course of the Disease.—She received atropia locally, an improved general regimen was directed, and her service as housemaid was abandoned. Iodid of iron and arsenic were administered internally. The eye grew rapidly worse and photophobia increased, the opacity meanwhile spreading until the entire cornea was gray, rough and vascular, while the vision sunk until she was unable to count fingers. The left eye becoming also involved, she was admitted to the hospital, where, notwithstanding treatment, she was soon unable to go about without aid. The general health improved, but the eyes grew steadily worse, the opacity more dense and the left cornea also became vascular and the ciliary injection more marked.

Treatment and Result.—Daily salt injections were then begun as a last resort and other local measures omitted, except the hot saline stupes for an hour after injection. The improvement was at once manifested by diminishing discomfort and photophobia. In three weeks she could see her way about, and in six weeks she left the hospital, returning as an out-patient for the injection, which, however, were soon abandoned. In three months, the remaining corneal neubulæ could be discovered only on close inspection, and a year later vision was 6/60 in each eye with her correcting glasses.

Remarks.—In this patient all the usual means of treatment having failed, salt injections were followed at once by speedy relief, and ultimate cure of conditions which certainly threatened serious, permanent impairment of vision.

VASCULAR KERATITIS, WITH IRITIS.

CASE 3.—Housemaid, aged 20.

History.—The patient had been under treatment at different clinics by able colleagues for more than two years. She was led to the Wills Hospital service by a friend and was admitted to the house.

Examination.—The palpebral conjunctiva showed no evidence of trachoma. The corneæ were gray and vascular throughout, there was marked pain, photophobia and lachrymation. Examination of the nasal passages and sinuses excluded them as an exciting cause.

Treatment and Result.—The salt injections followed by hot salines stupes were at once begun, and resulted in such rapid improvement that she was soon able to leave the hospital, returning alone as an out-patient on alternate days. The vascularity disappeared, leaving numerous gray spots and dots in the deeper layers of the cornea and a few posterior synechia in each eye. The deep ciliary injection and evident iridochoroidal disease slowly subsided under the iodids, and occasional subconjunctival injections for which she would voluntarily return because of the relief they afforded in the exacerbations of discomfort following exposure or use of the eyes.

CASE 4.—High myopia, atrophic choroiditis, macular hemorrhage, commencing separation of retina.

Patient.—Mr. F., aged 29, traveling salesman, consulted me in February, 1905.

Examination.—He presented the following conditions: Right eye had been blind for several years from extensive detachment of the retina; left wearing — 6.50 D. V. = 6.60; fronto-occipital headaches with undue sensibility to light. The ophthalmometer revealed a considerable degree of uncorrected astigmatism, but no glass other than — 6.50 materially improved his vision. The entire fundus was fluffy, except the area occupied by an atrophic crescent at the temporal margin of the nerve. The vitreous was filled with a freely moving fine granular débris, seen with + 6 D. used as a magnifying glass. There was no impairment of the field of vision other than the narrowing due to the impaired light sense so common in choroidoretinal disease. The serious nature of his condition was explained and he was urgently advised to abandon his work and place himself under treatment.

Subsequent History.—He returned two months later in great alarm over a sudden loss of vision which had come on during sleep, two days before. His vision sunk to 1/60, with eccentric fixation, and the upper nasal field was wanting. The ophthalmoscope showed the vitreous filled with floating webs and shreds, an extensive gray opacity in the lower temporal ophthalmoscopic field, but little raised above the general level of the eye ground, but which extended upward, including the optic disc and macular region. At the macula, there was a horizontal band of hemorrhage, apparently lying between the choroid and the retina. The effusion or infiltration of the tissue was so great that the fundus could be studied without the aid of a concave glass, whereas, before the accident, — 6.50 at least was required at the fovea, and — 10. at the temporal margin of the nerve. His former glass — 6.50 D. did not improve, but rather impaired his vision.

Treatment.—He was placed in bed in a private room at the Polyclinic Hospital, bright light was excluded; blood was taken from the temporal and mastoid region. Iodid and bromid of lithium were administered internally, atropia was instilled and daily sweats secured by a twenty-five candlepower electric lamp hung under a tent formed by the blankets. His diet was regulated to meet the depleting influence of the treatment. His headaches rapidly subsided and the blind area in his field of vision diminished. At the end of two weeks he became hysterical and homesick. He was therefore taken from the hospital and domiciled at the house of a friend, but little improvement in the ophthalmoscopic appearances having resulted from the treatment, though the vision had risen to 6/60 with — 1 D. He then came to the office on alternate days in a cab, and received a copious physiologic salt injection remaining at the office in a recumbent posture for two hours. He then returned to his room and applied warm salt-water stupes, one hour in three, frequently opening the eyelids to freely bathe the conjunctival surface in the salt solution.

Result.—In a week, V = 6/30, eccentric fixation with — 1.50 D. and the cut in the field had disappeard. This improvement was followed by a partial relapse, but under the continued treatment the field was once more rapidly restored and he was permitted to return to his home on June 26, with V = 6/30 + with — 4 D. The central blind spot persisted, but its area was much diminished.

The gray infiltration of the fundus or subretinal effusion had disappeared, and a number of small atrophies in the region of the fovea were now present at the site of the hemorrhage. It remains to be seen whether, under prolonged rest and care this improvement can be maintained.

Case 5.—Traumatic abscess of cornea with unguis and hypopion.

Patient.—A machinist, aged 30, came to the clinic of my colleague, Dr. Radcliff, at the Wills Hospital on April 10, three days after the removal, by a fellow-workman, of a chip of steel lodged in the cornea.

History.—I am indebted to his assistant surgeon, Dr. George Robinson, for the following condensed report: There was corneal abscess 2 mm. in diameter in the lower and outer quadrant of the cornea. The cornea was infiltrated with pus gravitating from the abscess quite to its lower limbus and the anterior chamber was occupied by a large hypopion.

Treatment.—Atropia was applied and the abscess was cauterized with carbolic acid. Blood was taken from the temple and continuous ice compresses were applied. The eye grew worse in spite of this treatment until April 14, when he received a normal salt solution injection.

Result.—At his next visit to the hospital, April 17, he was free from pain, the hypopion and unguis had disappeared, the conjunctival injection had diminished and the ulcer was clean and progressed to rapid recovery.

These cases are briefly reported to illustrate different groups of disease in which the injections have been used with rapid and signal benefit. The list could be indefinitely extended by the report of cases in which the course of disease was favorably influenced, but it is not my design to present statistics. Other groups might have been included, e. g., the use of injections in cases of uveitis with transient increase of tension and sand-like infiltration of the vitreous, or cases in which they were administered to hasten the absorption of swollen masses of cortex in the anterior chamber after discission of soft cataract; or cases of mild iritis with capsulitis coming on late in old people after cataract extraction, but to include them would have extended the paper beyond the time limit.

MODE OF OPERATION.

The purely theoretical consideration underlying the injection of solutions of crystalloid substances into a living animal membrane introduces us at once not only to a study of the anatomic relations of the lymph channels and apices of the eyeball, and to the nature of the tissue juices which occupy them under varying conditions of health and disease, but also to a consideration of the laws of osmosis and of dialysis.

The well-known law of osmosis of fluids, viz: that solutions of crystalloid substances of differing density or specific gravity, separated by an animal membrane, tend to diffuse through the membrane until they assume a uniform density, has suggested, for example, that in case of retinal detachment the injection into the contiguous lymph spaces of solutions of some crystalline salt of greater density than the fluid underlying the retina, through the law of osmosis, would tend to withdraw the retinal fluid to itself and so to exhaust the subretinal space. Clinical experiments based on these theoretical considerations, while in some instance of seeming benefit in hastening the disappearance of the subretinal effusion, have not, on the whole, given brilliant results in the treatment of separation of the retina. The suggestion, however, resulted in a series of more or less elaborate, laboratory investigations of the diffusion of fluids of various colloidal and crystalloidal composition until an extensive literature has been created.

From the point of view of the clinician, the results of these laboratory studies has been to offer but little encouragement to the advocates of subconjunctival injections. Indeed, if the clinician placed his trust wholly on the teaching of the laboratory experiments he would be inclined to abandon the method and to conclude that the apparent results which had at first excited his enthusiasm must have rested on faulty observation.

In witnessing the results which certainly followed the injection of solutions of crystalloid substances into or under the conjunctiva, it was natural to conclude that the resulting improvement in pathologic states was due to the injections; and in seeking for an explanation it was equally natural to turn to the well-known laws of osmosis or dialysis, the observer supposing, again quite naturally, that the diffusion of fluids through living animal membranes would be subject to the same laws which control the diffusion through organic membranes after their removal from the body. It was taught, therefore, in the case of chlorid of sodium, for example, that it acted as a lymphagogue; when the mercurial salts were employed that they acted not only as lymphagogues, but, in cases of infectious diseases of the eyeball, as disinfectants.

A careful study of the literature of experimental research, however, seems to show that those hasty conclusions are untenable; that any efficiency these injections may possess is not due to osmosis, or to their dialytic action, either of which would produce an acceleration of movement in the tissue juices and lymph currents; nor now to the antiseptic influence of the injected fluid, but is produced by a change in the composition of the aqueous humor, which, as a consequence of the irritation caused by the injections, becomes richer in albuminoids through the resulting congestion of the blood vessels and the increased transudation of albuminoid substances. The efficiency of these injections, therefore, is said to be due to the well known protective influence of the serum albumin poured out into the aqueous humor. In support of this view, we may recall the well-known fact that the composition of the aqueous humor is changed by paracentesis of the cornea, a procedure which not infrequently changes favorably the course of various pathologic states of the eye, e. g., in uveitis with transient attacks of increased tension of the globe.

When viewed from the standpoint of the clinician, it is difficult to accept the result of these experimental studies as representing the sole action of the subconjunctival injections. While it may be and probably is true that the irritation produced by the injections causes, through congestion, an increased transudation of albuminoid substances which are one of Nature's bulwarks against infection, it is not probable that these substances penetrate the tissues of the cornea in time to produce the results often speedily manifested after these salt injections. For example, the patient will often voluntarily bear witness to a clearing of the vision within a few moments after the injection, and in these cases I have frequently observed an unmistakable diminution in the corneal haze, so that the iris and pupillary area could be more clearly studied than before the injection had been given; an observation which is to be explained only on the supposition that the lymph channels of the cornea had been partly emptied of their abnormal contents into the lymph spaces surrounding the limbus. The corneal haze or impaired transparency is doubtless frequently due to an accumulation or congestion of migratory leucocytes which the lymph spaces and channels of the cornea, in response to the unusual inflammatory stimulus afforded by the existing pathologic process, and also, to the actual production of new cells from the division of the fixed corneal corpuscles. These products of inflammation clog or overload the exit into the conjunctival and subconjunctival lymph spaces with which they communicate and into which they empty under normal conditions, probably largely also through the perineural sheaths which, according to Piersol, are to be considered as lymph channels.

The fluids occupying the lymph spaces are, in health, probably derived from two sources; from the marginal vascular loops and by diffusion from the anterior chamber; the former being devoted to the nourishment of the anterior epithelium and the superficial layers of the substantia propria, while the latter supply the deeper portions of the cornea; not, however, by diffusion through the endothelial lining, but by a circuitous route through the spaces of Fontana at the angle of the anterior chamber, thence into the lymph channels of the sclera which communicate directly with those of the cornea (Piersol, Stadevini). It would seem, therefore, that while the diffusion of nutritive fluids into the corneal spaces occurs in the manner described, their principal exit is by the lymphatics of the conjunctiva, and in smaller part by the perineural lymph tracts at the corneal limbus. It is obvious that if these principal paths of exit are obstructed, either by pressure due to the surrounding inflammatory exudates, or are clogged by the excessive demand made on them in carrying away the congregated leucocytes and tissue juices invited to the cornea by irritation, that the fluids must accumulate both in the corneal spaces and in the anterior chamber.

Now it is probable that the injection of neutral, saline solutions of low specific gravity, rapidly dilate the channels of exit and, at the same time, dilute their contents, and so by a rapid diffusion of fluids hasten the flow of the diluted lymph and albuminoid substances through their normal channels. It is probable, also, that the emptied spaces are at once refilled by a fresh supply from the original sources which will be richer in albuminoid substances and withal would carry a fresh nutritive supply to the tissues. Some recent observations suggested by a renewed study of the microscopic anatomy of the ocular tissues, seem to show that the same result may be secured by other methods. The prolonged application of saline stupes, or of solutions of crystalloid substances of low specific gravity to the eye at the temperature of the body are useful if permitted to come directly into contact with the conjunctival sac.

For many years, I have treated stubborn cases of uveal disease by soaking the eyeball in an eye cup filled with warm Dobell's solution, made up with a reduced portion of carbolic acid. Until recently, it did not occur to me that its beneficial results were due to the osmotic diffusion securing a dilution of the contents of the lymph channels, but recent experiments with other crystalloid substances in solution of low specific gravity have led me to think that this is at least a plausible explanation. Furthermore, it awakens the inquiry as to whether this is not the *modus operandi* of many of the collyriæ which experience has proved useful in the treatment of ocular affections, e. g., solutions of alum, borax, zinc salts, etc.

DISCUSSION.

Dr. William Zentmayer, Philadelphia, said that while the salt solution may not produce any permanently disastrous results, it does sometimes produce disagreeable results. He saw a case of this kind in a young man who had been under treatment for some months for interstitial keratitis. The subconjunctival injections had been used and produced a marked bulbar conjunctivitis through blocking of the lymphatics. Some time later in a case in which he had been using the injections for detachment, the method had to be given up because of the severe reaction that followed. There was a great deal of congestion and after some weeks there appeared over the cornea of each eye a large crescentic patch of exudate, the surface of which was smooth in most places, but at various points there was ulceration that stained with fluorescin. The condition when he saw it last, was one of subsiding inflammation, but there was still considerable pigmentation of a yellowish color.

Dr. L. H. Taylor, Wilkesbarre, Pa., said that some time ago he saw Dr. Risley make these injections and went back home and used them on a patient under his care who had been treated for three months for opacities of the cornea. Dr. Taylor used the injections and the patient recovered so well that he was able to go to work and was temporarily lost sight of. He intends to follow up this plan of treatment later.

Dr. John E. Weeks, New York, agreed with Dr. Risley that the beneficial change or effect on the eye which is produced by the subconjunctival injections of solutions of crystalloid substances is not due to osmosis, but to influence on the circulation of the blood and lymph. Osmosis takes place when the difference between the densities of the fluids is relatively great. In edema of the glottis if a gargle of strong salt solution is used every fifteen or twenty minutes the edema is reduced in a short time. In all probability that is an example of osmosis, but such strong solutions can not be used subconjunctivally without doing damage to the tissues. The clearing up of the cornea is in all probability due to the change in the flow of fluid through the lymph spaces. The haziness is not always due to the presence of leucocytes and the clearing could hardly be attributed to the escape of leucocytes within the short interval mentioned, but it can be attributed to the removal of material from the lymph channels themselves. The reaction of the cornea in its different parts may be changed, that is, so far as alkalinity or acidity is concerned. It may be changed by sluggishness in the movement of the fluids. This is well illustrated in cases of scaling of the cornea by blood pigment. The hemoglobin enters the channels and when it approaches the center of the cornea an acid reaction may change it into hematoidin, which, in acid reaction, is a crystalloid and the blood pigment is crystallized in the tissues of the cornea. This will clear up to some extent and more rapidly if hot boric acid or chlorid of sodium solution is used. This suggests to Dr. Weeks' mind the probable explanation of the clearing up of the cornea under the influence of subconjunctival injections of saline solutions. The stimulation of the exudation from the blood vessels may also, and very probably does, take place as Dr. Risley has suggested.

Dr. A. E. Bulson, Jr., Fort Wayne, thinks that the reaction produced by the injections of normal salt solution very frequently depend on the depth of the injection. When made superficially, that is just immediately under the conjunctiva, it is just as efficient as when injected deeply. The reaction may also be dependent on the frequency of the injections. In quite an experience with the method he has found that some patients are particularly susceptible to the injections, some will have a marked reaction from small quantities, and still others will take large injections for weeks with no marked reaction. The effect on hypopyon and conditions of that kind, he thinks, depends largely on the character of the infection. He has found that the injections have little effect on the streptococcic infections or on more severe infections. The frequency of the injections and the length of time over which they are carried out, it seems to him, must also be taken into consideration if physicians are not to be disappointed in the results. A few injections will frequently not produce any decided result, whereas if carried out daily for four or five weeks they will.

Dr. S. L. Ledbetter, Birmingham, Ala., said that ten years ago he began the use of injections of mercury in this way and thought he got some good results, but the pain produced was so considerable and patients complained so much that he finally gave it up and began the use of the saline solutions instead. The results were so favorable that he prepared a paper on the subject of saline injections versus mercury injections and read it before the county society. He was much impressed with the benefits derived from it, but like other therapeutic measures that come and go, and on account of the difficulty to get patients to come with regularity and the inconvenience of carrying out the treatment, he lapsed into indifference and finally abandoned it for other methods. In the last year or so he has used almost exclusively the hot applications with the eye cup, using it two or three times a day and as hot as the patient can bear it. He found that he got practically the same results from the use of the hot normal salt solution in that way as by the injections. He believes that there are conditions in which possibly the injections will give results that can not be obtained from the hot eye baths.

Dr. Leartus Connor, Detroit, declared that the question is primarily one of fact and that Dr. Risley's observations, so far as they are positive, present facts. The reasons for the results may be many. Certainly there is a nervous element in the matter that has to be taken into consideration. The pressure on the eyeball, underneath the conjunctiva, must produce irritation of the terminal filaments of the nerve. The operation, therefore, is not only one of the relation of fluids, but is also one pertaining to the action of the nerves, by reflex irritation on the size of the blood vessels and rapidity of the currents flowing through them, making altogether a complex series of factors. For a great many years, Dr. Connor has obtained good results from the use of very hot water continuously applied; he has written one or two papers bearing on that. An additional help can be had by the judicious use of massage. He said that on returning home, after hearing Dr. Risley, he will try the use of these injections with more faith. The trouble in many cases is the objection of the patient to having a needle inserted in the eye. The other methods they do not object to.

Dr. Kaspar Pischel, San Francisco, said that some European writers state that they have used the subconjunctival injections of strong saline solution without causing particular pain, but if physicians make the same injections here they are disappointed. Patients here will not stand it like the patients abroad. The patients over there will submit to these procedures without grumbling.

Professor J. Hirschberg, Berlin, said that Europe is by no means a unity and that he could speak only of the part he knows. He sees also a great many American patients and he can not find so decided a difference between American and European patients. He uses the saline solution in exactly the same way as Dr. Risley and after employing it in thousands of cases he has not had a single patient complain.

Dr. S. D. Risley stated that he has not had any difficulty in having his patients, either private or public, submit to these injections. He purposely selected groups of cases which have been stubborn and disappointing, and while abroad last summer some of his friends in England permitted him to see their work.

He had just left his own clinic, where a number of patients were getting well under the salt injections, and he suggested to Mr. Snell this method for cases of vascular keratitis, and he said he had had to abandon it because of the reaction and the great pain it caused. Dr. Risley said: "Well, Englishmen must be more susceptible to pain than Americans," and asked him his method of using the injection. The crux of the matter, Dr. Risley said, is the method. He has been doing it for ten years before venturing to say anything about it here and he has never yet seen any untoward result. The eyes will not bear mercurial salts injected under the conjunctiva. A patient who had been under Fuch's care in Vienna, for detachment, was sent here; he had been getting salt injections and had been getting very strong solutions which the eye would bear but once a week and which were placed deep in the orbit. Dr. Risley tried this, but not a second time. He found that Mr. Snell was giving injections in this way and the eyes will not bear it. Whether harm is to be done or whether the method is to be efficient or not depends on the manner of employing it. Dr. Risley has abandoned all but the physiologic salt solution because he abandoned the idea that it was by osmotic action that the benefit resulted. He believes it acts simply by dilation of the lymph spaces and dilution of the contents of the spaces and by hastening the current. The haziness of the cornea may be due to increased contents of the lymph spaces and the clearing up may be due to the change in the contents. He does not believe that it is due to a lymphagogue action or to emptying the spaces of leucocytes. In the thousands of times he has used the injections in the last ten years he has never seen harm result, but chronic conjunctivitis may result from the habit that many people have of daily washing their eyes in salt solution. He has again and again had patients of this kind. When cocain has been employed for a long while, and then salt solution used, it may set up a conjunctivitis, or when very strong solutions are used it may occur. He saw one case in which there was profuse hemorrhage after an injection, but on continued use there was no trouble. If a sterile solution at the temperature of the body is used and the bleb is not made too large—two or three minims are quite sufficient—simply lift up the conjunctiva, place the sharp needle point under it and raise a small bleb—no harm can result. It is often surprising to see how rapidly the bleb disappears.

INCISING AND SUTURING THE LIVER.

A NEW METHOD TO RE-ESTABLISH A CONTINUITY AND FOR THE CONTROL OF HEMORRHAGE.*

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The object of all surgical operations, especially in abdominal work, should be to secure primary union. There is no reason why this principle is not as applicable to the surgery of the liver, providing a proper technic can be employed, so that when the cut liver surfaces are coaptated, the continuity of the organ will be re-established, and complete control of hemorrhage secured.

That liver surgery has failed to keep pace with the surgery of other abdominal organs can easily be ascertained on perusing the literature of the subject. The first and principal reason was the fear of hemorrhage, which, according to Kocher, is almost as true to-day as in the time of Theden, 1795. The lack of knowledge of the healing and regenerative power of the organ offers a second explanation. A third, the danger of infection, resulting in peritonitis, and, fourth, cholemia due to the escape of bile into the peritoneal cavity.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

Injuries of the liver, accidental or intentional, even when slight, were regarded until recently as very serious. Thus the old idea that trauma of any sort involving the parenchyma of the liver offers a very grave prognosis, was still adhered to up to the beginning of the last decade.

Theden, as early as 1795, quoted by Mayer,[1] considered hemorrhage the primary danger even in superficial liver wounds, this danger increasing with the injury of large bile ducts. As the ducts and blood vessels are larger on the under surface of the viscus, wounds in this region were considered more serious than on the convex surface. "If not for the above two dangers," he says, "wounds of the liver would not be as fatal." The means employed in combating hemorrhage and cholemia in Theden's time were rest, antiphlogistics, vesication, and venesection. Of the direct methods for controlling hemorrhage, compression by tamponade was the most primitive. Mayer[1] has also shown that all surgeons up to the beginning of the nineteenth century regarded injuries of the liver as hopeless. Larrey,[2] 1812, wrote that laceration of the liver with the escape of bile into the abdominal cavity, would always prove disastrous. In 1864, Pirogoff[3] asserted that wounds of the liver were more frequent than the stomach and spleen, and in his experience were always complicated and resulted in death. Holm,[4] 1867, followed by Joseph,[5] Koester,[6] and Hüttenbrenner,[7] demonstrated the healing power of liver wounds. Von Bruns,[8] 1870, during the Franco-Prussian war, was the first to resect liver tissue after an injury, with good results. Luis,[9] 1886, employing a combination of different methods, was the first to remove a solid tumor, which proved to be a benign adenoma. The patient died from hemorrhage.

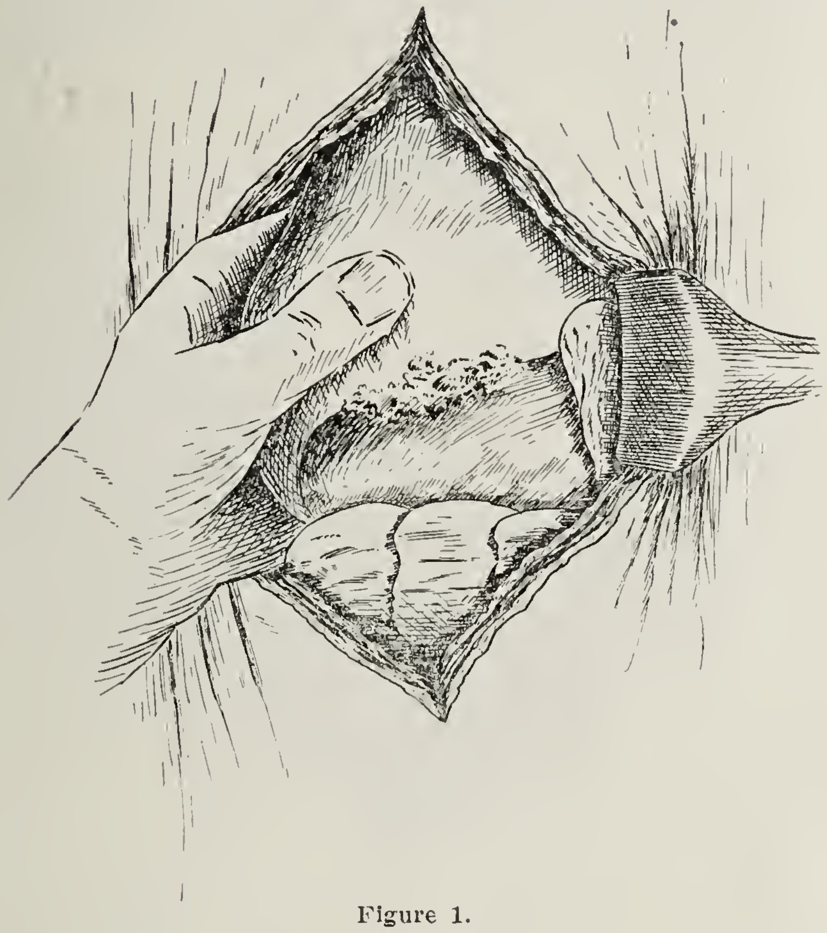

Figure 1.

A review of recent literature reveals the fact that modern surgery has done much to lessen the gravity of the prognosis in liver wounds, either accidental or those left by the surgeon after the removal of various growths.

The most complete statistics are those of Elder[10], in 1887. Of 543 cases collected by this author, he shows a mortality of 66.8 per cent.; 85.7 per cent. occurring in rupture; 55 per cent. in gunshot wounds, and 64.6 per cent. in incised wounds. These statistics are of more favorable cases, and do not include injuries inflicted by the surgeon while removing various tumors.

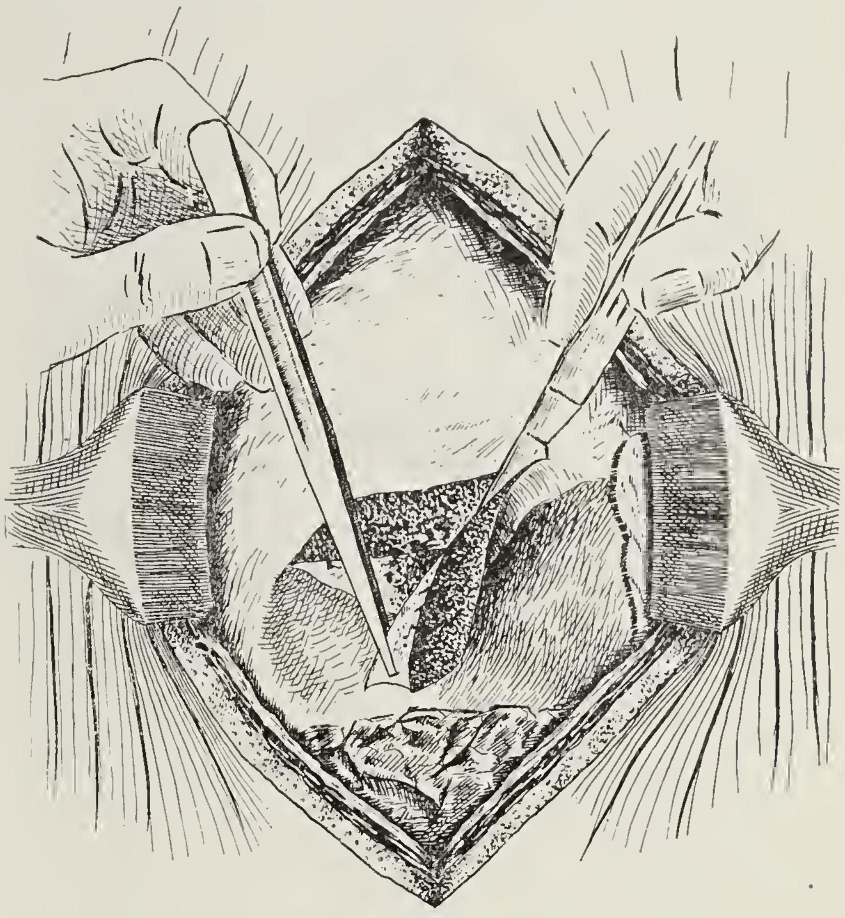

Figure. 2.

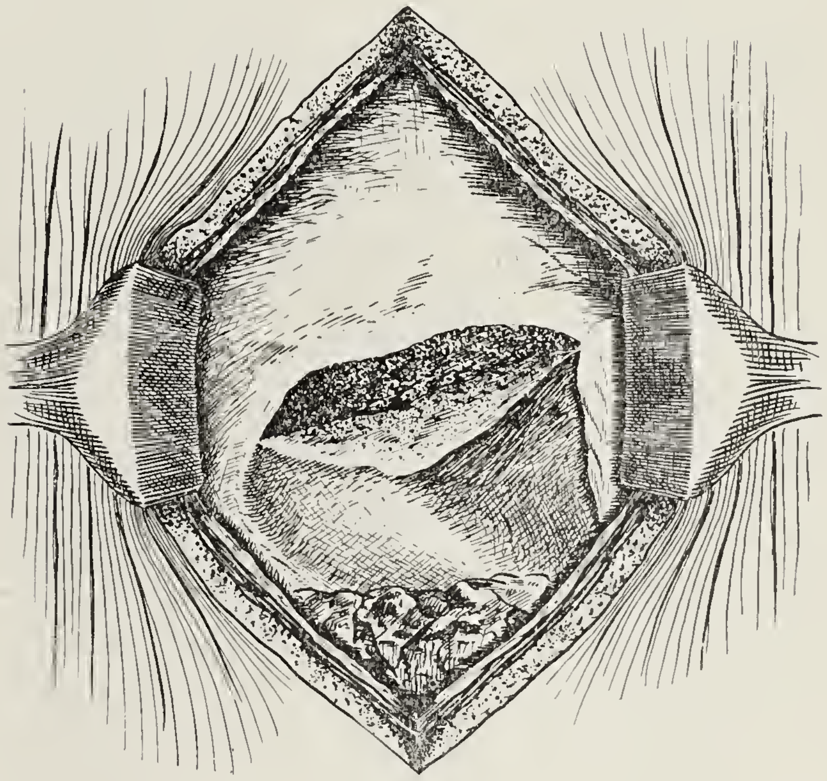

Figure 3.

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[1] Mayer on Die Wunden der Leber und Gallenblase, 1872, p. 114.
[2] Larrey: Memor. de Militarchir, 1812.
[3] Pirogoff: Kriegschir., 1864, p. 576.
[4] Holm: Sitzungsbericht, vol. iv.
[5] Joseph: Arch f. Microscop. Anat., 1869, vol. 1.
[6] Küster: Centralbl. f. Med. Wissensch., 1868, No. 2.
[7] Hüttenbrenner: Arch. f. Microscop. Anat., vol. v.
[8] Von Bruns: Beiträge f. klin. Chir., vol. iv, No. 1.
[9] Luis: Gazz. delle Chir., 1886.
[10] Elder: Arch. f. klin. Chir., Berlin, 1886-7, vol. xxxiv, p. 369

It remained, however, for Ponfick,[11] Meister,[12] and others to stimulate the surgeon and make him less timid in his attempts to attack this organ. They demonstrated on lower animals the regenerative capacity of that organ by removing as much as three-quarters of the liver, and showing a return to its normal size by compensatory hypertrophy and hyperplasia.

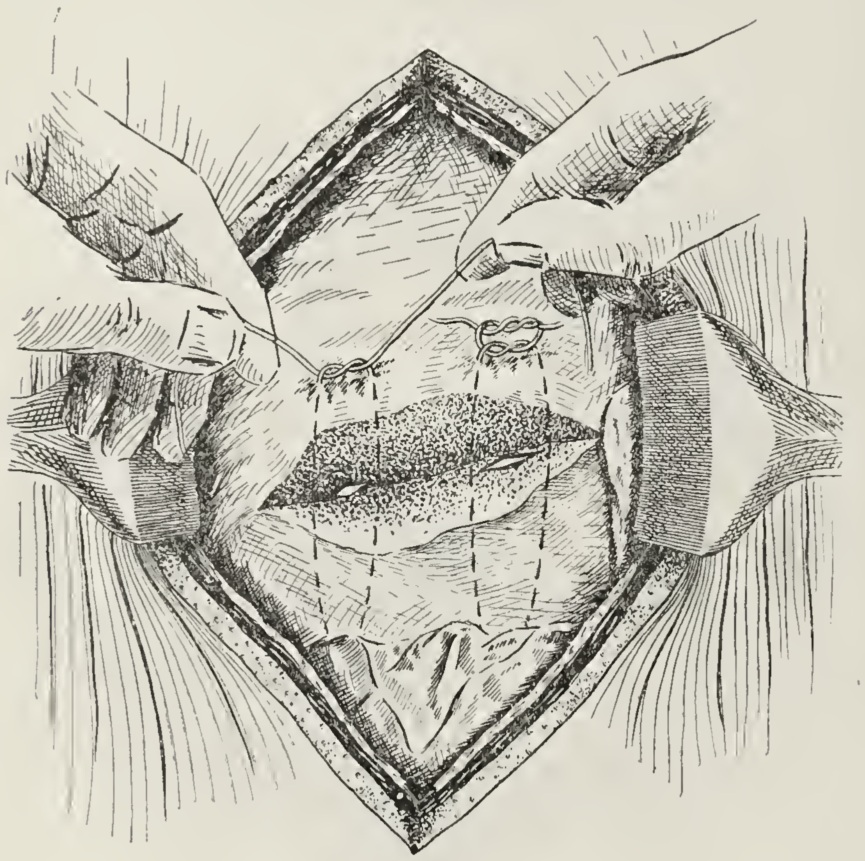

Figure 4.

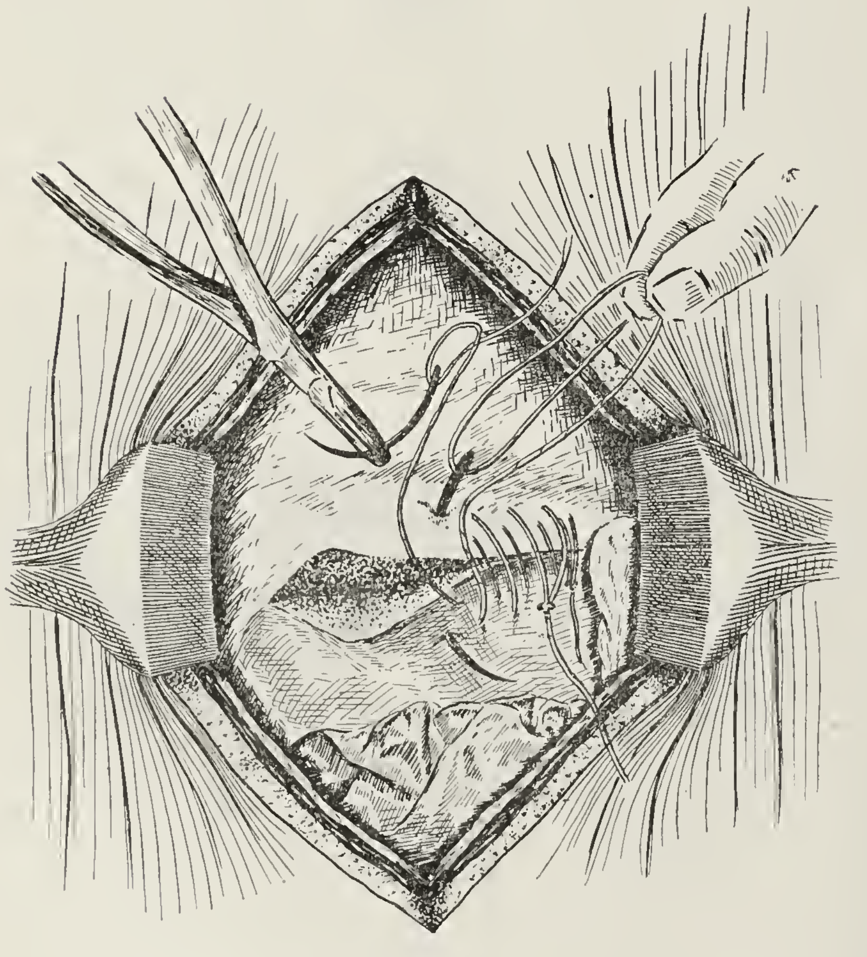

Figure 5.

The fear of cholemia due to the escape of bile, causing peritoneal involvement, as claimed by the older school of surgeons, had been refuted by Lücke and Tillman,[13] the latter citing a case of von Landerer, with injuries of the gall tract, and the withdrawal through five punctures of twenty-seven liters of bile. Peritoneal complications did not result from its presence, as bile is aseptic and at the same time antiseptic. I concur in these observations from my own clinical experience.

There were many methods in vogue up to the beginning of the last decade, all having as their basis the tamponade alone or combined with the suture, the suture alone being only a recent development.

Elliott[14] classifies the different methods as follows:

1. Packing the wound and fixing the stump extraperitoneally.
2. Packing and dropping the stump into the abdominal cavity.
3. Application of the thermo-cautery to stump and packing.
4. Combination of suture and packing.
5. The suture alone.

This is a broad classification. There are other means, however, that aid the above procedures, or are used in connection with other methods of handling the stump, as ligation of individual blood vessels, as advocated by Clementi[15] and others; ligation of vessels *en masse,* demonstrated experimentally by Kuznetzow and Pensky,[16] and confirmed by Auvray;[17] application of the tourniquet or constrictor, suggested by Terrillon,[18] followed by Israel,[18] Keen,[19] Carl Beck,[20] and others, using the same either for temporary arrest of bleeding, or for the purpose of temporarily constricting the growth to be removed until strangulation of the pedicle takes place. Hahn and Langenbuch[21] ligated the superior and inferior mesenteric arteries; Loretto,[22] Koenig,[23]

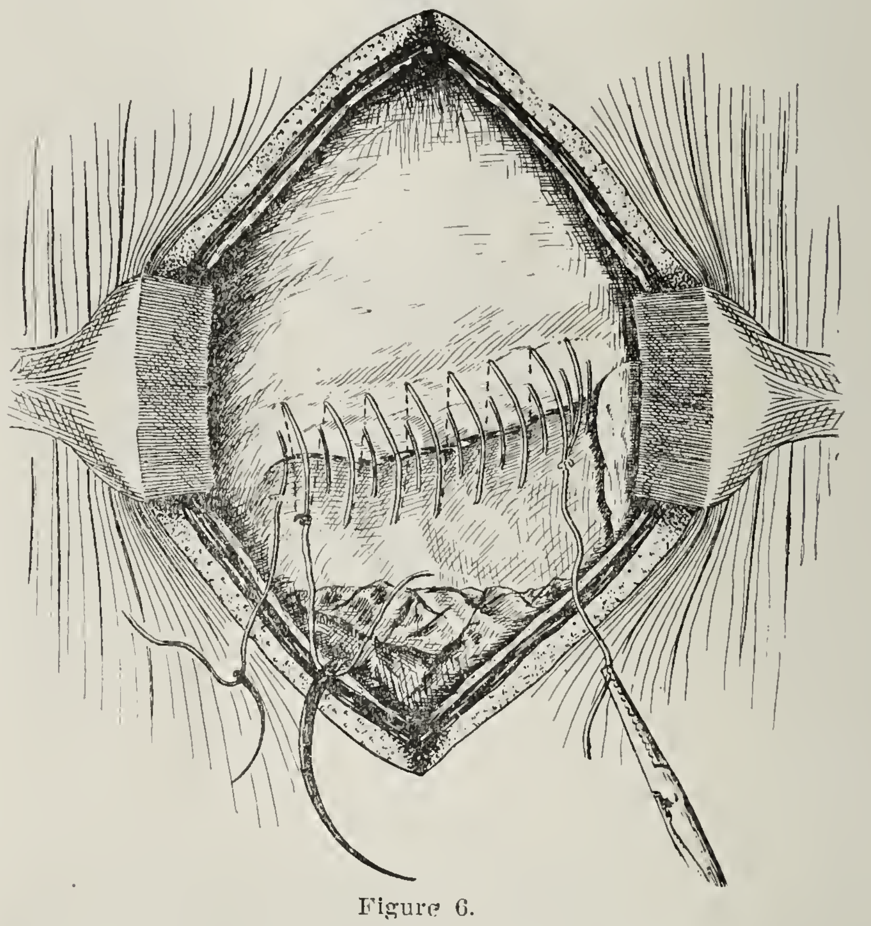

Figure 6.

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[11] Ponfick: Verhand. der Deutsch. Gessel. f. Chir., 19 Congres, 1890.
[12] Virchow's Arch. f. Path. Anat., vol. lxiii, 189-200.
[13] Verhand der Deutsch. Gessel. f. Chir., 1890.
[14] Ann. Surgery, 1897, vol. xxv, p. 88.
[15] Clementi: VIII Dol. Congres. della Soc. Ital. di Chir., a Roma, 1891.
[16] Rev. de Chir., 1896, pp. 501 and 594.
[17] Auvray: Rev. de Chir., 1898, Nos. 5, 8 and 9.
[18] v. Volkman's Deutsche Chir., 1861, No. 1. Israel: Centralbl. f. Chir., 1891, p. 83.
[19] Boston Med. and Surg. Jour., 1892, vol. cxxvi, p. 105.
[20] Carl Beck: Jour. Amer. Med. Assn., 1902, p. 1063.
[21] Centralbl. f. Chir., 1891, p. 82.
[22] Loretta: Congres de Ital. Chir., Neapol., 1888.
[23] Verhand. der Deutsch. Gessel. f. Chir., 1890.

and others arrested bleeding by a running suture of Glisson's capsule. Tillman and Lücke[13] advocated the Paquelin cautery, which is still used by many operators. Suegiroff and Koslenko[23] utilized steam; Hollander and Abramowitz[24] used hot air. All of these procedures are employed by the different operators, each selecting the one best suited for the particular case. Other procedures in conjunction with the ones just cited are resorted to in handling the stump. It will be observed, therefore, that the principal object in devising these various methods, was the control of hemorrhage. The re-establishment of the continuity of liver surface was not considered, and hence the development of more proper methods of suturing liver tissue after the resection of large portions of that organ remained thus far imperfect.

Notwithstanding the modern advancement in surgery, Elliott asserts that packing of liver wounds seems to him to have settled surgical treatment of that viscus for some time, if not for all time. I am familiar with the reported results obtained by the combined method of tamponade and suturing. I am also cognizant of the fact that surgery of the liver needs advancement, and such advancement is surely coming, judging from the work already done with the suture alone.

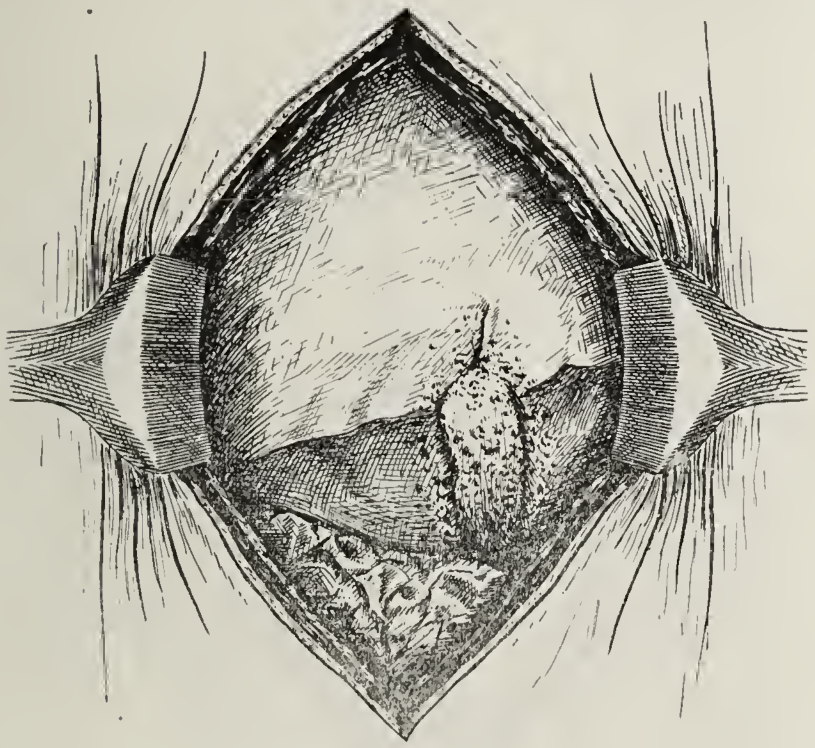

Figure 7.

It is only a very few years since the Mikulicz drain was employed to control oozing from raw surfaces denuded of their peritoneal coverings, but since we have learned to cover these denuded areas with peritoneum, the drain is dispensed with in a very large number of cases and the closure of the abdomen thus made possible. Therefore, that what is impossible and seemingly difficult to-day becomes possible and very easy to-morrow. The arrest of hemorrhage with the suture in the surgical treatment of wounds of the liver, after resection of large portions of same, has been demonstrated experimentally and clinically. Ceccherilli[25] and Segale[26] employed foreign bodies. One used perforated plates of whalebone, and the other ebony rings strung on catgut, both employing the devices for the support of the suture, which, according to these authors, completely arrested the hemorrhage, thus making the primary closure of the abdomen possible. These foreign bodies had to be left in the abdominal cavity, trusting to their encapsulation. Carl Beck[27] utilized bands of tissue from the abdominal wall, including peritoneum, fascia, and sometimes muscle. The suture is carried through these bands and utilized for its support. Kuznetzow and Pensky,[4] and also Auvray,[15] suture the liver in different ways around the part to be removed, then resect that portion of it surrounded by the suture, leaving a raw surface after resection is completed. These last-named authors demonstrated by ingenious experiments the possibility of successfully ligaturing liver tissue, since the walls of the blood vessels are sufficiently strong to sustain a weight of from 290 to 1600 grams without rupturing them, and that the isolated hepatic veins are stronger than the arteries.

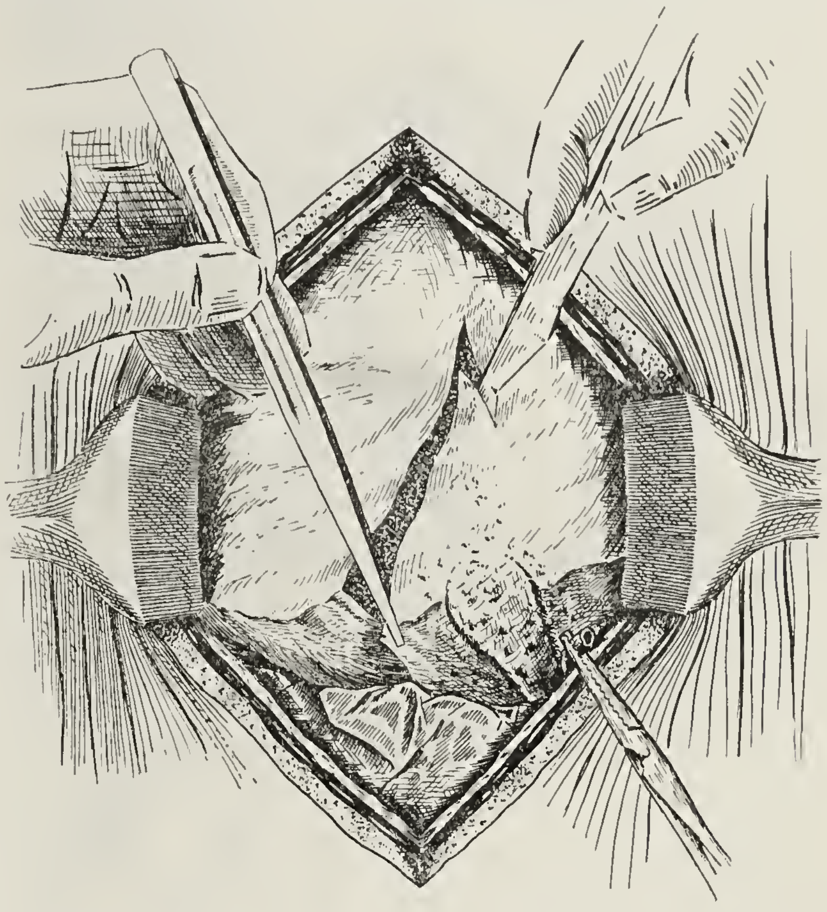

Figure 8.

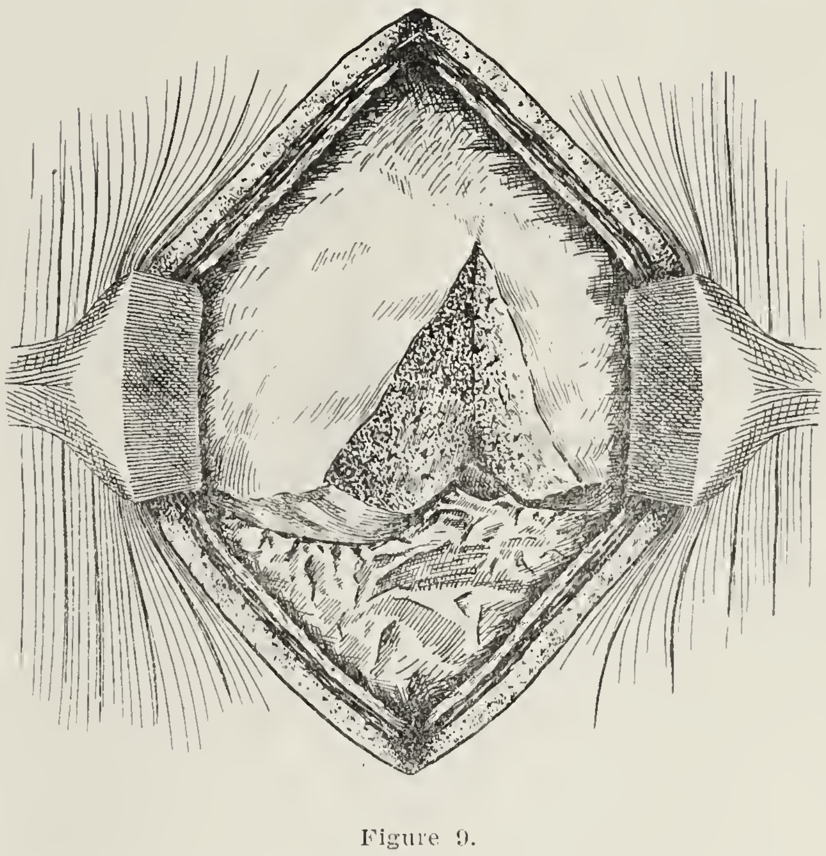

Figure 9.

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[24] Centralbl. f. Chir., Leipzig, 1902, vol. xxix, pp. 489-92.

[25] Ceccherilli: Gazz. d. Osp. e. d. Chir., 1895, vol. xvi, p. 1604.

[26] Segale: XIII Internat. Cong. de Med., Sect. de Chir., 1900, Paris. Compt. Rend., 1901, pp. 254-259.

[27] Jour. Amer. Med. Assn., 1902, p. 1063.

The clinical results obtained by Carl Schlatter[28] in his reported cases demonstrate the effectiveness of the suture in liver wounds, and the future in store for the surgery of that organ.

He reports five very interesting cases:

1. Stab wound; prolapse of colon and omentum; profuse hemorrhage from liver; wound about one inch wide and so deep that finger-tip failed to reach the bottom; two deep sutures of heavy catgut, and two capsular sutures of fine silk; recovery.

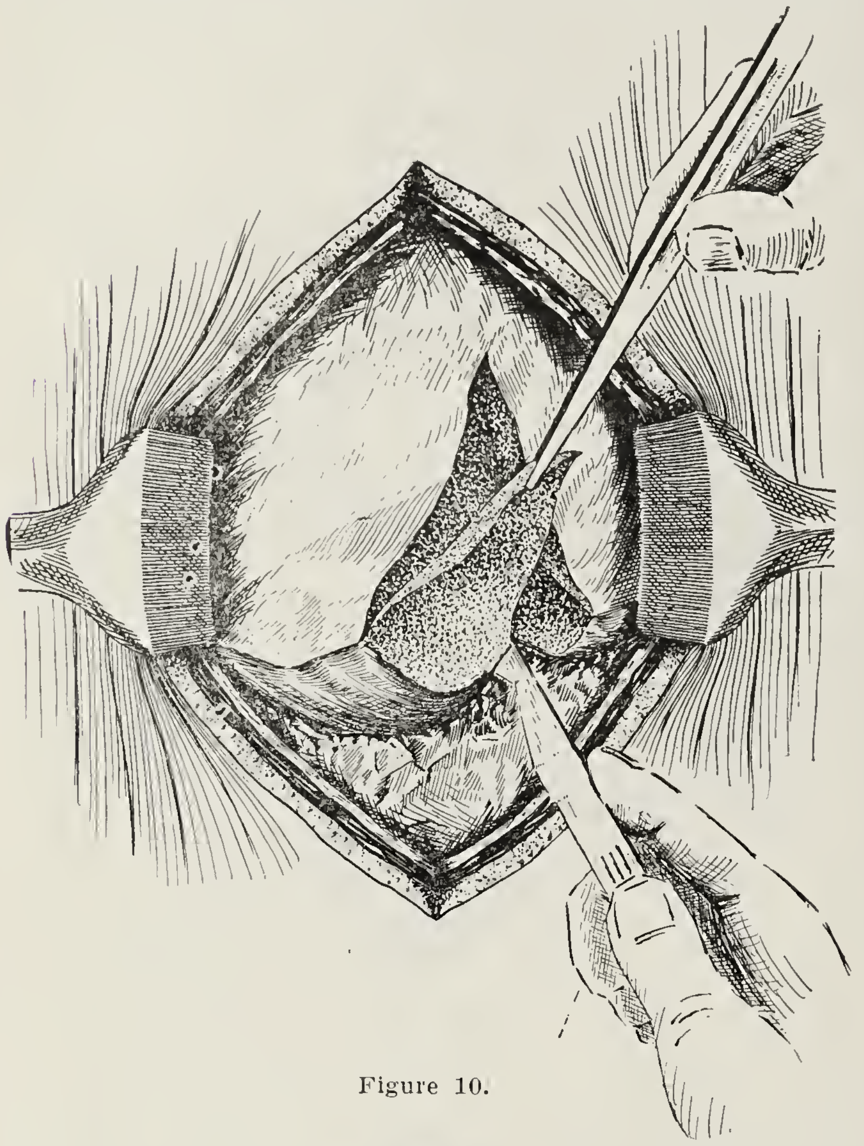

Figure 10.

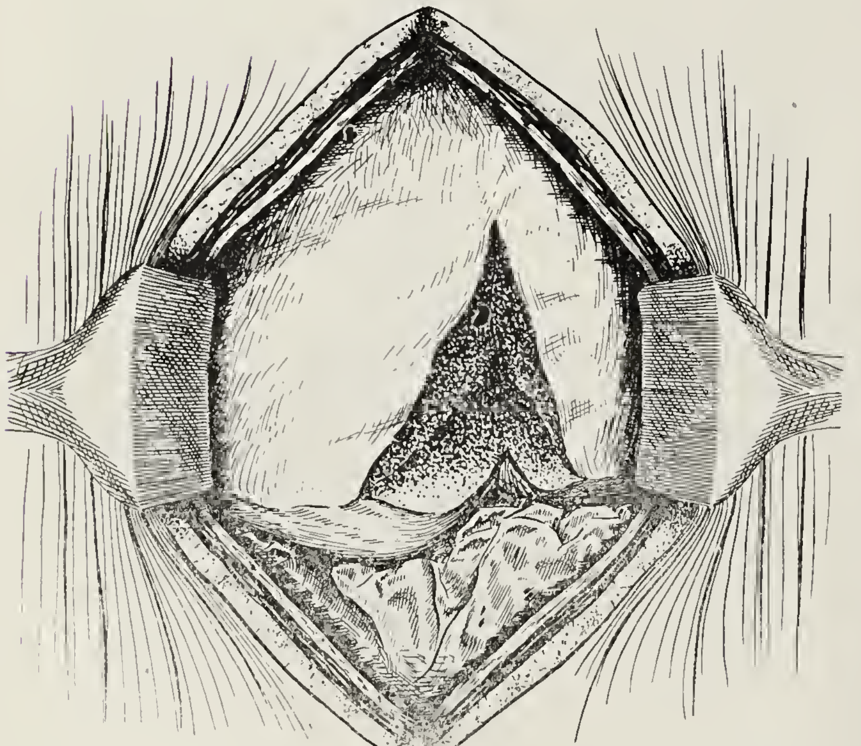

Figure 11.

2. Gunshot wound (revolver); severe hemorrhage; three deep sutures of heavy catgut to check the bleeding; good recovery made.

3. Gunshot wound of liver by Folbert projectile; the track of the bullet involved the stomach, jejunum, pancreas and the left kindney; patient 17 years old; liver tissue was friable; six deep silk sutures stopped hemorrhage; death after eight hours.

4. Rupture of liver and right kidney; operation two days after; extreme anemia; laparotomy; suture of liver; hemorrhage stopped; saline infusion; death.

5. Almost complete sagittal rupture of left lobe of liver and profuse exudate of bile into peritoneal cavity; laparotomy; suture of liver fourteen days after injury; death.

In only one of these cases (Case 3) was there a tendency for the sutures to cut through the tissues. In this case silk was used instead of catgut, and the tissues were more friable than in the other adult patients.

It will be observed that the results with respect to checking hepatic hemorrhage by means of the suture are very satisfactory, and that catgut is preferable to silk. Schlatter's efforts at suturing large liver wounds are very encouraging. In view of the fact attending the results of the first two cases, Burckhardt's objections to the employment of the suture in large liver wounds do not appear valid.

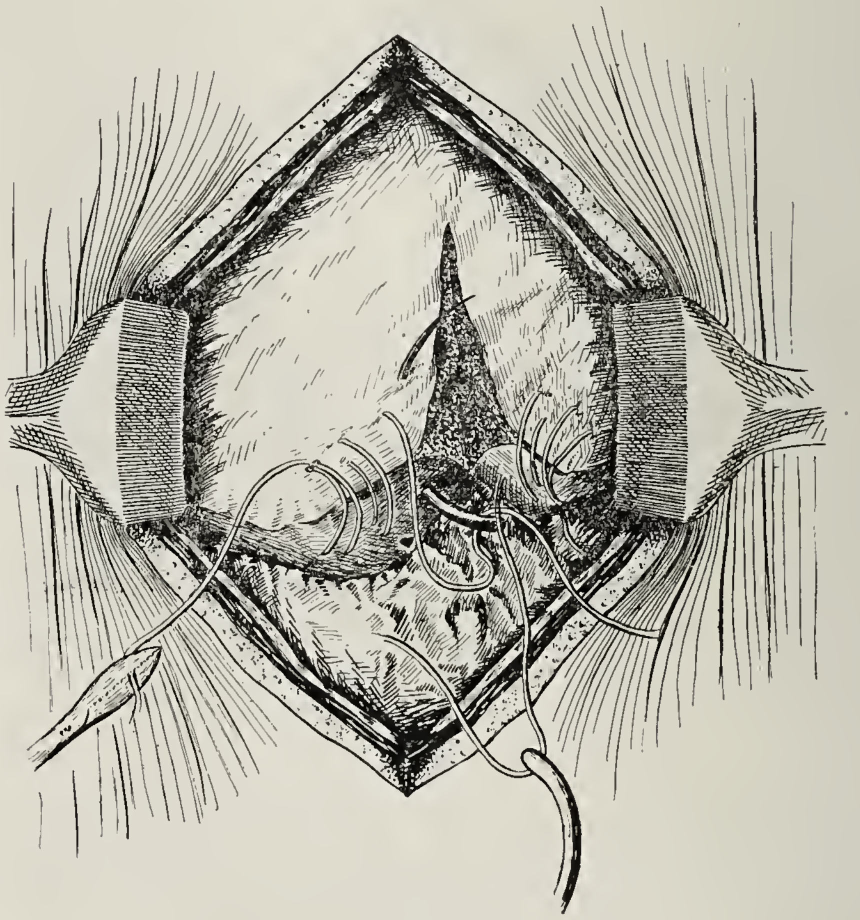

Figure 12.

After studying the subject, I concluded to conduct a series of experiments with the object of finding a method whereby large liver wounds could be successfully managed with the suture alone, re-establishing the continuity of the organ, completely controlling hemorrhage, and closure of the abdomen.

Within the past three years a series of eighteen experiments in all were conducted on dogs. Of these, two consisted in simply incising the liver through its entire thickness, dropping the organ back without suturing it, or making any attempt to control hemorrhage, which was profuse. Both dogs recovered.

In the remaining sixteen experiments the following plan was pursued: Let us suppose a portion of liver is to be resected for either a severe, extensive, crushed laceration, or a growth (Fig. 1). As a rule, these occur more often at or near the lower border of the liver. If the part is to be removed in a transverse direction, the liver tissue is incised on the upper surface, beginning at the healthy border on the hypochondriac side of the growth or injury, carrying the knife around the part to be removed to the border of the viscus on the epigastric side. The incision in the under surface is accomplished in such a manner that both will meet (Fig. 2). If desired, the incision may be commenced on the under surface and completed on the upper surface. The portion of liver thus removed by the junction of the two incisions is wedge-shaped, leaving the organ with two flaps forming a trough (Fig. 3). If the flaps do not fall into coaptation, more tissue should be cut away, as the perfect apposition of the flaps is essential for easy suturing. Before suturing the flaps, any bleeding is controlled either by a single ligation or ligation *en masse,* as the case demands.

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[28] Beitr. f. klin. Chir., vol. xv, No. 2, 1896.

The arterial bleeding is easily distinguishable from the venous oozing, and is plainly seen coursing through the dark venous blood. The ligation is accomplished by passing a medium-sized catgut suture through the entire thickness of the liver surrounding the vessel or vessels; a single knot in the catgut is now made, and gradually tightened until the bleeding ceases; the ligation is then completed by taking one or two more knots (Fig. 4). This ligature may cut its way into the liver, producing a slight oozing, which can be controlled by pressure or a superficial suture of fine catgut. As soon as the hemorrhage is checked, the flaps are quickly coaptated, and with a long non-cutting needle, threaded with a medium heavy catgut, a running suture is commenced at one end and rapidly continued in the following manner: One suture is carried through the liver tissue near the bottom of the trough, and then one superficially, and so on alternating until complete closure. It requires but very slight tension to approximate the flaps. (Figs. 5 and 6). The mode of suturing can be varied according to the fancy of each operator. The main object is to bring the two flaps together, *obliterating all dead space. The continuity of the liver surface is re-established, appearing as if a new border was constructed. No raw surface or ragged edge is to be left.*

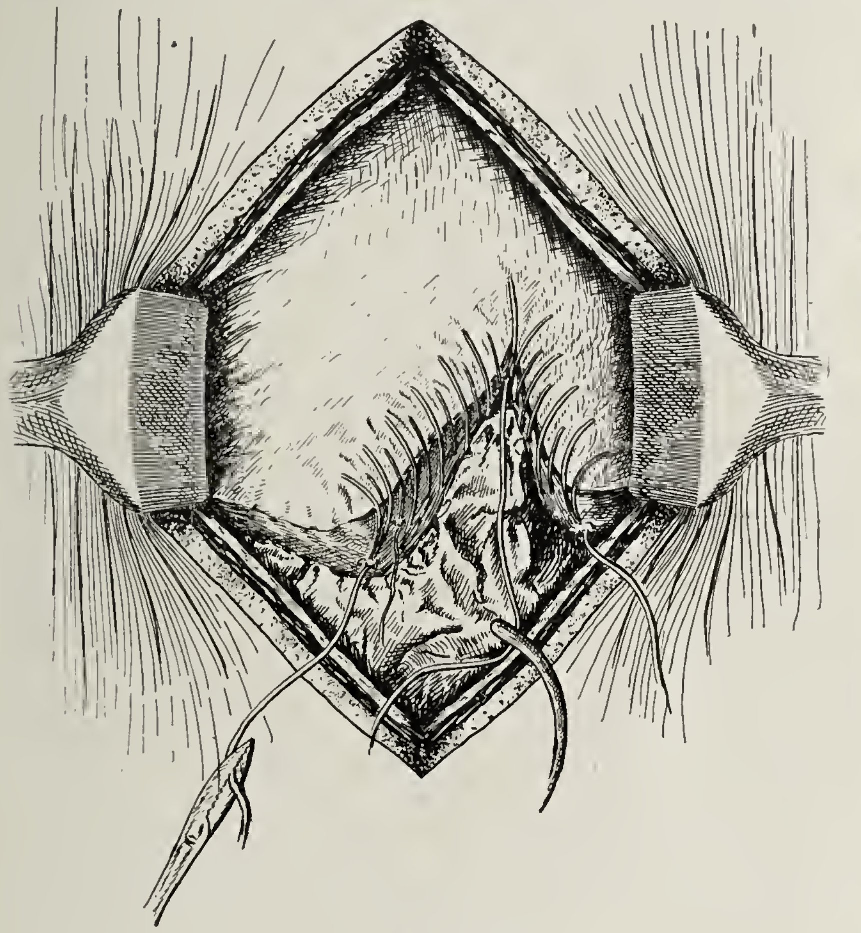
Figure 13.

Let us assume again that a portion of liver is to be removed in a longitudinal direction to the viscus (Fig. 7). The following method is then pursued: A wedge-shaped portion of the entire thickness of the liver is first cut out (Figs. 8 and 9).

The two broad raw surfaces left by the removal of the wedge-shaped piece (Fig. 9) are now converted into troughs. This is accomplished by the excision of wedge-shaped pieces. The troughs thus formed each having two flaps (Figs. 10 and 11).

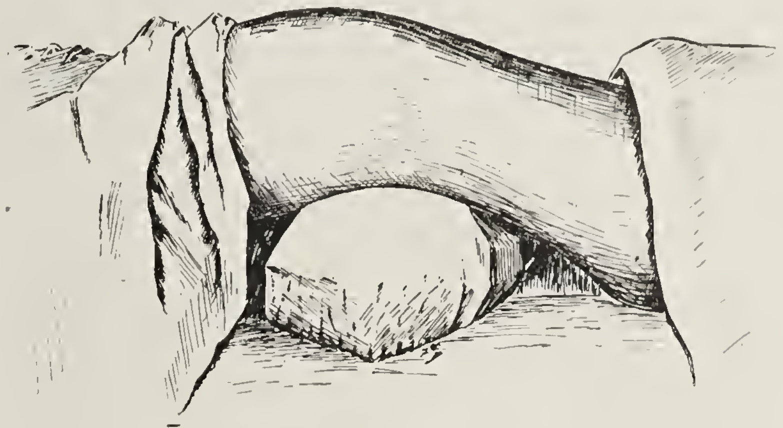
Figure 14.

When the operation is completed, the raw surfaces of the original V left are transformed into smooth, continuous liver tissue, assuming the form of liver borders, and the V space left persisting as a notch (Figs. 12 and 13).

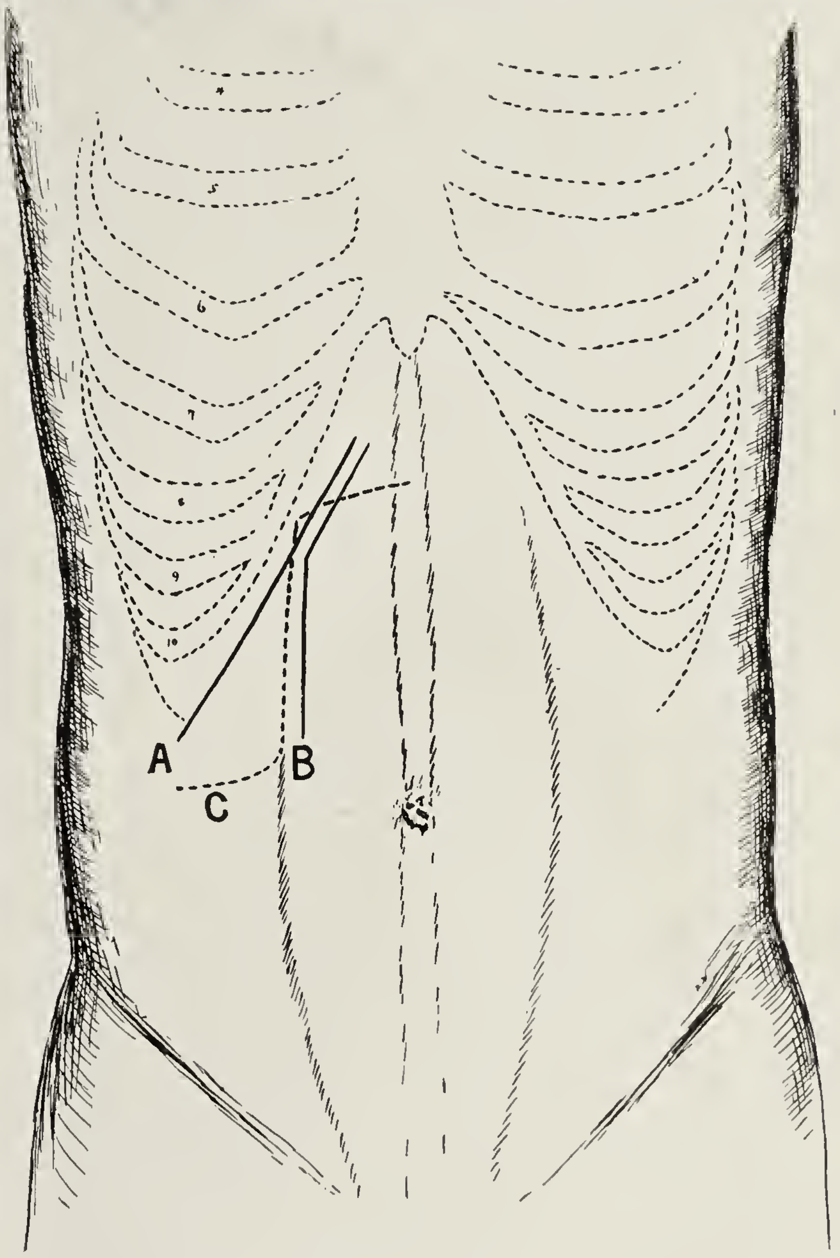

Figure 15.

This method of incising the liver facilitates easy suturing and does not require any tension on the sutures to coapt the flaps, and, at the same time, hemorrhage is successfully arrested, as was demonstrated in the sixteen experiments. There was not enough blood lost to produce shock or anemia in any of the dogs. Three died of sepsis. In none of the animals were there any evidences of either primary or secondary hemorrhage or escape of bile. When success was attained with this method of securing easy hemostasis in liver wounds, my curiosity still remained unsatisfied without any logical explanation for such accomplishment. It remained for Dr. Crile, of Cleveland, to offer his very practical explanation, based on animal experimentation and clinical observation, to strengthen my belief in the practicability of this method.

Dr. Crile, in his discussion of this subject, at the Pan-American Medical Congress, held at Panama, Jan. 3, 1905, made the following remarks:

> The research of Dr. Frank has given me a valuable suggestion. His observations on the arrest of hemorrhage are in accord with certain facts of the portal circulation, viz., the portal blood pressure is low even in the larger trunks—in the smaller vessels in the liver it amounts to but a few millimeters mercury. Since the principal hemorrhage is venous, it requires but a slight pressure distributed evenly over the bleeding surface to completely control it. The clean-cut incision, securing perfect apposition of the flaps, would require but slight pressure to control the hemorrhage. This pressure is well provided for by the method of suturing adopted by Dr. Frank.

In a recent letter from Dr. Wm. J. Mayo, of Rochester, Minn., I am informed of two cases in which the liver was injured while removing the gall bladder, causing considerable bleeding. In both cases the bleeding stopped promptly on applying the above principle. Dr. Mayo further states that from his experience in these two cases he has no doubt that this method will be of great value in direct excision of the liver.

I believe that with such results from a simple method the surgery of the liver will be revolutionized, and if put into practice operations on that organ will take rank with other modern operations.

My object is not to convey the idea that the foregoing method is ideal. Cases may present themselves where this procedure can not be carried out, on account of the inaccessible locality of the operative field. In the majority of the cases, however, I am convinced, from the limited number of experiments, that the method can be employed with little difficulty.

The question now to be considered is, What portion of the abdominal wall offers the best site for the operative incision? According to Schlatter, the upper portion of the liver, hemmed in, as it is, by the costal framework and by the diaphragm, is in a difficult position for surgical access. The left lobe and the irregular concave under surface is, on the contrary, more accessible. By moderate traction the anterior portion of the convexity, and in a similar manner the almost inaccessible posterior part, can usually be brought within reach, especially if the cushion or sand bag, as suggested by Mayo Robson,[29] is used (Fig. 14). If the site to be reached is located in the left lobe, or is undetermined, a median incision should be made. In wounds of the right lobe a curved incision along the lower border of the costal cartilages and to the right of the rectus muscle, as suggested by Kocher, is preferred (Fig. 15a). In some cases a combination of both, forming an angular incision, as practiced by Mayo Robson,[29] is to be employed (Fig 15b). Dr. Arthur Dean Bevan[29] suggests the use of an S-shaped incision in gall tract surgery, which may be used to good advantage in easily exposing the liver (Fig. 15c).

Since by far the greater number of wounds or growths of the liver are located on the ventral or lateral aspects of the viscus, these plans of attack will suffice. All incisions, whatever may be the choice, should be very large, in order to facilitate easy manipulation and quick work. For wounds located posteriorly, the lumbar incision will not answer, on account of the thickness of the muscular walls. The thoracic wall can, according to Lannelongue, be resected along the anterior portion of the eighth, ninth, tenth, and eleventh costal cartilages, as the pleura does not extend down to this part of the chest wall. Lannelongue's[28] method consists of an incision parallel with the thoracic border, and two centimeters above the same, beginning three centimeters from the border of the sternum, and ending at the junction of the tenth rib with its costal cartilage. The retraction of the divided muscles exposes the costal cartilages to be resected. They are then carefully freed from their attachments and cut through with cartilage scissors. If the ends of the ribs are now retracted and pressed apart, nearly the entire extent of the convexity of the liver can be made accessible.[30]

GALLSTONES IN THE COMMON-DUCT.*

WILLIAM D. HAGGARD, M.D.
NASHVILLE, TENN.

Gallstones in the common duct have been found once in every five cases operated on by Robson, and once in every seven cases of the Mayos. It is estimated that 67 per cent. occur in the duodenal end, 15 per cent. in the hepatic end, and 18 per cent. in the middle of the choledochus. They vary in size usually from a split pea to a nut-meg, although exceptional instances of much larger stones have been recorded. They are usually solitary, though more than one are frequently found.

They sometimes may remain many years. Moynihan speaks of one case removed after 9 years. They usually cause death in from 6 to 12 months from cholemia if the obstruction is complete and unrelieved. I have seen death ensue in 6 weeks from cholemia and infection, with intense jaundice and delirium, in spite of operation, which was only undertaken as a last resort, and which did not apparently hasten the end.

In acute obstruction Kehr advises against operation, not only on account of the high mortality attending it, but because a quiescent period usually ensues, in which jaundice and cholangitis are absent. Moreover he entertains the hope that the stone may, in some instances, finally escape and thus relieve the condition spontaneously. He makes the reservation, however, that it shall not be allowed to go unrelieved longer than 3 months, as usually beyond that time blood dyscrasia will have advanced so far that even operative relief cannot be invoked with safety.

Mayo observes, however, that "unfortunately the majority of common-duct patients have either never had an intermission or have passed beyond it and operation is no longer an election as to time, but a necessity and no matter how desperate, must be undertaken to save life."

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[29] Monyan's Surgery of Gall Tract.

[30] In addition to the references already cited are the following: Chaot-Provonst: Arch. Prov. de Chlr., Paris, 1901, vol. x, p. 198. Centralbl. f. Chir., 1890, No. 30. Wien. klin. Wochenschr., 1892 No. 2. Albert: Wien. klin. Wochenschr., 1890, No. 52. Postemski: Centralbl. f. Chir., 1893, p. 359. v. Häcker Wien. Med. Wochenschr., vol. xiv, xv, 1886. Segon: Bull. de la Soc. de Chir. de Paris, 1887, xiil. Loretta: Congress de Ital. Chir., Neapol., 1888. Pozzl: Gaz. Med. de Paris, June 30, 1888. Ruggi: Dell Epatectomia, etc., Bologna, 1889.

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If, on the contrary, there is no infection or jaundice or a quiescent period can be attained for operation, the mortality is, in the hands of the Mayos', only 2 per cent. contrasted to the general mortality of, say 10 per cent., in common-duct cases.

It was formerly the custom to look for the presence of gallstones in the feces after attacks of colics, and if found, it was with great delight and the hope that the trouble had reached a happy conclusion. Unfortunately the escape of stones does not occur as often as was commonly supposed, as the great majority of colics are unsuccessful in expelling the stone. Even if it is expelled, it is no evidence that others are not left behind. Indeed the surgeon hardly ever fails to find others in the biliary tract after the escape of one or more in the feces. I have reported one case of 100 stones removed from the gall blader after the patient had recovered a great many, and in another case herewith recorded there were 7 stones in the common duct after the patient had collected 45 during a period of 5 years. Mayo regards the passage of stone as an indication for operation and says, "in no case was operation performed on a patient who had passed stones by the bowel that the gall bladder did not contain more."

It must be remembered that large stones are more liable to ulcerate into the duodenum, stomach or colon than they are to pass through the common duct, and even then others, although much smaller, are likely to remain.

In the invasion of the common duct by stone, beside the colic which drives it, two other elements are concerned—obstruction to the flow of bile, and infection. In many cases the symptom of obstruction is not absolute, and infection is overcome. Unless the stone is tightly impacted, the downward flow of bile tends somewhat to wash away the infectious elements. This is wanting in the gall bladder, and hence infection there, if very virulent, goes on to suppuration, gangrene and perforation. The obstruction, too, is often imperfect, and bile flows alongside of the stone. Even if a round stone completely plugs the lumen, the bile accumulates behind it, the duct distends, and the stone floats back, thereby temporarily relieving the obstruction, and thus the ball-valve stone of Fenger alternately occludes the duct and then allows the bile to escape.

If the stone is impacted the jaundice is absolute. The common duct dilates. It sometimes attains a very appreciable size. It has been so distended as to be mistaken for a distended gall bladder, a pancreatic cyst and a hydatid of the liver. The pain is referred to the back under the right scapula. It is more prolonged. Vomiting is obstinate. Tenderness is present between the xiphoid and the umbilicus. Pressure may be so great as to erode mucous membrane and finally to perforate into adjacent viscera. Gallstones discharged in this manner sometimes cause intestinal obstruction.

The typical symptoms of gallstones in the common duct are very striking and characteristic. They may be enumerated in the order of their incidence in a given attack as pain, chill, temperature, sweating, hypersensitiveness, jaundice.

The pain in the beginning of an attack is usually paroxysmal and cramp-like. It may be dull, aching and rather constant. The patient may have shivering and rigors, or a distinct chill. The temperature then immediately rises, sometimes to 104. Profuse sweating follows and the temperature suddenly drops to normal. It thus has the "steeple" appearance on the temperature chart. Jaundice, if it occurs, usually makes its appearance in a few hours, or if already present, becomes strikingly deeper. The liver is tender and generally enlarged. This sequence of symptoms commonly subsides in a few days, only to go through the same cycle every few weeks.

The ague-like character often causes a diagnosis of malaria to be made, particularly if jaundice is absent or slight. It is also described as the "intermittent, hepatic fever of Charcot." During the jaundice the stools, of course, have the grayish, white, putty appearance, and the urine is beer colored. When the stone is dislodged, the stools are again colored brown with bile and the urine is no longer discolored by it. This very variation of jaundice and stools is most significant of calculous obstruction of the movable type. Frequent repetition of these attacks causes marked loss of weight from the recurring toxemia, and digestive disturbances. The spleen is usually enlarged.

If the fever, instead of intermitting, becomes constant, it indicates a general suppurative cholangitis, abscess of the liver or subphrenic abscess. The infection may extend into the pancreas. Opie has shown that a small stone lodged in the ampulla obstructing the papilla of the duodenum may cause the bile to be forced directly into the dust of Wirsung and cause an acute infective pancreatitis with fat necrosis and death. An acute accession of intense epigastric pain, with sudden shock, muscular rigidity, vomiting and collapse is indicative of this fatal catastrophe. There is no leucocytosis in this condition which distinguishes it from perforative peritonitis.

Riedel and Robson have shown that chronic pancreatitis may be caused from the gradual extension of a chronic infection from common duct gallstones. This, fortunately, is entirely curable by the removal of the cause and drainage. Prolonged jaundice vitiates the blood to such an extent that it leaks out of its proper channels. Subcutaneous hemorrhages occur and bleedings from the mucous membranes. This lack of plasticity of the blood renders operation in the presence of prolonged jaundice dangerous, as uncontrollable oozing often occurs from the incision, that is some times fatal. Chlorid of calcium is said, by Robson, to increase the blood-clotting power, but ecchymotic patches are a contraindication to operation without preliminary treatment.

Another result of prolonged gallstone irritation is primary cancer of the gall bladder and ducts. It was observed in 4 per cent. of 1,000 cases by Mayo. A hard, nodular mass in the region of the gall bladder, not tender associated with loss of weight, preceded by a gallstone history and followed by a lemon-colored, painless jaundice, is suspicious of malignancy.

Gallstones in the common duct are rarely attended with enlargement of the gall bladder. This physical sign serves to discriminate it from about the only other condition with which it may be confused—obstruction of the common duct with jaundice from other causes, principally cancer at the head of the pancreas. The jaundice in these cases is intense and unvarying, and the gall bladder is nearly always enlarged and painless. Courvoisier's law is, "In 80 per cent. of the cases of obstruction of the common duct due to stones there is contraction of the gall bladder, while in 90 per cent. of the cases of enlargement of the gall bladder the obstruction is due to other causes than stone."

The chief reason for a contracted gall bladder with common duct obstruction is the fact that infection of the gall bladder has probably occurred some time before, which has greatly thickened its walls, and perhaps fixed it by adhesions from a pericholecystitis. The gall-bladder contracted in the preceding colics which started the stones on its migration from the gall bladder during the inflammation, and caused the walls to be stiffened with inflammatory exudate while thus contracted. It is, therefore, non-distensible and no amount of obstruction to bile can dilate it. The liver ducts yield and the cells are some times hindered in their secreting function by the pressure, causing the grave type of cholangitis, which together with infection renders this complication of cholelithiasis so desperate.

In distension of the gall bladder the deep, persistent jaundice generally betokens quite certainly the non-calculous origin.

Obstruction by stone and by tumor is differentiated in the following table adapted from Kehr:

	Gallstone Obstruction.	Obstruction by Tumor.
History	Previous colics	Absent
Duration	Years	Only few months, at most a year.
Pain	Always present	Very rare.
Fever	Frequently present	Usually absent.
Jaundice	Variable comes and goes, stools alternately gray and brown	Very intense, stools continuously clay colored.
Palpation	Gall-bladder small and not felt	Large, elastic, distended painless tumor.
Spleen	Enlarged	Normal.
Ascites	Absent	Frequent in malignancy.
Cachexia	May be simulated in neglected cases	Pronounced. Left clavicular glands enlarged.

Obstruction also occurs from (1) cholangitis extending from cholecystitis; (2) adhesions; (3) stone in cystic duct large enough to produce pressure blockage; (4) chronic pancreatitis.

While jaundice occurs as described in the movable or ball-valve stone of Fenger, yet it is not always present where stones are in the common duct. In one of my cases during five years, 45 stones were, at various times in the common duct and were passed *per vias naturales,* and eight were found in a dilated duct at the operation, still he had never had jaundice but once and that for only a few days. Kehr found jaundice absent in 33 per cent. of his cases with stone in the common and hepatic ducts and Mayo says one-third of their patients had little or no jaundice at the time of operation; disappearance of jaundice does not necessarily indicate, however, that the stone has passed.

Jaundice is not, therefore, an infallible sign and should not be looked for in the great majority of cases of gallstones. The diagnosis can and should be made in most instances before the complications which cause jaundice occur.

In 1902 Robson operated 68 times, with mortality of 15 per cent. In his last 21 cases the mortality was 5.5 per cent. Kehr had 137 cases, with 9 deaths, or 6.5 per cent. Mayo's 137 cases had 16 deaths, or 11.7 per cent. Of the 16 deaths only 7 per cent. died of the immediate effects of the operation, and the other 4 per cent. recovered from the operation, but did not regain sufficient strength to leave the hospital. In this group was the unprecedented record of 30 cases without a death.

The most convincing plea for the earlier recognition of gallstone disease before the complications and common duct obstruction occur, these surgeons, out of 1,000 operations on the gall bladder and ducts did 820 cases where the disease and stones were still confined to the gall bladder with the most surprisingly low mortality of 2.4 per cent. This included acute and chronic infections, local peritonitis, complications, intestinal fistula, etc. In 416 cases of simple gall bladder disease, the mortality was less than 0.5 per cent— equally as good as the interval operation for appendicitis in patients of the same age and general condition.

Inasmuch as obstruction is primarily a purely mechanical condition, it requires purely mechanical treatment—operative removal. This gives opportunity for the relief of the other element—infection, by drainage, and drainage is the secret of success in the treatment of inflammations of the gall tracts.

NON-CALCULOUS CHOLECYSTITIS.*

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The literature bearing on diseases of the liver and bile passages has become voluminous and of late years, since operations for the relief from gallstones has become the recognized treatment for this disease, many books and other valuable contributions have been added having special relation to the surgery of the liver, bile passages and pancreas. Notwithstanding the fact that calculous cholecystitis or cholecystitis associated with gallstones have been well worked out, it is only recently that a class of cases of long-standing gall-bladder disease without gallstones has received attention.

Gall-bladder inflammations designated as acute or chronic catarrhal cholecystitis or the complicating condition known as empyema of the gall bladder or suppurative cholangitis involving the ducts of the liver are well described.

The special form of gall-bladder inflammation referred to in this communication differs somewhat in both the clinical and pathologic relations from the conditions above referred to on the one hand and from the calculous forms of inflammation on the other. It is not contended that the infection differs in character, but rather in degree; that gallstone formation does not occur even in long-standing cases, in fact it would appear that calculous formation was prevented by some condition present in the gall bladder itself.

The symptoms closely resemble those of gallstone diseases, but the classic gallstone colics are absent, although pains somewhat similar to those due to the passage of stones may occur.

The gall bladder has been explored under the diagnosis of gallstones and none found, which has led to the assumption sometimes that the stones had escaped or that there was an error in diagnosis. It has been observed, however, that drainage relieved the symptoms as effectually as in gallstones.

It is now an accepted fact that the chief cause of gallstone-formation is infection, and, while it is known that other germs may be the cause, the most frequent infection is the colon bacillus.

The manner in which the germs gain access to the gall bladder is immaterial here; their presence is the beginning of certain changes in the organ; the type of the change it is assumed will depend on certain facts in relation to the activity of the infection. Whatever secondary influences may be operative is immaterial, when it is accepted that germ infection is the essential etiologic factor. The fact that gallstones may remain in the bladder in many cases for an indefinite period without provoking symptoms indicates that the mere stone-forming process is not attended with a very active infection. It may, indeed, be true that active infection is inimical to the formation of gallstones; much support for this contention is found in the associated conditions which appear to have their development about the time symptoms appear, and correspond with those in gall bladders which are empty so far as stones are concerned but are in such a condition of disease as to give rise to distressing symptoms, or even be a source of danger to the patient's life. The discovery of stones in the gall bladder post-mortem without symptoms during life and the apparent chronicity of a calculous condition before symptoms appear, indicate that we must look deeper than the infection which has caused the gallstones for the serious symptoms which brings the patient to the surgeon.

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It is when the mechanical influences of gallstones come into operation that they become of surgical interest. First, when they attempt to escape through the cystic and common ducts. Second, when they traumatise the gall bladder and either increase the activity of the primary infection or lessen the resistance of the tissues.

In calculous disease of the gall bladder and bile tracts complicated conditions frequently exist. The simplest is the pure mechanical effects of the passage of gallstones, then comes the transitory or more continued toxemia from obstruction, and then the secondary mixed infections or the pus-forming activity of the primary colon bacillus which constitutes the beginning of stone formation, the immediate exciting cause being the trauma; usually the blocking of the cystic duct. The existence of pus in the gall bladder or an empyema may be said to follow the formation of gallstones if such be found in the gall bladder and not be coexistent primarily with the formation of calculi.

A separate but not altogether different condition is the infection of the gall bladder without the formation of stones. This has generally been designated as catarrhal cholecystitis, but this does not seem to be an entirely satisfactory definition, for it is not shown that the inflammation differs in its origin from the cholecystitis associated with gallstones, but, in fact, is dependent on the same kind of infection, differing only in degree or intensity. The gall bladder, when exposed, presents nearly the normal appearance, but on closer examination the walls appear to be a little thicker than is found in the healthy organ, and the lymphatic glands along the common duct are frequently enlarged. The bile is dark, thick and ropy, and the mucous membrane of the gall bladder is found covered with minute crystals of cholesterin; in some cases the mucous membrane is more or less actively inflamed or even ulcerated. When ulcerated patches are found, the presence of cholesterin crystals is less marked. It would appear that the cholesterin deposit marks a less active infection is rather more than less in the non-calculous yet both conditions may be found in the same gall bladder and may differ in time of development. In the latter the infection is too severe to result in the formation of calculi and prove inimical, even to the secretion of the cholesterin by the mucous cells, or, if the process has once commenced, is arrested by the increasing violence of the infection.

These same conditions may be found in calculous gall bladder, but mark different stages and different degrees of development, but in the non-calculous the milder or stone-forming period has never existed. Experimental evidence in support of the fact that the formation or non-formation of gallstones is largely dependent on the character of the infection as shown in the instances where injection into the gall bladder of virulent cultures produce severe cholecystitis and the injection of attenuated cultures may be followed by the formation of concretions, particularly if the flow of bile be hindered. Of course, it is not possible to state where the line may be drawn as to the condition in the gall bladder which may lead to the calculous and non-calculous inflammations. Clinically it is found that about 4 per cent. of the inflamed gall bladders do not contain calculi, and while the bacteriologic evidence does not appear to show that the infections differ, except in certain cases of empyema where a mixed infection has followed the traumatising or obstructing influences of stones, the infection is rather more than less in the non-calculous cases, and the other evidences of infection are even more marked.

To make our meaning more clear, we make the comparison between the calculous and non-calculous form during the formation of gallstones and not at a time when these stones, by trauma or obstruction, have set up secondary changes in the gall bladder or have invited a new or more virulent infection, or where incidentally a more virulent infection has occurred, in a pre-existent calculous gall bladder, when, according to the contention in this paper, gallstones cease to form on account of an influence exerted on the cholesterin secretion of the glands of the gall bladder.

Certain clinical facts and certain pathologic conditions appear to show that the infection in the non-calculous cases is more serious than the simple primary calculous varieties where the clinical evidence is the sudden, severe, classic, gallstone colic. The pathologic evidence lies in the thickened gall-bladder walls, the varying condition of the mucous membrane from a cholesterin crystal covering to a swollen, softened and, perhaps, ulcerated mucosa; the enlarged lymphatic glands of the common duct and in some cases a chronic, interstitial pancreatitis from the extension of the infection along the mucous membrane of the bile ducts to the duct of Wirsung and on into the pancreas, the organ becoming thickened and so dense as to give rise, at first, to the idea of malignancy. Not only does the infection extend outward, but not infrequently into the liver ducts, inducing a more or less severe cholangitis. In a certain number of cases it will be found that the infection has extended through the walls of the gall bladder and produced a pericholecystitis, as shown by adhesions particularly to the stomach.

The clinical evidence presented by non-calculous cholecystitis often leads to some confusion as to diagnosis. The clear and well-defined evidence presented by the passage of gallstones, the sudden onset of pain and its abrupt subsidence, and the prompt return of the patient to his former state of well-being, present quite a different picture from the more protracted sense of stomach sickness and pain in the region of the gall bladder.

Some degree of jaundice will be found in cases where the mucous membrane of the common duct is swollen, but is of short duration. Plugs of mucus may cause pain in passing through the bile ducts, but of less acute character than stones. The symptoms due to mechanical conditions, as the swollen mucous membrane of the common duct and the plugs of mucus, are supplemented by those of a more general character which are dependent on and are associated with infection as they involve the gall bladder, bile ducts, liver and perhaps the stomach and pancreas.

Chills and fever and pain in the region of the gall bladder and slight jaundice are not infrequently seen, but the jaundice is not very severe or very long continued, unless an associated calculous obstruction exists. The stomach attacks are more frequent and more troublesome than in uncomplicated calculous conditions, and if adhesions to the gall bladder exist some dilatation of the stomach may be found from interference with satisfactory stomach drainage. The symptoms due to the occasionally associated pancreatitis are too indefinite to be positively determined.

It is not intended in this discussion to include the phlegmonous forms of cholecystitis in which infection is so violent as to present the clinical picture and the pathologic findings of acute suppurative cholangitis, but rather the more chronic and less active forms of cholecystitis unattended with gallstone formation and with more or less frequent extensions of infection. In these cases the gall bladder is not contracted and there is no serious obstruction to the flow of bile into or from the gall bladder, and perhaps in the majority of cases the infection is confined to the gall bladder. In the milder forms there is no rise of temperature, or at least very slight, but the symptoms may be complex and lead to a doubt as to the exact diagnosis.

The results of operation in the milder cases of non-calculous cholecystitis are as good as in uncomplicated calculous cholecystitis. While in the more severe the mortality is higher and convalescence more protracted. In the milder cases a cholecystotomy with drainage for ten days results in a speedy cure. In the more severe infections a longer period of drainage is necessary, or it may be that a cholecystectomy is necessary. The more serious forms of infections are illustrated by the following case:

Case 1.—A woman, 35 years of age, had suffered for a number of years from obscure symptoms of gall-bladder disease. She would have a slight chill, followed by a temperature of 101 or 102, pain and tenderness in the region of the gall bladder, and would be confined to her bed for a week or ten days, after which she resumed her household duties, but never appeared to recover her health fully. She lost somewhat in weight. Examination showed tenderness in region of gall bladder and some dilatation of the stomach. A diagnosis of gallstones was made. On operation the gall bladder was found free from gallstones, the bile was thick and ropy, gall bladder inflamed and thickened and adherent to the stomach. The adhesions were separated and rubber tissue interposed between gall bladder and stomach and the gall bladder drained in the ordinary manner. A fair amount of bile drained and a favorable result expected, but in twenty-four hours the temperature had reached 103, in thirty-six hours 106, and death quickly followed. There was no peritonitis and the fatal result was attributed to a cholangitis.

A second case illustrates a type in which the infection is less severe, but which had extended in a chronic form more widely.

Case 2.—A man, 26 years of age, had had, four years previously, some attacks which had been diagnosed as gallstone colic, but for the past three years there were no distinctive attacks of pain, yet the stomach distress and nausea was more or less persistent, appetite uncertain and digestion much disordered. At times there was the faintest appearance of jaundice. Physical examination was negative and in the absence of evidence of disease of other organs it was determined that the gall bladder was responsible for the ill health. When the organ was exposed there was little in its appearance to indicate disease. It was moderately filled with bile and no stones could be felt. Its walls were somewhat thickened; the glands along the course of the cystic and common ducts were enlarged and at first communicated the feeling of stones in these ducts. The head of the pancreas was enlarged and firm, giving rise at first to the idea of malignant disease. The pathologic diagnosis was non-calculous cholecystitis with chronic pancreatitis from infection extending from the gall bladder. A somewhat prolonged drainage of the gall bladder resulted in a satisfactory recovery. Much anxiety was experienced for two weeks on account of a temperature from 101 to 103 degrees, which varied from day to day according to the amount of bile drained. Never before the operation while the patient was under our care had we found the temperature above 99.5. We do not attribute the temperature following the operation to any condition of the wound itself, but rather to an infection of the liver.

Our experience has led us to expect more temperature in these non-calculous cases than in uncomplicated gallstone involvement on account of the more widespread and more active infection. This seems to accord with general surgical experiences with operations in actively infected area. Our mortality from operations in this class of cases is even greater than in common-duct cases when the obstruction is not complete and when there has been no chills and fever. If in calculous cases chills and fever have occurred it may be assumed that an additional infection has supervened, or to the same cause and obstruction of the cystic duct, a pus formation and an empyema.

On theoretical grounds the cases considered in this paper indicate a cholecystectomy. In my opinion, it may be accepted as a rule that cholecystectomy is strongly contraindicated in all cases where there is a doubt as to the open condition of the common duct, whatever the condition of the gall bladder. In our cases of non-calculous cholecystitis both the cystic and common duct are freely open, except at periods of swelling of the mucous membrane, which are of comparatively short duration, and yet, notwithstanding this fact, infection has occurred and continued and spread out from the gall bladder at intervals, with greater or less degrees of intensity, to the liver ducts, common duct and even to the pancreas. The whole problem in treatment consists in drainage, and it may be assumed that, as the gall bladder is the chief center of infection, its removal would be the logical surgical procedure, and yet it may not be true that the additional advantage of external drainage may more than compensate for the general unsurgical procedure of leaving an infected structure which may, perhaps, demand a subsequent surgical consideration.

In deciding this question the surgeon will, no doubt, be governed by his ability to determine with absolute certainty if the common duct is equal to the exigencies of the case in affording all the drainage necessary. It would certainly be a much less serious mistake to leave a gall bladder that might safely come out than to take out a gall bladder that it much needed for drainage. The one could be corrected by a subsequent operation, while the other, it is feared, could not be corrected.

DISCUSSION.

ON PAPERS OF DRS. FRANK, HAGGARD AND FAIRCHILD.

Dr. A. MacLaren, St. Paul, Minn., predicted that Dr. Frank's statement would soon be accepted by all, i. e., that the liver is not a dangerous organ to attack, and that hemorrhage is not particularly to be feared. He considered Dr. Frank's flap methods for closing liver wounds very ingenious and very interesting. A simple over and over suture of catgut, passed with a large sized, full curved, round pointed needle and not drawn too tightly, has been found by Dr. MacLaren to control the hemorrhage very readily; if a wide V has been taken out, the raw surfaces must be brought together by transverse sutures of catgut placed in the same way. Recently three separate resections of the liver for gumma with simple over and over suture gave no bad results. Dr. MacLaren believes that the finding of gallstones in the feces is always associated with the presence of other stones in the billiary passages, as Dr. Haggard said. Jaundice is more common where a single stone is lodged in the common duct than where there are several. Dr. MacLaren recently found, after a careful study of his records, that he had operated on 10 cases of perforation of the gall bladder, two of which were of the non-calculous variety. Both perforations of the gall bladder were associated with small abscesses between the gall bladder and the duodenum.

Dr. Miles F. Porter, Ft. Wayne, Ind., although he admitted that the passage of gallstones usually means that there are more in the gall bladder, could not agree that it always means this. In two cases a number of stones were passed, and an operation showed that the last one had been passed. This is not of much importance, except from its politic side. It may be well to inform the patient that possibly the last stone has been passed. In any event, drainage of the gall bladder will usually be required. These cases may go on for a long period of time without symptoms to indicate the serious condition that is present. Dr. Porter has seen a case with a history of gallstone colic ten years before operation, and in the intervening time the woman had enjoyed good health, being free from symptoms pointing to the liver. Obstruction of the bowel finally called for operation, when the cause of the obstruction was found to be a large gallstone which had probably caused ulceration by pressure and this escaped into the bowel.

Dr. O. Grothan, St. Paul, Neb., considered it misleading to state that the passage of numerous stones by the bowel indicates that others will be found in the gall bladder. Six months ago he operated on a patient who for six or seven years had passed hundreds of stones, and in all this time at certain intervals had taken olive oil. He operated with good faith that he would find stones, but he did not. The gall bladder was very little thickened and the woman has been well since.

Dr. Charles M. Cooper, San Francisco, spoke from the neglected standpoint of diagnosis. We see many patients with pain in the upper abdomen; in some associated with vomiting; in others, not. The association is valuable as favoring the localizing of the seat of trouble in an abdominal viscus rather than in retroperitoneal structures, e. g., aortic aneurism in which there may be the most intense pain unassociated with vomiting. *Secondly*: Clinical re-examinations can not be made too frequently. The symptoms may be entirely masked at a first investigation, and yet a subsequent one may determine at once the organ involved. Thus, in a patient lately examined nothing abnormal could be detected. An equally full examination after a car ride over irregular streets demonstrated Head's area of hyperesthesia, a tender Robson's point, and pain associated with Murphy's maneuver. *Thirdly*: Mechanical stretching and relaxation of adhesions produced by change of position are of use. Certain movements or positions thus occasioning or relieving pain will sometimes suggest the organ involved and perhaps the nature of the lesion. *Fourthly*: Occasionally epigastric murmurs are associated with gall-bladder trouble, in some cases being directly due to a misplaced gall bladder, in others to a complication. *Fifthly*: The *x*-ray has a corroborative value in abdominal diagnosis. Dr. Cooper has plates which show liver tumors, a Riedel's lobe, a gallstone, shadows due to gall-bladder disease as proved by operation, and a fusiform dilatation of the aorta. The absence of leucocytosis during an attack of gallstone colic is by no means constant. Such attacks are often associated with septic absorption, and not infrequently there is marked leucocytosis which occurs quite quickly and disappears, as a rule, in a day or so, or may be in a few hours.

Dr. A. J. Ochsner, Chicago, emphasized the importance of making distinct flaps because on this depends to a great extent the ease with which the closure of the cut liver surface by first intention is accomplished. He also called attention to the importance of the formation of a clean surface. In a jagged, torn liver it is very much more difficult to stop the hemorrhage and to effect closure of the wound. A third point he mentioned is the slight amount of tension required in suturing a wound in the liver. If these three important points are borne in mind, it matters very little what else is omitted. The danger from hemorrhage amounts to very little if one comprehends these three important points. Dr. Ochsner said that there are a few points in Dr. Haggard's paper which should be emphasized. Acute obstruction of the common duct due to the pressure of stone should not be looked on as an emergency. There was a time when surgeons would operate on such patients at any hour of the day or night, and the mortality was very large. The patient practically always vomits bile before the obstruction becomes complete. This is due to an anatomic fact. The circular muscles of the duodenum are stronger at a point from two to four cm. below the entrance of the common duct than in any other part of this portion of the small intestine. Whenever there is an inflammatory condition, in any movable portion of the body there is some form of provision by which physiologic rest may be established. When anything passes through the duodenum at the entrance of the common duct there is a tendency for the emptying of bile into the intestines. The increased circular muscle fibers form a kind of sphincter which seems to serve the purpose of establishing physiologic rest when the common duct is inflamed as a result of the presence of a stone or sand in its lumen. Nature can be helped greatly in this matter, and the condition be changed from an acute to a chronic one. This can be accomplished by washing out the stomach and withholding food, so that there is no occasion for anything to be passed from the gall bladder through the common duct as the parts are put at rest. The acute condition will then subside. In many of these cases in which from one-quarter to two grains of morphia given hypodermically had no effect, the pain stopped within two hours after gastric lavage had been employed and did not recur so long as no food was given by mouth. It is well to prohibit the use of food by mouth until the acute symptoms have completely subsided and to operate before a recurrence of the attack.

Dr. J. H. Carstens, Detroit, drew on the blackboard a picture of an instrument invented by Dr. Ross. This instrument will get right under the gallstones. If necessary a couple of sutures may be inserted before using this instrument. Dr. Carstens had stated that he had trouble with the so-called gastroenterologists. They wash out the stomachs and give test meals; the patients are sent everywhere and are treated for acute gastritis. If Dr. Carstens had a case of so-called acute gastritis, with no other symptoms, he should at once decide that there was some gall bladder trouble. It may only be due to the bile being too thick, causing a partial stasis. This, he believes, is a gall-bladder disease, although possibly not gallstones.

Dr. W. J. Mayo, Rochester, Minn., said that after operations on the liver, the method of stopping hemorrhage based on the principle of Dr. Frank is well worthy of trial, and that he has practiced it with satisfaction in two cases since his attention was called to it. Dr. Dudley Tait has also brought out a method based on the preliminary injection of hot water into the liver along the line of proposed incision to stop hemorrhage. Dr. Mayo said that the whole question of gall-bladder surgery in connection with the common duct stone lies in the fact that when the disease is confined to the gall-bladder the operation is comparatively simple and will be followed by a very large percentage of permanent recoveries at a small risk, while, when the stones have entered the common duct the whole of the liver ducts are exposed to infection with possibilities of disastrous complications and secondary conditions. The operation is no longer simple, easy and safe. The question which the patient must consider is whether he can afford not only to continue to suffer from the gallstones but also to be exposed to the serious danger of liver duct infection or to the more remote but nevertheless possible chance of carcinomatous degeneration. In regard to jaundice, Dr. Mayo said that the history will usually show that there was more or less icterus at the time the stone passed into the common duct, although stones may remain in the common and hepatic ducts for years, without jaundice, giving manifestations of digestive disturbance. If the jaundice comes on without pain and does not change more or less in the early stages and especially if a tumor be present, malignancy is to be feared. With stones in the common duct the jaundice will be variable and changeable in the early stages, although later it may disappear entirely or become permanent from obstruction.

Dr. J. J. Hamilton, Caldwell, Idaho, related a case of a Scotchman who had some trouble with his gall bladder. A surgeon operated on him and removed 9 gallstones. Several others coming away from the wound from time to time a year later, the gall bladder again swelling up. The patient requested a young physician to operate on him without an anesthetic, and he refused to do so; the Scotchman returned home and operated on himself with a pocket knife. He removed several stones, made a good recovery and has since remained well.

Dr. Jacob Frank emphasized the importance of taking up liver surgery and putting it on a plane with appendicitis. In all the experiments on dogs there was no attempt to control hemorrhage, but he does not know how this would be in the human being. If there was a tumor situated somewhere along the lower border of the liver, and the operation was done quickly he does not think that there would be any danger to the patient. The dogs showed no signs of anemia. It is strange that there should be very little hemorrhage in liver operation. It looks like a great deal, but it is not, and simply bringing the flaps together controls it. Dr. Grile has explained to Dr. Frank why this is, stating that the blood pressure is very low in the liver. In bringing the edges together the capsule of Glisson is brought together.

Dr. W. D. Haggard said that when patients state they have passed gallstones, particularly those patients who have had the olive oil treatment, he always insist on seeing the stones, as these so-called olive oil stones are very frequent. The mortality is about 2 per cent. in stones of the gall bladder, and about 1 in every ten when the stones are in the common duct. It is not so much a surgical condition as one of cholemia. Operations should be avoided in acute obstruction of the common duct. Safety lies in the excellent preparation of the patient by preliminary treatment. Dietetic and other means must be employed, and the operation should be made a surface operation. If the gall bladder is used as a tractor, it is practically a surface operation.

Dr. D. S. Fairchild declared that it is the experience of many that some of the most serious difficulties arise in the cases in which there are no stones; the cases in which the infection extends from the gall bladder to the liver and pancreas, although this applies to only a very small percentage of cases. It should not be assumed that there are gallstones simply because symptoms are present which are referred to the stomach and gall bladder.

The "Vestiaire" of the Hospitals.—This is the name of a French society which recently held its first annual meeting. It was organized for the purpose of supplying comfortable and respectable clothes for persons just dismissed from the hospitals. As a rule, the poor reach a low ebb in their fortunes before they decide to enter the hospital, and they are financially stranded when they leave it, which interferes with their finding employment. The society already has over 4,000 members, and has collected 12,000 garments and a capital of nearly $4,000. Subscriptions and gifts of clothing are sent to the central office at Paris, rue de Grenelle 42. Debove, dean of the Paris faculty, is president of the new society.

SURGICAL BACTERIOLOGY OF THE MOUTH.*

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In this section, devoted as it is to stomatology, I think that we all must admit that the bacteriology of the mouth should play an important rôle. The subject is of importance to the physician because here we find local manifestations of many constitutional diseases, such as influenza, diphtheria, smallpox, varicella, measles, scarlet fever, tuberculosis, syphilis and scurvy, in some of which at least the specific micro-organisms may be found in the oral cavity. There are also a variety of pathologic processes which occur within the mouth or adjacent bones, many of which are due to pathogenic micro-organisms. Among these may be mentioned tuberculosis, actinomycosis, osteomyelitis, thrush, anthrax, erysipelas, ulcerative and gangrenous stomatitis, pyorrhea alveolaris, and caries of the teeth. To any one who is doing mechanical or surgical work within the mouth the subject is of interest because of the frequency and variety of germs encountered, and, as is well known, these germs may at any time, unless precautions are taken, infect the wounds made. This fact I have seen most painfully and forcibly illustrated by the death of two patients from a most virulent pyogenic infection following the extraction of a tooth.

With the inspired air, with the food and drink taken from our fingers and from foreign bodies introduced into the mouth, a great variety of pyogenic and pathogenic germs gain an entrance to this cavity. The natural warmth and moisture of the mouth, as well as the organic matter so frequently present, then make it a most favorable site for the growth of bacteria. This is true even in healthy persons who do not properly cleanse their mouths, but especially so in those whose oral cavity is the site of some pathologic process.

A very commendable work has been done in the bacteriology of the mouth by a number of investigators. Among these may be mentioned Miller of Berlin, Vignal, Fluegge, Sanarelli, Netter and others. These results have not been uniform, as one might readily expect, for even in the examination of healthy mouths there is a wide difference in the bacterial contents.

For the purpose of carrying on these investigations, the subject was divided into five parts. The first class included clean mouths; the second, ordinary kept mouths; the third, filthy mouths; the fourth, tobacco chewers' mouths, and fifth, mouths in which there were distinct pathologic processes.

In the examination of the first four groups, one hundred swabs were taken from different individuals, dividing them as equally as possible into the different groups. The first twenty swabs were taken from mouths which were sweet and clean and in which the teeth were well preserved and clean. These swabs were washed in a normal salt solution and then used as a medium for further study. First hanging drops were studied. In all instances the hanging drops showed thousands of bacteria of different forms and shapes. Micrococci were found in all of the mouths examined. These varied somewhat in size and number; the most frequent were staphylococci, which were present in every case examined, and in 15 of the 20 cases examined *Micrococcus tetragenus* was found, while in 6 of the cases sarcinæ were discovered; of the bacilli, all shapes and sizes were found. Some of these were motile and others non-motile. Some of them were spore-forming and others non-spore-forming; of the spirillæ, both long and short were found. These salt solutions were then plated on agar and gelatin and incubated for further study. On all of the plates the colonies were too numerous for study and it was found necessary to make dilutions of 1 to 100 in order to get the colonies fewer for individual study. These colonies were stabbed off and agar, bouillon, gelatin and Dunham's solution, lactose and glucose bouillon, fermented tubes, lactose and glucose agar shake culture made, besides milk and litmus gelatin. By a minute study of these cultures it was shown that thousands of bacteria noted in the first examination were innocuous and that all but the streptococci (noted in two cases); *Bacillus coli communis* (found in three cases); *Bacillus subtilis, Staphylococcus* (found in all the cases), and the *Micrococcus tetragenus* (found in fifteen cases, were non-pathogenic. Of the non-pathogenic germs a large number were acid and gas producers. Many, though, were species of putrefactive bacteria. There were also a large number of micro-organisms which could not be identified, but which seemed to correspond with those described by Professor Miller of Berlin.

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THE ORDINARY KEPT MOUTHS.

In making a study of thirty of these cases, they were found to differ from the well-kept mouths by the fact that the micro-organisms were much more numerous. This was especially marked where small pieces of putrefactive matter were present in the cavities of decaying teeth. The majority of micro-organisms in these cavities were, however, putrefactive germs, and, as they grow with great activity, they may kill out the other germs. In two of the thirty cases the bacillus of influenza was also found.

THE STUDY OF FILTHY MOUTHS.

In the majority of these cases there were pathologic processes going on in the mouth, such as decayed teeth, suppuration of the gums or small ulcers. In two cases thrush was present. In all of these filthy mouths millions of bacteria were present and a much larger per cent. were virulent. The pneumococcus was present in ten of the thirty cases. In the cavities of decaying teeth large numbers of acid producers and putrefactive bacteria were present. In the cases of pyorrhea large numbers of both *Staphylococcus pyogenes aureus* and *albus* were found. In three cases of abscess *Staphylococcus pyogenes aureus* was demonstrated. In two of these there was also *Staphylococcus pyogenes albus*, and in one *Staphylococcus pyogenes citreus*. In a large number of these mouths *Micrococcus tetragenus* was also present. In a great many cases putrefactive germs were well pronounced and gas formation very marked. The foul breath in these individuals is probably due to these obnoxious gases given off by the activity of these germs.

TOBACCO CHEWERS' MOUTHS.

An examination of these cases shows that the tobacco chewer's mouth is more filthy than the ordinary filthy mouth. The examination also shows that the tobacco had no restraining influence on the growth of bacterial activity. The majority of these mouths were pathologic and contained decaying teeth, small ulcers and suppurating processes about the teeth. It was not apparent that the tobacco was the cause of the decay, only that the individuals were less careful of the condition of their mouths.

BACTERIA SPREAD BY COUGHING.

Examinations were made to determine the number of bacteria thrown from the mouth in ordinary conversation, forced, explosive expiration and in coughing.

A plate exposed for two minutes just in front of the mouth during ordinary conversation showed 235 colonies. A plate exposed for one minute at the distance of five feet during forced expiration showed 105 colonies. A plate exposed for one-half minute at the distance of five feet during explosive expiration showed 192 colonies. A plate exposed at a distance of ten feet showed 35 colonies after five forcible coughs. A plate exposed at a distance of 20 feet showed a development of 23 colonies after ten forcible coughs. These examinations were made in a bathroom which had no ventilation and was practically free from germs, so that a plate exposed for five minutes in quiet showed the development of but three colonies. In other experiments plates were exposed at the distance of five feet and coughed at five times forcibly with one, two and three thicknesses of gauze in front of the mouth. The plate exposed with one thickness of gauze in front of the mouth showed a development of 156 colonies. The plate exposed with two thicknesses in front of the mouth showed a development of 35 colonies, and the plate exposed with three thicknesses in front of the mouth showed a development of 8 colonies.

EXAMINATION OF BACTERIAL CONTENT OF SPECIAL PATHOLOGIC PROCESSES.

Case 1.—A child 3 months old. A swab was taken one day after an operation for hare-lip, before cleansing the mouth. The swab showed the presence of *Staphylococcus pyogenes aureus* and *albus* and the *Micrococcus tetragenus* in large numbers. There were also many non-pathogenic bacteria. After the mouth had been cleansed by washing it out with peroxid of hydrogen in water, 1 part to 3, a swab was taken which showed the *Staphylococcus pyogenes aureus* still present, only in much fewer numbers.

Case 2.—Epithelioma of the lower lip. Swab taken before cleansing showed *Staphylococcus pyogenes aureus* and *albus* and *citreus*, the *Streptococcus pyogenes* and large numbers of putrefactive germs, as well as many non-pathogenic bacteria. After a thorough irrigation with normal salt solution, a swab was taken which showed an absence of the streptococcus; the diminution in number of the other germs, although they were still present in great quantities.

Case 3.—Carcinoma of the upper jaw producing ulceration of the gums. A swab taken before cleansing shows a large number of acid producers, putrefactive bacteria, *Staphylococcus pyogenes aureus, albus* and *citreus*, a number of streptococci and *Micrococcus tetragenus*. Large numbers of fungi of different kinds were also found on this swab. The swab taken after irrigation with normal salt solution showed little improvement in the bacterial content of the mouth.

Case 4.—Epithelioma of the tonsil. Swab taken before cleansing the mouth showed thousands of bacteria of all kinds and shapes. There were present the *Staphylococci pyogenes aureus, albus* and *citreus*, large numbers of *Streptococci pyogenes* and also the pneumococcus. The swab taken after the cleansing with normal salt solution showed a great reduction in the number of germs, but the pus cocci were still present in small numbers. The pneumococcus could not, however, be demonstrated.

Case 5.—Epithelioma of the cheek. Swab taken before cleansing showed a great number of germs of all sizes and shapes and also a great number of fungi, including yeast fungus. The majority of these germs were putrefying bacteria. The pus germs in this case were present, but not so numerous. After an irrigation with one-half gallon of normal salt solution through a fountain syringe, the swab taken showed but few pus cocci, while the putrefactive germs and the fungi were greatly reduced in number.

Case 6.—Sore mouth in child. Swab taken before cleansing showed numerous bacteria, some of which I was unable to identify. There were also large numbers of actively motile bacilli, as well as acid and gas producers. After cleansing with a mild antiseptic, but very few bacteria were found.

Case 7.—Sore throat. Swab taken before cleansing showed numerous staphylococci and long threads of streptococci. The swab taken after gargling for five minutes with a teaspoonful of an antiseptic solution in a small glass of water showed very few pus germs and these seemed innocuous, for they would not grow on culture media.

Case 8.—Acute pharyngitis. Swab taken before cleansing showed a large number of staphylococci, streptococci, also the bacillus of influenza and Friedlander's bacillus. Swab taken after cleansing with antiseptic gargle showed numerous staphylococci and streptococci, but these seemed innocuous, as there was but a single, thin growth of *Staphylococcus pyogenes aureus*.

Case 9.—Canker of the mouth. Swab taken before cleansing showed numerous forms of bacteria, including staphylococci and a large branching fungus. Swab taken after cleansing with peroxid of hydrogen was negative.

Case 10.—Patient had had both tonsils removed several days before examination. Swab taken before cleansing showed great masses of staphylococci and streptococci. The streptococci could not be cultivated. The staphylococci on cultivation proved to be *Staphylococcus pyogenes albus* and *aureus*. Swab taken after cleansing with peroxid of hydrogen showed only a small number of staphylococci which were grown with great difficulty and did not fully regain their power or growth until they were transversed three times onto fresh nutrient agar and incubated at 37 degrees.

Case 11.—Girl, 19 years of age. Patient has consumption and several cavities in one lung. Swab taken before cleansing mouth showed a large mass of bacteria, pus cells and epithelial cells. A simple covered glass smear stained for tubercle bacilli showed them to be present in large numbers. Besides, there were large groups of staphylococci and long threads of streptococci. There were also numerous ordinary forms of bacilli and fungi. The presence of pneumococcus was demonstrated. The swab taken after cleansing the mouth and throat with antiseptic showed staphylococci and streptococci, a few tubercle bacilli together with some pus cells. These germs, however, could not be cultivated.

Case 12.—Girl, aged 10 years. Part of tonsil, soft palate and part of posterior wall of pharynx covered with an adherent, grayish-white membrane. Swab taken before cleansing showed, besides numerous other bacteria, the presence of the bacillus of diphtheria. Swab taken after brushing with peroxid of hydrogen and then cleansing by gargling with a teaspoonful of peroxid in a glass of water showed numerous bacteria, including staphylococci and many bacilli, but none of them would grow.

Case 13.—Pyorrhea alveolaris. Swab taken before cleansing showed, besides large numbers of bacteria, most of which were gas and acid producers, the presence of masses of *Staphylococcus pyogenes albus* which was grown in pure culture. Swab taken after cleansing with lysol showed but very little change except in numbers, the bacteria growing quite as well after the cleansing as before.

Case 14.—Swab taken from a cavity in a carious tooth showed a great mass of bacilli and fungi. On cultivation, the bacilli were found to be composed of masses of the proteus group, of which the *Proteus vulgaris* was isolated and the *Bacillus acidi lactici* obtained in pure culture.

Case 15.—Sarcoma of the lower jaw with very little ulceration. Swab taken before cleansing showed, besides masses of pus cells and epithelium, large amounts of disintegrated tissue, also large quantities of bacteria, staphylococci and streptococci. The two latter seemed, however, to have lost a great deal of their virulence, for the putrefying germs soon outstripped them in growth. Swab taken after imperfect cleansing with a carbolized solution still showed the presence of bacteria of different sizes and kinds, but they would not grow, owing probably to the presence of carbolic acid.

Case 16.—First stage of pyorrhea. The swab taken before cleansing showed considerable blood and enormous masses of bacteria of all descriptions. These included *Staphylococcus pyogenes aureus* and *albus*.

Case 17.—This patient had his lower jaw resected two days previously on account of a sarcoma. Swab taken before cleansing showed masses of pus cells and epithelium, also masses of bacteria of all shapes and sizes, together with long threads of fungi. There were *Staphylococcus pyogenes albus*, also *Micrococcus tetragenus* and *Bacillus pyocyaneus*. A swab was taken after cleansing by rinsing with an antiseptic solution, and showed some diminution in the number of microorganisms.

Case 18.—Same patient. Swab taken before cleansing four days after operation showed about the same condition as previous instance, but the swab taken after thoroughly syringing the mouth with peroxid of hydrogen and then washing out with a normal salt solution showed no visible growths.

A study was then made of the comparative number of bacteria present in healthy mouths before and after different methods of antiseptization.

First.—Thoroughly scrubbing the gums with a stiff brush and warm soap water, afterwards rinsing thoroughly with a normal salt solution and rubbing with a sterile gauze from two to five minutes. This will render the mouth sterile in two out of five cases and will reduce the number of germs in the other mouths from thousands to only a few colonies.

Second.—Rinsing the mouth with mild antiseptics, such as boracic acid, thymol, 30 per cent. solution of alcohol or a weak solution of chloroform. It was found that simply rinsing the mouth had little effect on the bacterial content. This seemed to be due in a large measure to the secretions of the mouth, which come rapidly and neutralize the antiseptic used. If the mouth was first scrubbed well and then an antiseptic used, a practically sterile condition was obtained.

Third.—Disinfectants were next tried and the mouth thoroughly rinsed with either 1 per cent. carbolic acid solution or 1 per cent. solution of formaldehyd or a solution 1 to 10,000 bichlorid. After the rinsing, the mouth was scrubbed, using the normal salt solution, the result was found to be practically the same as in Number 1, that is the mouths were rendered practically sterile.

SUMMARY.

In twenty examinations of clean mouths, the greatest number contained staphylococci, 15 *Micrococcus tetragenus* and 6 sarcinæ; of the bacilli, all shapes and sizes, both motile and non-motile, spore-forming and non-spore-forming, and long and short spirillæ were found. Streptococcus was noted in two cases. *Bacillus subtilis*, *Bacillus acidi lactici* and *Bacillus butyricus* were also found.

In one instance *Bacillus prodigiosus* and in three *Bacillus coli communis* were found. In all the cases large numbers of gas and acid producers were found, also several species which could not be identified. In eight of the cases, the pneumococcus was found.

The study of ordinary kept mouths shows more bacteria than in well kept mouths, the putrefactive microorganisms being especially numerous. In two cases of this group the bacillus of influenza was found.

In the third group, the filthy mouths, are found many pathologic processes. In two there was thrush and the organisms of this disease demonstrated. In these filthy mouths millions of bacteria were present and a large number were virulent. The pneumococcus was found in ten of the thirty cases. In the cavities of teeth large numbers of acid producers as well as a great many putrefying bacteria were found.

In the tobacco chewers' mouths, no new organisms were found. In two special pathologic conditions, the *Staphylococcus pyogenes albus* and *aureus,* and the *Streptococcus pyogenes* were found. The *Micrococcus tetragenus* was frequently present. Acid and gas producers, putrefactive bacteria, sarcinæ and fungi were found. Numerous cocci, the yeast fungus, the bacillus of influenza and Friedlander's bacillus were isolated.

In diphtheria and in consumption the germs of these diseases were shown to be present in the mouth.

From the foregoing experiments, it is apparent that the number of micro-organisms, both pyogenic and pathogenic usually present in even healthy mouths is considerable. While in filthy mouths and in those which are the site of pathogenic processes, the number and variety of micro-organisms are greatly increased.

These experiments, though very incomplete, seem to indicate that mechanical means are most to be relied on in an effort to render the mouth sterile, and that the disinfectants, with a possible exception of peroxid of hydrogen, are of only secondary value.

DISCUSSION.

Dr. J. Marshall, San Francisco, said that those having any experience in handling fractures of the jaw, note that about 90 per cent. of all compound fractures of the jaw suppurate. He has operated on those patients without any more disinfecting than washing out the mouth, but has learned from experience that if the mouth is thoroughly cleansed and all salivary deposit removed, and the mouth thoroughly washed with an antiseptic solution, the appliances put in, followed by antiseptic treatment throughout, it is possible to reduce very materially the number of cases in which there is suppuration after the injury. He performs many operations for fractures of the jaw by suturing the jaw, and when he first began he did it with fear and trembling, thinking that in all probability he would get infection through the openings in the bones for the wire sutures. At first he thought that he had, but later found that the trouble originated before that. In most of these cases the patient is not seen for from a few hours to several days after the injury, and infection has already taken place. In cases lasting but twenty-four hours, he has only had 4 or 5 per cent. following compound fracture. He emphasized the fact that if mouths could be kept absolutely clean, dental caries, pyorrhea, inflammations, gingivitis and stomatitis of any kind would be impossible. He does not think we have yet reached the point where we really understand the value of clean mouths. He thinks that if more time were spent teaching patients the value of prophylaxis more good would be done. The work should be begun with children. It would prevent much trouble later on. In his work in the presidio at San Francisco Dr. Marshall found the mouths of the soldiers in a most horrible condition. He had some placards printed and put up in public places "Clean teeth do not decay," and others, "Do not ask the dentist to treat your teeth until you have brushed them." The difference in the condition of the teeth of those men who were there for some time was surprising. Many of them had never owned a tooth brush. After educating them awhile they came with clean mouths and with less disease.

Dr. G. V. I. Brown, Milwaukee, said that in the first place it is an interesting fact, known perhaps, but not considered sufficiently, that if one had been performing a surgical operation in those several mouths and could not or did not use antiseptics, he would probably, so far as pus germs are concerned, have better results in the dirty mouth than in the clean one. With Dr. Brown it is a grave question sometimes how much or how little good antiseptic measures do. Until someone can demonstrate that it is not valuable to disinfect he, of course, will continue on that line, but if those who have demonstrated that there are properties in this saliva or this mixed secretion that have a beneficial action in health, then of course it must be admitted that by the dilution of that fluid injury is done rather than benefit. Dr. Brown made some tests years ago in the following manner: Taking cultures from mouths that were not disinfected in any way—so-called dirty mouths—he, of course, got a great deal of bacteria. Disinfecting with bichlorid for a considerable time in some instances gave practically no result in cultures taken. Following this a solution of carbolic acid was used, stronger than he should want to use for operative purposes, and some essential oil, and after all this he was able to get growths from cultures taken from the same mouth by scraping away some of the superficial cells; he found living germs underneath. He found that he could get good results by using peroxid of hydrogen, which is also a germicide, but is superficial. By using this and then a germicide, he got better results. Mechanical cleaning, H_2O_2, and then a germicide gives the very best results. It is a foregone conclusion that a state of pure asepsis cannot be reached. Even if it were, at any moment it is likely to be disturbed by secretions of one kind or another. The only thing left to do, therefore, is to use as much mechanical force in cleansing as possible, and then to depend on the frequent use of dilute solutions of antiseptics and germicides.

Dr. M. I. Schamberg, Philadelphia, said that this paper should be a valuable adjunct to medical as well as to dental literature for the reason that it will recall the general surgeon to the urgent need for protecting the patient in laparotomies, brain surgery, etc., from infection from the mouth. Careful operators, who have spent much time in preliminary preparations are frequently seen to stand over a patient with open abdomen and describe the conditions there, and it is quite likely that they frequently cause infections with germs from the mouth.

Dr. M. L. Rhein, New York, said that Dr. Levings' views differ materially from our clinical experience with tobacco mouth. It has always appeared to Dr. Rhein that the consensus of views is that a tobacco mouth, other things being equal, will present a decidedly smaller number of colonies on examination than another mouth. It is known that however sterile the oral cavity is made the durability of that condition is extremely limited. The one practical point to Dr. Rhein has always been that with the average practitioner, whether he be distinctly a stomatologist or a medical man, failure in this respect is due to a lack of cleanliness. The advantage of a method approaching a condition of sterility as closely as possible is of undoubted value, and the whole point resolves itself into a question of time. The practitioner has not the time to devote to this purpose.

Dr. G. V. I. Brown, Milwaukee, declared that the value of experiments with regard to infection from mouths covered with gauze is far reaching. In clinics in some of the best institutions in this country, surgeons and nurses with rubber gloves may be seen and every possible precaution against infection is taken, and the surgeon, perhaps, may have a beard or moustache uncovered; at any rate his mouth has no special cleaning, and yet he will discuss the cause and talk right over the open abdomen. Some surgeons are more particular and do cover their mouths. The piece of gauze already prepared to drop over the mouth is advisable. Dr. Brown covers his face with several thicknesses of gauze. He thinks that this is a very important point and a great credit to the section.

Dr. John Marshall, San Francisco, stated that for the last few years in most of the large hospitals these precautions have been followed, the surgeons covered their mouths not only with one or two thicknesses, but with four or five, particularly when performing laparotomies.

Dr. Vida A. Latham, Chicago, asked Dr. Levings how he overcame the tremendous ingrowth of the sacromycetes group. Dr. Latham has just finished a number of experiments in the oral cavity and said that she has been practically overwhelmed with the yeast growth, and that the yeast organism is a prominent organism in the mouth. She also asked Dr. Levings what position he gives to the *B. coli communis,* and whether he is inclined to class it as an allied form to the streptococcus. It has been shown that the coli communis is allied to the pus group. If this is so, this is a cause of peritonitis, cellulitis, etc.

Dr. H. P. Carlton, San Francisco, asked what is the use of having training schools for dental nurses if there are no medical dentists.

Dr. A. H. Levings stated his belief that the bacteriology of the mouth is better understood, as it should be, by the dentist than by the physician, and that the former is a better judge of the bacteriologic contents of the mouth than are physicians ordinarily. He is not aware of any experiments that bear out the statement that the tobacco mouth has fewer organisms than any other mouth. He believes that these arguments are advanced by persons who use tobacco. He classes *B. coli communis* simply as a pus germ—as a pyogenic germ—one of the germs that are most frequently to be dealt with in the intestinal canal and in the abdomen, and certainly it is largely a pus germ. It is the cause of nearly all the pus abscesses in the abdomen. Dr. Levings has found it in many cases in pure culture in abscesses about the appendix, intestinal canal and gall bladder. The yeast germ, he believes, is not found in sufficient quantity to interfere with investigations. If experiments prove anything, they prove that all mouths are filthy, in the sense that they contain pyogenic or pus-producing micro-organisms. In order to render a mouth reasonably aseptic, it is necessary to do something more than gargle or wash; it must be scrubbed out, and on this point he disagreed with Dr. Brown that after rinsing and gargling the mouth masses of bacteria can be scrubbed off from the gums. These particles of foreign materials containing the micro-organisms must be detached by mechanical means, and after that the mouth can be made aseptic and can be kept practically clean by the use of antiseptics. In the education of the dentist, Dr. Levings believes that there are many branches of medicine which are practically useless, and that the prospective dentist is the only individual to be considered. What is good for the dentist is going to be good for the public. When the dentist is properly educated, he is in a position where he can deal most satisfactorily with the public.

THE ORAL MANIFESTATIONS OF DIABETES MELLITUS.*

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ST. LOUIS, MO.

Within the last twenty-five years, a vast amount of literature has been produced concerning the etiology, pathology and therapeutics of pyorrhea alveolaris, and, with it all, to-day we are about as far away from its true etiology as in the days of Celsus, who probably was the first medical writer to call attention to this ailment. To J. M. Riggs of Hartford, Conn., American dentistry is indebted for first calling the attention of the profession to this disease in 1869, although it must have been recognized by him as early as 1844. Rehwinkel is usually quoted as being the first (1877) to use the term pyorrhea alveolaris, a name which he borrowed from Albrecht of Berlin. This term, however, is of French origin and is employed for the first time in an article published by Toirac-Desirabode[1] in 1839, in which he speaks of the disease as *pyorrhea alveolodentaire.* Fauchard, in 1746, described this disease as a "kind of scurvy" and Jourdain (1778) seemed to be of the same opinion, although he more particularly emphasized the fact that a pyogenic destruction of the gingivæ and alveoli is concomitant with the other symptoms. Ever since innumerable names have been suggested by the various writers, usually christening the ailment according to their conception, with the most prominent symptoms, such as "cemento-periostitis" (Magitot), "arthro-dental gingivitis" (Galippe), "gingivitis expulsiva" (Marechal de Calvi), "caries alveolaris" (Essig), "interstitial gingivitis" (Talbot[2]), "*atrophia alveolaris præcox*" (Baume), "phagedenic pericementitis" (Black), "syphilitic locolosis alveolaris" (Curtis), "caries alveolaris idiopathica" (Greve[3]), "caries alveolaris specifica" (Arkoevy[4]), "blennorrhea gingivæ," etc., etc. At the last Union meeting of the American Dental Societies of Europe, held at Basel in December, 1904, W. J. Younker of Paris suggested these two names: "Alveolitis calcophagia" and "alveolitis calcica."

For convenience sake, we may define pyorrhea alveolaris as a chronic destructive inflammation of the pericementum, with more or less necrosis of the alveolus of the affected tooth. The causative factors of the disease, according to Miller, may be classified as follows: Predisposing causes, local disturbances, and bacterial infection. The predisposing causes are such factors which lessen the resistancy of the tissues to injuries, viz.: constitutional or local diseases, metabolic disturbances, tuberculosis, rachitis, scorbutus, syphilis, locomotor ataxia, chronic dyspepsia, malaria, diabetes mellitus, metal intoxications, and other disturbances. Some of these enumerated diseases do not produce definite symptoms in the oral cavity; others, again, manifest themselves in the causation of a distinct form of pyorrhea alveolaris, which, according to some clinicians, is classed as a prodromal sign of the primary disease. This seems to be especially true of diabetes mellitus.

Diabetes mellitus is a disease of impaired nutrition. Faulty metabolism, resulting from the materially reduced power of the body to burn up grape sugar, is the causative factor. Postmortem examination of diabetics usually shows very few or no morbid changes of the organs, with the exception of the brain. The sequence of this inhibition of chemical changes in the body is the presence of sugar in the blood of the diabetic which results from the diminished destruction of the sugar, and, as a consequence of this incomplete oxidation, oxybutyric acid, aceto-acetic acid and acetone are formed, which, with the sugar, are excreted with the urine. The nervous system being the controlling factor of the chemical changes in the muscle tissue, it seems proper to suspect certain disturbances which originate in the central nervous system as the primary factor of diabetes mellitus, the more so as certain pathologic signs point in this direction. The fact is verified by performing the classical experiment of Claude Bernard, which consists in puncturing the floor of the fourth ventricle mid-way between the auditory and the pneumogastric nerves. Thus, an artificial diabetes, which is to say, passage of large quantities of sugar with the urine, is produced which may last for several hours. It is a long and well-known fact that pathologic disturbances of the pancreas are responsible for the production of diabetes; von Mering and Minkowski operated on more than fifty dogs, and, when the complete extirpation of the pancreas had been successfully carried out and the animals had survived more than twenty-four hours, well-marked and severe diabetes was produced. If small pieces of the gland remained, however, no symptoms of diabetes are manifested.

According to our present conception of oral pathology, we may take this axiom for granted: There is no pyorrhea alveolaris without micro-organism. The normal oral cavity is inhabited by a rich flora of bacteria, both pathogenic and non-pathogenic. The great resistancy of the very vascular tissues to injuries holds the bacteria at a rather low ebb of virulence. According to Fluegge, however, the slightest interference with this normal resistancy, for instance, a simple pharyngeal catarrh, affords a ready field of attack and the pathogenic germs become extremely virulent. No specific micro-organism has, so far, been isolated as the true causative factor of pyorrhea alveolaris, although Galippe claims to have found and isolated two organisms. Pyorrhea results from a mixed infection; as shown by Goadby, however, the true pus-producing organism, viz., the staphylococcus aureus and albus are found only in about 10 per cent. of all the bacilli present. As before stated, these micro-organisms must necessarily find a *locus minoris resistentiæ* in the tissues of the oral cavity before they can obtain a firm foothold.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Toirac-Desirabode: Gazette des Hôpitaux, 1839.

[2] Talbot: Interstitial Gingivitis.

[3] Greve: "Caries Alveolaris Idiopathica." Oesterreich. ung. Vierteljahrsschrift f. Zahnheilkunde, 1904.

[4] Arkoevy: Caries Alveolaris Specifica Fulminans. Stomatologiai Koziony, 1905.

It is a well-known fact that diabetes mellitus lessens the resistancy of all the tissues of the body; diabetic gangrene and a tendency to form carbuncles are ample illustrations of this. So-called dry sockets, viz., ill-healing wounds resulting from the extraction of teeth, are frequently traced to existing diabetes. According to Naunyn, the pronounced tendency to local infection in diabetics may be partly explained by the ever-present sugar in the tissues, thus furnishing rich food to certain forms of schizomycetes. This may help to explain why thrush is so frequently seen in the mouths of diabetics. The best authorities on diabetes mellitus, such men as Kuelz, von Noorden,[5] Frerichs, Bunge,[6] Naunyn, etc., agree that no sugar is found in the saliva; however, a distinct acid reaction is usually observed in the oral fluids. This very acidity, to a large extent, is responsible for the increased sensitiveness about the necks of the teeth, which is usually a forerunner of rapid decay about this region. The circular ligament becomes swelled, and livid, it loses its hold on the tooth, and thus opens a ready gateway to the micro-organisms. The formation of pus pockets follows and concomitant destruction of the peridental membrane and necrosis of the alveolus results, with final loss of the tooth. The teeth of the upper arch usually are attacked in this manner prior to the lower teeth.

According to Arkocvy,[4] a distinct separation of the two upper centrals occurs which, as a pathognomic symptom, he has termed *diastema pathologicum*. The articulation of the arch is destroyed, and as a consequence of the force which is produced by the more firmer teeth of the mandible, in their curve of motion against those of the maxilla, the latter readily give and more or less prognatism results. The percussion fremitus of Landgraf,[7] which is observed by placing the finger over the end of the tooth root and tapping the tooth, forms a valuable diagnostic means of determining the progress of destruction of the alveolar plates.

The very rapid formation of calcareous deposits about the necks of the teeth in diabetics is another important diagnostic symptom. This "tartar" is usually of a light yellow color and rather soft to the touch. It is not confined to a group of teeth, but forms indiscriminately all over the crowns. The rapid formation may thus be partly explained: The saturation of the body with acids, according to Naunyn, calls forth an increased neutralization by the alkaline earths of the tissues which are largely held in solution by carbonic acid and poured out by the saliva. The CO_2 becomes liberated in the mouth and the precipitated lime salts are deposited about the teeth. The tongue of the diabetic is usually found thick, of a red color, and coated, showing the imprints of the teeth; the papillæ are enlarged. The mucous lining of the mouth shows a livid color resulting from the hyperacidity of the blood; the mouth is usually extremely dry. The typical odor arising from the breath of the diabetic is an important clinical symptom of the disease and is readily observed by the oral specialists. It is a peculiar chloroform-like odor, resembling somewhat sweet cider. This odor is due to the acetone compounds formed in the body. Of course, the most important diagnostic sign of diabetes is the presence of sugar in the urine.

A few therapeutic suggestions added to the summary of oral symptoms of diabetes mellitus may not be amiss. For general treatment the patient, of course, should be under close observation of the physician. The imbibing of large quantities of alkaline waters, such as Vichy, Carlsbad or Neuenahr, is recommended by the best authorities. Strict dieting is pre-eminent. von Noorden's "oatmeal cure" is much lauded by some clinicians. Very recently O. Conheim published encouraging results obtained by administering an extract of the pancreas; this report, however, is too early and too incomplete to be of practical value. The local therapy is the usual routine treatment, removal of all deposits, destruction of the pus pockets, fixation of the loose teeth, correction of malocclusion, and general prophylaxis. As long as the primary disease is present, however, comparatively little can be expected of the local treatment alone.

Special Article

IMMUNITY.

CHAPTER XXII.

TYPHOID.

Eberth first saw *Bacillus typhosus* in microscopic preparations of the mesenteric lymph glands and spleen of a typhoid corpse, in 1888. Koch also observed it at about the same time, and stained it in the intestinal wall, spleen, liver and kidney. It was obtained in pure culture by Gaffky in 1884.

The organism is rod-shaped, 0.5 to 0.8 by from 1 to 3 microns in dimensions, with nothing characteristic in its morphology. It possesses from ten to twelve flagellæ situated at the end and on the sides and is actively motile under suitable conditions. It forms no spores, is readily cultivated on many media, in which it sometimes forms long threads, and it is not stained by the method of Gram. The maximum growth occurs at the temperature of the body; growth is practically inhibited at from 9 to 15 degrees C.

Intestinal Groups of Bacilli.

The bacillus is one of the rather numerous "intestinal group" of organisms, certain members of which are similar in morphologic and cultural characteristics, and which can be differentiated only by means of special culture manipulations, by animal experiments, or by the agglutinating and bactericidal action of specific immune serum.[1] Several tests are often necessary for positive differentiation. The typhoid bacillus is a feeble producer of acid and ferments none of the sugars with visible gas formation. The colon bacillus forms acid vigorously and ferments various sugars with the production of gas. The paratyphoid bacilli are very similar to that of typhoid but differ in that they ferment dextrose with the formation of gas. The dysentery bacillus from the culture standpoint is almost identical with the typhoid bacillus, showing only the rather uncertain difference of a terminal alkalinity in milk; even this is not distinctive, because typhoid bacilli are sometimes met which produce a similar reaction. The *Bacillus enteritidis* ferments dextrose with the production of gas. The *Bacillus alcaligenes* always produces an alkaline reaction in milk. These points are mentioned only to illustrate the principles of culture differentiation of organisms which are similar in many respects. Even those which are most similar in culture media can be distinguished by properly performed agglutination or bactericidal tests with the corresponding immune serums. Before bacteriologic technic was so well developed at it is to-day, the typhoid bacillus, doubtless, was confused with these organisms in many instances. It is in fact less than five years since the organism of paratyphoid fever was identified as distinct from that of typhoid, in consequence of which the recognition of a new disease was possible.

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[5] von Noorden: Autointoxication.

[6] Bunge: Physiological and Pathological Chemistry.

[7] Landgraf: "Kritische Betrachtungen über Pyorrhoea Alveolaris." Deut. Monat. f. Zahnheilkunde, 1903. "Die Initialsymptome der Alveolarpyorrhea." Ibid., 1905.

[1] Of this group the bacillus of dysentery, paratyphoid bacillus, *Bacillus enteritidis* of Gärtner, colon bacillus and *Bacillus alcaligenes*, in addition to the typhoid bacillus, are the most important because of their similar morphologic and cultural properties and the pathogenicity of certain of them.

Habit of B. Typhosus.

So far as known, the typhoid bacillus does not flourish outside the body and its occurrence in nature is dependent on the distribution of the infected excretions of the diseased. Nevertheless, its resistance is considerable and it remains alive and virulent in water, earth, etc., for varying lengths of time according to the nature of its surroundings. It has been found to live for periods of from 2 to 4 weeks to 2 or 3 months in water, from 3 to 4 months in milk, from 3 to 5 months in surface earth, and from 11 to 16 months in sterilized earth; 100 days in ice, from 12 to 30 days in oysters, from 50 to 80 days when dried on clothing, for 3 months in typhoid feces, for 96 days in the dead body of an experiment animal. Its vitality may be retained for many months in a dried condition. When in water or moist earth which is heavily infected with saprophytic organisms, its life is shortened, and it is killed in a relatively short time in the presence of sunlight.

The organism has been cultivated from the earth and infected water, and from the feces, urine, blood, rose-spots and the various organs of typhoid patients. In many instances in which an epidemic has certainly been caused by an infected water supply attempts to cultivate the bacillus from the water have failed. The organisms may not have been included in the samples which were analyzed, or what is equally probable in certain instances, they have died out in the water by the time the disease was so widespread as to be considered epidemic.

Typhoid Epidemics.

Typhoid fever may become epidemic on a large scale in two ways: First, by water infection and second, by contact infection. When the epidemic has as its source infection of a common water supply there is something characteristic about the explosive-like suddenness with which dozens or even hundreds of individuals are stricken within a comparatively short period. This method of infection concerns large villages and cities, principally, the water for which is commonly taken from streams, small lakes or reservoirs. An ill-constructed out-house, or discharges thrown on the ground in the basin of the stream or reservoir are historic conditions which with the first rain or the melting of the snow have made possible the contamination of the water supply of a community. Miniature epidemics have been caused among groups of families which obtained their water in common from wells which chanced to become infected; in one instance typhoid stools had been thrown on the ground adjacent to the well.

There are authentic examples of limited transmission through milk which had been infected by the use of contaminated water in washing the cans, or by individuals in handling the milk. Fruit and vegetables may be infected by washing with contaminated water. It is strongly suspected that oysters infected from sewage have caused more or less extensive outbreaks of the disease.

An epidemic set in motion by infected drinking water or other means may be aggravated and generally prolonged by the occurrence of contact infections (indirect contact). The hands of the nurse, physician or attendant may become contaminated from contact with the stools, urine, soiled linen or skin of the patient, and the organisms, subsequently may be transferred to food, drinking water, or in other accidental ways may reach the mouth. Each new case is a fresh focus from which infection may be carried to others. The chances of milk and food infection become greater as the cases multiply. When the discharges are not disinfected or are improperly disposed of rather extensive soil or house infection may occur and the possibility of direct or indirect transmission by germ-laden dust becomes of importance. Dust infection from dried urine or feces may occur. Drop infection from urine, water, or the sputum of the patient is theoretically possible but would seem to be of minor significance. Flies may carry the organisms from open vaults or cesspools and deposit them on food or in drinking water. The importance of this has been appreciated in relation to epidemics in military camps. Typhoid bacilli have been cultivated from flies which were taken from the vicinity of infected material.

The Infection Atruni.

The micro-organisms gain access to the body through the lymphoid tissue of the intestinal tract (Peyer's patches and the solitary follicles). Rarely it is possible that other infection atria may be utilized. Primary infection of the lungs through inhalation of infected dust has frequently been mentioned as a possibility, but its occurrence is not definitely established. In this instance a typhoid bacillemia would precede intestinal infection or a condition of typhoid septicemia without intestinal lesions would stand as a possibility. It would seem essential for the occurrence of either of these conditions that some local lesion exist from which organisms could constantly be supplied to the blood. Neufeld doubts the ability of the organism to proliferate in the blood stream as in true septicemia because of the strong bactericidal power of the blood, and considers that infection takes place through the intestines even in cases of "typhoid without intestinal lesions."

Incubation and Variations in Virulence.

The incubation period is subject to considerable variations. In one instance in which 500 persons were exposed to infection from a well 13.5 per cent. developed the disease. Of these, 62 per cent. showed symptoms in from 20 to 25 days, 2 per cent in from 14 to 20 days, and 2 per cent. later than 30 days.

Typhoid bacilli cultivated from different cases vary greatly in their virulence. As previously stated, the pathogenic constituents of the organism reside in the bacterial protoplasm and are not excreted in soluble form. Toxic substances, it is true, may be obtained in solution by the autolytic digestion of cultures, extraction of ground-up organisms, or the cell juice may be obtained under high pressure, but it is currently believed that such preparations represent nothing more than the endotoxin which, through the disintegration of the cells, has gone into solution. Up to the present time, immunization with none of these preparations has resulted in the production of an antitoxic serum of accepted value. Certain French authors speak of a true soluble toxin.

Following the development of intestinal lesions the bacilli reach the circulation by way of the lymphatics, and through the action of the bacterial constituents of the blood (amboceptor-complement complex and possibly leucocytes) they are killed and dissolve in large quantities. It is now generally believed that only through the disintegration of the bacterial cells are their toxic constituents thrown into solution in the body, a condition which is necessary in order that the tissue be injured. Infection of the blood stream with living organisms, in the early stages of the disease and preceding relapses, occurs in such a large percentage of the cases that it has come to be recognized as more or less characteristic.

This promises to be an important point from the standpoint of early diagnosis, for they appear in the blood in ad-

A Point in Diagnosis.

vance of the formation of agglutinins; that is to say, the diagnosis may be established by culture methods before the agglutination reaction can be obtained. From 1 to 5 c.c. of blood are drawn from the median vein of the arm and planted into from 30 to 80 c.c. of suitable bouillon, which is then incubated for twenty-four hours and certain quantities of it plated out, or the bouillon culture may be used direct for the agglutination reaction with a known typhoid serum. Inasmuch as typhoid bacilli when freshly cultivated sometimes resist agglutination, it is necessary to supplant the agglutination reaction by the ordinary cultural tests. After from the tenth to the fourteenth day the organisms are commonly not to be cultivated from the blood; it is not improbable that the bactericidal substances of the blood have so increased by this time that the organisms are killed rapidly after reaching the circulation.

As stated previously, they are also found in the various organs, especially in the lymph glands, spleen and bone-marrow in fatal cases. In from one-fourth to one-third of the cases, in the third week, or during convalescence, the urine becomes more or less heavily infected with the bacilli. They may persist in the urine for many weeks after the subsidence of acute symptoms, with little to call the attention of the patient to the condition. Because of its frequent occurrence during convalescence, the process is not to be considered as one of excretion of the organisms from the circulation, but it seems more likely that they arise from metastatic foci in the kidneys—foci which were deposited perhaps at the time similar metastases occurred in the skin to cause the appearance of the rose spots. (Kanjajeff). More than 100,000,000 bacilli per c.c. may be present. The condition may be accompanied by cystitis, varying in degree from mild to severe.

Localization of the Bacilli.

Neufeld claims that the organisms exist in the tissue fluids of the rose spots, and that if they reached the skin in the first instance as metastases in the blood stream they soon become extravascular. They may be cultivated from the rose spots by inoculating media with scrapings from the surface; it is not necessary that the vessels be injured. The rose spot is due to the congestion of the vessels which surround the focus.

The cultivation of the bacilli from the spleen during life by the aspiration of blood from the organ by means of a syringe is not practiced because of the dangers involved.

The gall bladder is infected with considerable regularity during typhoid, and the organisms may proliferate in this situation for years. It has been suggested that reinfection may be caused by the passage of organisms from the gall bladder to the intestines. Typhoid bacilli have been found imbedded in the nuclei of gallstones.

Pneumonia, which develops as a complication of the disease, is commonly caused by other organisms, occasionally by mixed infection with the typhoid bacillus, and rarely by the latter alone. The organism has been found in the bronchial secretions. Serous or purulent pleuritis may be caused by the typhoid bacillus.

Bone lesions (necrosis, abscesses, periostitis), particularly in the lower extremities or in the vertebræ, occur frequently during convalescence, or rarely one or more years later. They may, but more commonly do not, suppurate. The "*Spondilitis typhosa*" of Quincke is thought to be accompanied by compression of the nerve roots by the serous infiltrate of the periosteum. It is thought that true myelitis may accompany, or follow typhoid, the cause being either toxic, or depending on a previous metastatic infection with the organism. Neuritis although the nervous system is characteristically the seat of is not uncommon. True typhoid meningitis is probably rare, intoxication. The typhoid bacillus is a facultative pyogenic organism and may cause abscesses without the aid of other organisms. In purulent lesions, however, mixed infection with the ordinary pyogenic organisms is commonly found.

From the above it would seem that the lesions which may develop during typhoid to a large extent are dependent on the distribution of the organisms, in contrast to the conditions in diphtheria and tetanus. Nevertheless, it appears that the lymphoid tissue and the central nervous system have a special affinity for the toxic constituents of the organisms. In the beginning, the intestinal infection is rather general, being characterized by diffuse hyperemia, a catarrhal condition of the surface and occasionally by minute hemorrhages into the mucous membrane. Very soon, however, their preference for the lymphoid tissue becomes manifest; that this preference depends on anatomic conditions is perhaps not definitely settled, but seems improbable. The vibrio of the cholera under similar conditions shows no such preference for the lymphoid patches.

(*To be continued.*)

Clinical Report

RECTO-UTERINE FISTULA.*

L. H. BERND, M.D.

PHILADELPHIA.

Patient.—Mrs. S., aged 33, married, housewife, was referred to me at the Italian Hospital, April 5, 1905, with the following history:

History.—Patient has given birth to eight children, three still living, five miscarriages; otherwise she never had any trouble. Her present trouble started five weeks ago, when she aborted a three months fetus. She was curetted by her family physician at that time.

Examination.—The woman is very pale and thin, complains of headache, backache, and a feeling of uneasiness in the lower part of the pelvis; also of a bloody fetid discharge. The perinneum is lacerated through the external sphincter. She has a slight cystocele and a large rectocele. There was no visible discharge, the patient having taken a douche. A unilateral laceration of the cervix could be felt, and the uterus seemed slightly adherent to the rectum. The fundus was enlarged and soft; the tubes and ovaries were in good shape and not markedly tender. Through the speculum a peculiar blood-stained discharge was seen, which had a putrid odor. Temperature was 99, pulse 88.

Treatment.—The patient was prepared for operation in the usual way. As she was being put on the table the nurse informed me that the fluid from the enema came out through the vagina. Careful search, under ether, elicited no opening between the vagina and rectum. An enema of milk was then given. The milk came out through the cervix. A sound passed into the uterus came in contact with the finger in the rectum through a small opening about a half inch above the internal os. A very gentle curettage was done and the uterus was packed with iodoform gauze. The cervix and perineum were then repaired. The packing was left in forty-eight hours. The bowels were moved on the sixth day by an oil enema. The recovery was uneventful, and the patient menstruated on April 18.

Subsequent History.—June 15, 1905, the patient came in and seemed well, except for an adhesion of the uterus to the rectum. She believed herself pregnant, about two weeks.

Remarks.—The case is rather unique. Rectouterine fistulæ are not mentioned in several of the text-books on gynecology. Guilliam mentions the possibility of such cases.

Carcinoma sometimes causes these fistulæ, also tuberculosis. In this case it was probably due to trauma, and, as the fistula was so low, the danger of infecting the peritoneum was greatly decreased. It is possible that the uterus was adherent from a syphilitic condition and that the curette had slipped through at that point when she was curetted by the family physician. My idea of syphilis in this case is due to her history and the syphilitic condition of one of her children. The husband also has rather a suspicious-looking nose, while he denies most emphatically any disease of that kind. It would be interesting to know the further history of this patient and whether or not the pregnancy continued to term, but she has left Philadelphia and I am unable to secure further data.

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INTRACELLULAR FERMENTS AS CATALYZERS.

A new insight has been gained through research in physiologic chemistry in the conception of the catalytic nature of intracellular ferments. By a contact substance chemists understand a substance which, by virtue of its presence (and without itself, or in the form of derivatives, appearing in the end-products of reactions), either initiates chemical reactions which otherwise would not occur (chemical "inoculation" or "infection") or accelerates or retards the speed of spontaneous reactions (catalysis). Thus in inorganic chemistry, as everyone remembers, the mixture of manganese dioxid with potassium chlorate accelerates the rate of oxygen liberation and the presence of platinum quickens the burning of hydrogen gas in oxygen at relatively low temperatures. In organic chemistry, ferrous sulphate, by its presence, hastens the oxidation of glycerin by hydrogen peroxid. These are samples of catalysis. It seems probable that for every chemical reaction substances exist which alter its speed. The search for these catalyzers offers a most inviting field for study.

The exact chemical constitution of the intracellular ferments is not known, but this does not hinder the investigation of their catalytic effect. Indeed, in pure chemistry an exact knowledge of the chemical nature of a catalyzer has rarely thrown any light on the character of a catalytic reaction. That such knowledge may be of great importance later is conceivable, but it need not make us pessimistic because we are now ignorant in this particular respect, and see no likelihood of enlightenment soon; there is enough to do at present in studying the relations of catalytic agents of unknown structure to the reactions they influence.

Physiologic chemists are now busy isolating the intracellular ferments from the cells of various organs. One organ may contain many different ferments; the liver, for example, contains more than a dozen of these substances. On the other hand, the same ferment may be present in many different organs, the same oxidizing ferments (aldehydase, for instance,) have been demonstrated in the lymph glands, spleen, thymus, lungs, brain, adrenals, testicles and kidneys.

The isolation of the ferments is by no means easy. Histologic methods are of no avail for the purpose; it is rather the method of the pharmaceutical chemist which has to be resorted to. Just as the latter, seeking the active principle of a vegetable drug, prepares various "fractions" by precipitation, extraction, etc., and tests each fraction to find out in which the active principle is to be found, so the ferment chemist goes to work with an animal organ which is known to be capable of carrying on a definite chemical operation. Most ferments can be obtained from minced organs by extraction with water, in which they form suspensions or colloidal solutions rather than true solutions. To these aqueous suspensions various precipitating agents are added. One ferment goes down with one kind of precipitate, another with another. No general rule can be predicated for the isolation; the ferment chemist has to try a whole series of reagents until he strikes the right one. After isolating the ferment, its quantitative activity has to be determined, and here the methods of physical chemistry have to be employed. This is why the investigator of ferment activity needs to be familiar with chemical mechanics, chemical statics and chemical kinetics—in other words, with the laws governing the phenomena of equilibrium and the velocity of reactions, and with thermodynamics. The effects of temperature, of poisons, etc., on the ferment follows on the simple study of reaction velocity.

The studies of the ferment chemist promise to be of the greatest significance for physiology and pathology. The whole field of internal assimilation comes within their scope, as do the problems of intermediary metabolism. Moreover, for the pathology of the so-called constitutional diseases and perhaps also for the solution of the problems of immunity, the chemistry of ferments and the study of catalytic reactions hold out great hope. Though the details of the methods are too complex to be grasped, perhaps, by the rank and file of medical men, physicians can not fail to be interested in gaining an intelligent understanding of the main points at issue; they will follow the results of research workers competent to investigate these problems with sympathy and expectation.

THE CAUSE OF WHOOPING COUGH.

The practical application by Widal of the principle that in bacterial diseases substances form in the blood which will agglutinate the bacteria causing the disease has led to important additions to the methods of bacterial diagnosis, and has rendered more certain, in some instances, the association of a given bacterium with a given disease. Notwithstanding the large number of diseases now held to be of bacterial origin, the number in which absolute proof of the relation of a given organism to a given disease has been brought forward is relatively small. If we accept Koch's postulates as a standard, and this is generally done by bacteriologists, there are many diseases now held to be bacterial in which absolute proof of this contention is lacking, and this is particularly the case in human diseases not transmissible to animals. It is just such diseases that the agglutination test is of the greatest value.

Among the diseases long considered bacterial, but never definitely proved to be so is whooping cough. For nearly twenty years various observers have described various bacteria in this condition, and since 1897, when Czeplewski and Hensel, and, independently, Koplik, described small-poled bacilli in the sputum, there has been a very close resemblance among the various organisms described. This latter fact made it appear more probable that the real causal agent had been found than if bacteria differing widely in their characteristics had been observed. Most of the observers, even in recent years, have failed to test the agglutinating power of the patient's blood on the organism which they considered the cause of the disease, and this fault has recently been remedied by Wollstein,[1] who has carefully investigated thirty cases. The studies of Wollstein show that if proper precautions in collecting and washing the sputum are taken the same organism can be isolated from practically all developed cases of whooping cough during the first seven or eight weeks of the disease. Before the whoop appears it may be impossible to isolate the bacteria, but after the diagnosis is no longer in doubt the isolation is not attended with great difficulty. The organism which Dr. Wollstein describes tallies very closely with those observed in recent years by the authors previously mentioned, and various slight discrepancies, hitherto puzzling, are doubtless due to improper technic, to the fact that the organism can only be cultivated on hemoglobin containing media, and to the occasional occurrence of similar organisms in healthy individuals. The pertussis bacillus resembles quite closely the influenza bacillus, though somewhat larger. It shows the same cultural peculiarities, and in agglutination tests there is evidence that the two organisms, while different, belong to the same group.

The association of one organism with whooping cough suggests, of course, the possibility that a serum treatment may be available; in fact, such a treatment has been described. As long ago as 1902 Leuriaux[2] gave an account of the successful treatment of sixty-six patients by an antitoxic serum. In view of the fact that the agglutinating power of the blood of various animals can be increased by inoculation with the pertussis bacillus, a serum therapy would seem to be one of the possibilities of the future.

THE PROTEOLYTIC INTRACELLULAR FERMENTS AND AUTOLYSIS.

It has been known for the last 15 years that animal tissues possess the power to break up the albumin molecule, independently of the action of the pepsin in the gastric juice and of the trypsin of the pancreatic juice. Salkowski, in 1890, proved that certain ferments in the liver and in the muscles, substances which could be extracted with water, are able to split up albumins with formation among other substances, of the two amino-acids—leucin and tyrosin. Salkowski spoke of the process as autodigestion, but the name autolysis, later proposed by Jacoby, is that which has been generally accepted. The latter author has been able to isolate the autolytic ferment by means of fractional outsalting. It has since been shown to exist in a whole series of organs, including the spleen, lymph glands, kidneys, lungs, stomach and thymus.

In order to demonstrate autolysis, the organ need not be washed; if the whole liver, or a portion of it, be removed from the body, under aseptic precautions, and so kept in the thermostat, intense autolysis results. This makes it seem probable that the autolytic ferment exists and is active during life within certain limits. Just what part these proteolytic catalytic agents exercise in intermediary metabolism, however, is not yet known. Proteolytic ferments have also been demonstrated in placental autolysis (Matthes) and in carcinoma tissue (Petry). They are increased in the liver in phosphorus poisoning (Jacoby) and may be responsible for the proteolysis of that organ which gives rise to the appearance of leucin, tyrosin, glycocoll, and phenylalamin, which are now known to be excreted in the urine during phosphorus intoxication. Interesting to clinical men is the fact that the pneumonic exudate, during the stage of resolution, is dissolved up gradually, owing to the action of a proteolytic ferment, resident within the cells themselves. Obviously, therefore, autolysis plays an important rôle in the cure of pneumonia (Müller and Simon). When pus breaks down in abscesses, the disintegration is due there also to an autolytic ferment (achalme).

The proteolysis carried on by these autolytic ferments is a hydrolytic cleavage. The chains of amino-acids of which the albumin molecules are built are split asunder owing to the addition of the constituents of water, a hydrogen atom going to one amino-acid molecule and hydroxyl going to the molecule next adjacent. This mode of digestion resembles what happens when proteids are split by pepsin and trypsin. The processes are not identical, however, whether or not the same ferments which split the albumin molecule into amino-acids can also, under other conditions, synthesize amino-acids into albumin, i. e., whether or not the reaction is reversible, as appears to be the case with lipose, the fat-splitting and fat synthesizing ferment, has not yet been ascertained.

PASSING OF PATHOGNOMONIC SYMPTOMS.

It seems very probable that the feature of the session of the American Medical Association at Portland, for which it will go down into history will be its clearing of the field of medical thought of a good deal of its trust in so-called pathognomonic symptoms. While it has been recognized for many years that the whole clinical picture is much more important than the recognition of any one symptom, however serious or apparently significant, the discussions on heart affections, on nephritis and on stomach diseases at the recent session emphasized the necessity for the clinical investigation of all sides of the pathologic condition present, rather than of any single symptom or even set of symptoms. This is the position that has always been recognized by conservative clinicians as most helpful in every generation. It constitutes the reason why practitioners of wide experience have frequently reechoed the old saw: "It is more important to know what sort of a patient has the disease than what sort of a disease the patient has."

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[1] Jour. of Exper. Med., vol. iii, No. 4.

[2] La Semaine Médicale, July 16, 1902.

In the discussion on heart disease, the old custom of attributing most cases of cardiac disease to rheumatism and of considering this as a sufficient explanation was called in question in order to insist again on the necessity for studying the various types of so-called acute rheumatism that may be present, especially from the standpoint of the pathologist. The declaration was made that not a few of the affections of the heart valves ordinarily attributed to rheumatism resemble those produced by septic conditions, much more closely than has been imagined. Renewed attention was called to the fact that gonorrheal rheumatism occurs much more frequently than was formerly thought, and that heart complications of this affection are not at all rare. From the standpoint of the clinician, it was emphasized that the surest sign of an affection being simple articular rheumatism is the fact that it leaves no mark in the joints and that as the joint tissues, in certain ways, are the analogues of the heart valves, it would be rather surprising if simple rheumatism produced as many heart complications as has been supposed. When the mark is left on the joints, usually some secondary affection has existed and it is to this that the persistent pathologic sequelæ are to be attributed. To a considerable extent, this same thing would seem to be true of heart affection. The necessity for careful investigation of each individual case so as to determine that no secondary infection has taken place will be the true criterion of progress in our knowledge of rheumatic affections and their complications.

With regard to nephritis, it was shown that the presence of both albumin and casts is not sufficient of itself to make the diagnosis of Bright's disease. Indeed, it is when the kidneys are healthiest, as, for instance, in the athlete—the long distance runner, or the oarsman—that casts are most abundant, if somehow sufficient irritation of the organ be set up in order to produce this reaction. On the other hand, it is when degenerative processes are early and active that albumin is likely to be most abundant. The real diagnosis of Bright's disease can not be made until after the changes in heart and arteries which constitute the danger signals of the affection can be recognized. Albumin and casts, either or both, may be present, under exceptional circumstances, for many years without the prognosis of the case necessarily being unfavorable. It is the whole condition of the individual that must constitute the basis of any proper estimation of the significance of the various symptoms in his particular case.

With regard to gastric diagnosis, practically the same conclusions were suggested as with regard to urinary examinations. A single examination in either case, no matter what its apparent significance, should not be allowed to be the main element in the appreciation of the patient's condition. Variations in gastric chemistry are especially likely to be illusory unless all the clinical symptoms of the case are carefully investigated. In general, supposed pathognomonic symptoms of stomach disturbance were stripped of their conclusive significance and shown to be only aids to diagnosis. some of them not of very great value. Only a careful study of all the pathologic conditions present, even of those quite apart from the stomach itself, serves to show what is the real basis for the symptoms present and what indications for treatment are afforded.

No better lesson could well have been impressed on the general practitioners of this country than this precious one of considering all sides of the clinical problem before coming to diagnostic conclusions. Snap diagnoses may seem very brilliant, but, in most cases. they are almost sure to be wrong, and even under the most favorable circumstances they only too frequently call exaggerated attention to some special feature of the case, and thus preclude proper consideration of complicating circumstances that may be of even more importance for the matter of treatment than the basic conditions so readily recognized. If the Portland session shall have driven home even to some slight degree this invaluable precept of studying each individual patient for himself rather than seeking to find the supposed pathognomonic symptom of his affection, then its effects will be far reaching, even beyond expectation.

THE YELLOW FEVER EPIDEMIC.

During the past week the fever has not spread so rapidly. Up to August 8 the total cases numbered 565 and the deaths 113, a mortality of just 20 per cent. Some new foci have been found in Louisiana outside New Orleans, and there seems to have been some concealment of cases. As appeared probable last week, the business men, acting with the local and state authorities, united in asking the President to direct the United States Public Health and Marine Hospital Service to assume full control of the efforts to check the epidemic. The commercial interests of New Orleans readily agreed to contribute the fund needed by the service in order to accomplish the heavy task assigned to it. In New Orleans and Louisiana splendid harmony of medical efforts continues, and the physicians of the rest of the country may well be proud of their fellows in the stricken city. The local profession and health authorities promise full and active co-operation with the federal service, of which Surgeon White is locally in chief command.

Already it is possible for us to speak with the greatest pride of the conduct of the citizens of New Orleans. Never has a community more readily or more generally accepted the advice of scientific physicians. With startling and admirable confidence in the newest teachings of scientific medicine with regard to the causation and mode of propagation of yellow fever, New Orleans has furnished the money and the volunteers necessary to carry on rational methods of exterminating an epidemic. New Orleans certainly has earned the respect of the world. Unfortunately there is a background to afford a contrast, for it could be wished that the same praise had been deserved by the neighboring communities. The profession must blush at the medieval quarantines that in some quarters have been raised against the afflicted city. Medical science yet knocks in vain at some doors, and "man's inhumanity to man" stands black on the pages of our newspapers. Even has it been so bad that medical members of local boards of health have resigned in futile protest against the adoption of brutal and irrational methods. From Mississippi comes tales of physicians forced to deny their diagnosis of fever; and the city council of Gulfport, Miss., as an emergency measure, passed an ordinance subjecting to a fine any physician whose report of a yellow fever case is incorrect. From such an environment the civilization of New Orleans shines out brightly, and we fully believe that in the next few weeks she is destined to give the country a salutary lesson of the success of civilized and scientific methods for exterminating epidemic disease.

THE BRITISH MEDICAL ASSOCIATION TO MEET IN CANADA.

At its recent meeting at Leicester, the British Medical Association accepted an invitation extended by the profession of Toronto to meet in that city in 1906. This will make the second time that the British Medical Association has met on this side of the Atlantic, the previous meeting being held in Montreal in 1897. We congratulate our Canadian brethren on having again succeeded in getting the Association to meet with them, and hope that the coming meeting will prove to be even a greater success than the one held in 1897. Toronto is very close to that imaginary line that separates the United States from Canada—a political and not a scientific line—and we have no doubt the great majority of our English brethren will step across this line and shake hands with us. All who do will certainly be welcome.

SUICIDE STATISTICS.

In *The Spectator* for July 27, 1905, Frederick L. Hoffman, the statistician, writes on "The Suicide Record of 1904." He bases his analysis on official returns from 50 American cities reporting 2,927 suicides in 1904. The rate per 100,000 of population is 19.5, which is the highest since 1890, when this annual tabulation was begun and when the rate was 12.0 per 100,000. The increase has been constant, and Hoffman describes it as one of the most dangerous tendencies in modern American life. The detailed results are mystifying, especially as to geographic distribution. San Francisco holds the "bad eminence" of leader in this race, the rate per 100,000 having been 23.7 in 1890, 49.9 in 1900, and 72.6 in 1904. On the other hand, Chicago in 1904 had a fall in mortality from this cause—20.6, as compared with 23.4, the average of the previous decade. Boston and Brooklyn also show a decrease, while Oakland, Hoboken, St. Louis, Indianapolis, Cincinnati, Orange and Pittsburg show very considerable increases. In New York, Milwaukee, New Orleans, Rochester and Buffalo the rate was stationary or showed only slight increase. Neither size nor climate will consistently explain such discordant facts. In the smaller cities some of the larger jumps in 1904 are probably accidental, and will very likely be compensated for in succeeding years. Hoffman thinks the increasing Jewish element in the population of New York accounts for the absence of an increase in the largest center of population. Despite fluctuations and offsetting conditions, it can not be denied that the figures show a gain in the suicide mortality. Abroad, Paris shows a marked fall in the suicide rate for the decade (in 1894, 42.5; in 1903, 26.7). Berlin holds second place among the world's great cities with a rate that varies little from 27.5 per 100,000, while London maintains a low rate—10.8—with only a slight increasing tendency. Hoffman thinks "we may anticipate a still further increase in the suicide rate of American cities in the near future." Perhaps he is correct in this evil forecast, but the premises for such a conclusion do not appear certain. At least, it may be noted, the figures from Paris show that it is possible for the suicide rate in a large city to reach a maximum point from which for some years there is a steady decline. In the light of so many vigorous efforts as are now in progress to improve the conditions of urban life, let us hope that the near future will witness, at least in some of our American cities, a fall in the suicide rate comparable to that still proceeding in Paris.

IDIOPATHIC RECURRING THROMBOPHLEBITIS

Thrombophlebitis is most commonly due to infective agencies, but cases have been observed in which the condition is attributable to the gouty or arthritic diathesis. In the latter circumstances, the occlusion of the vessel has exhibited a recurring tendency, successive portions of the vein being, in turn, involved in an ascending manner. The lower extremities are generally affected and there is little local and no general reaction. In another group of cases, the lesion develops in the absence of a recognizable etiologic factor, and the tendency has been to consider these cases, also, of gouty or arthritic origin. From this view Dr. John B. Briggs[1] is inclined to dissent, and he reports three cases, together with four from the literature, in which recurring thrombophlebitis occurred without obvious cause. In his opinion, the condition is to be attributed to phlebosclerosis, with the development of parietal thrombosis. In the way of treatment he recommends high ligation of the vein, with the object of eliminating the danger of embolic complication and avoiding protracted rest-treatment.

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[1] Bull. Johns Hopkins Hospital, June, 1905, p. 207.

Medical News

ILLINOIS.

Measles in Evanston.—Evanston is suffering from an epidemic of measles, of which 200 cases have been reported. The Evanston branch of the Chicago Medical Society has appointed a committee consisting of Drs. Sarah H. Brayton, Henry B. Hemenway and Stephen V. Balderston, to assist the local health department.

Farmers Doped and Duped.—It is reported that about 20 farmers in Lake County have been swindled by an alleged physician, who agreed to cure them of supposedly incurable diseases, and accepted in payment for his services notes payable one year from date. Medicine which was sent could not be taken and in due course the notes were presented for payment.

Personal.—Dr. Theodore A. Johnson, Xenia, has been reappointed sanitary physician of the city.——Dr. John S. Kennelley, Easton, was thrown from his buggy July 27 and fractured his left leg.——Dr. Robert J. Midgley, Wilmington, has started for Europe.——Dr. Richard E. Shurtz, Champaign, assistant surgeon, Ill. N. G., assigned Fourth Infantry, has resigned.

Holds License Law Not Retroactive.—The Appellate Court on August 6 affirmed the decision of the Kankakee County Circuit Court in the case against Dr. P. R. Langdon of practicing medicine without a license, deciding in his favor. State's Attorney Miller declares that the state will take the case up to the Supreme Court. Dr. Langdon declares that he was practicing in this state before the act was passed, in 1899, and therefore was not amenable. The case hinged around the word "begin." The act reads that physicians can not "begin" practicing medicine without first obtaining a license. The Appellate Court holds that the law does not apply to doctors who practiced before the act became a law, and the decision was accordingly handed down in favor of the defendant.

Chicago.

Deaths of the Week.—For the week ended August 5 the mortality was equivalent to an annual rate of 14.85 per 1,000, which contrasts unfavorably with 13.57, the rate for the previous week, and 12.78, the rate for the corresponding week of 1904. Of the 567 deaths, 170 were of infants under one year; 47 of children between one year and five years of age, and 91 were of individuals over 60. Acute intestinal diseases caused 129 deaths; consumption, 71; violence, 42; nephritis and heart diseases, each 38; cancer, 33, and pneumonia, 30.

Personal.—Dr. Wilfred H. Manwaring of Johns Hopkins Medical School, at present fellow of the Rockefeller Institute for Medical Research and assistant in pathology in the University of Chicago, has been appointed head of the new department of pathology and bacteriology in Indiana University, with the rank of associate professor.—Dr. Joseph P. Smyth has been re-elected high medical examiner of the Catholic Order of Foresters.——Dr. C. Hubert Lovewell has been appointed to supervise the inspection of passengers from the infected districts in the South at Cairo.

July Heat Increases Mortality.—July, 1905, failed to make good the promise of the early part of the month to establish a new record of low July mortality. The excessively hot weather from July 16 to 19 inclusive was responsible for an increase of nearly one-half over the mortality rate of the first fifteen days, which was only 11.04, while the rate for the week ended July 22 rose to 16.42 per 1,000. Of the 2,280 deaths 595 were of infants under one year; 211 of children from one year to five years of age, and 343 of aged persons over 60. Acute intestinal diseases caused 424 deaths; consumption, 279; violence, 189; nephritis, 157; heart diseases, 196; cancer, 111, and pneumonia, 126. The mortality for the month was equivalent to an annual rate of 13.48 per 1,000.

KANSAS.

Must Fumigate Schoolhouses.—The State Board of Health has issued an order that every schoolhouse in the state must be fumigated before the opening of the school term in September.

Health Board Elects.—At its annual meeting, June 27, the State Board of Health elected Dr. Joseph B. Carver, Fort Scott, president, and Dr. B. J. Alexander, Hiawatha, vice-president. The secretary, Dr. S. Jay Crumbine, Dodge City, holds over.

Now Has Bulletin.—Volume 1, number 1, of the *Bulletin of the Kansas State Board of Health*, appeared July 1. It is a neat eight-page periodical, and the initial number discusses health; gives the vital statistics for June, and prints an article on "The Disgrace of Typhoid."

State Medical Department Preparations.—A building in Kansas City has been leased for the medical department of the State University and lectures will begin September 6.——Two dispensaries have already been established.——The university has secured the use of St. Joseph's, Bethany, the German and St. Margaret's hospitals for clinical teachings for its students.

New Hospitals.—Larned is to have a new fifteen-room hospital.——The corner-stone of the new Allen County Hospital at Gas City was laid July 4.——The Mennonites are building a new hospital at Newton.——The contract for the erection of the Eleanor Taylor Bell Memorial Hospital Medical Pavilion at Rosedale was let August 1. The building will cost $15,000.——St. Mary's Hospital, Emporia, will build a portion of the structure, which will cost $15,000.

Personal.—Dr. Willard F. Jarrett, Fort Scott, has been appointed a member of the faculty of the medical department of the State University, Rosedale.——The governor has reappointed Drs. Earnest P. Mills, Olathe; Alexander B. Scott, Jetmore, and Jonathan B. Carlile, Leon, members of the State Board of Health.——Dr. Clarence C. Goddard, Leavenworth, has been appointed to the chair of nervous and mental diseases in the State University.——Dr. Frank Eckdall has been appointed local surgeon for the Santa Fe System in Emporia.——Dr. Charles H. Lerrigo has been appointed a member of the State Board of Health, vice Dr. Charles Lowry, deceased.——Dr. Charles S. Newlon, superintendent of the School for Feeble-Minded Youth, Winfield, has been deposed by the State Board of Control, and has been succeeded by W. C. Van Nuys, at present assistant superintendent of the Topeka State Hospital.

MARYLAND.

Personal.—Dr. William S. Welch was elected health officer of Annapolis, July 31.

Smallpox.—Two cases of smallpox are reported in Calvert County, which it is believed originated from Washington.

Hospital for Hagerstown.—The success of the project to establish a hospital at Hagerstown has been assured by the donation of six building lots, valued at $15,000 and a check for $5,000 from a gentleman of Williamsport. A fine property on Potomac Avenue has been secured for the site.

Half a Century in Service.—Dr. Joshua W. Hering, Westminster, celebrates this year the semi-centennial of his professional career. During this period he not only was an active practitioner, but served his state as senator, and as comptroller of the state treasury. He is president of the board of trustees of the Western Medical College, and received the degree of LL.D. from St. John's College in 1900.

Baltimore.

Bequests.—The Home for Incurables has received a bequest of $1,500 and the Church Home and Infirmary one of $1,000 recently.

Personal.—Dr. John C. Hemmeter is at Bedford Springs, Pa.——Dr. Leonard Turlington is at Fair Oaks, Va.——Dr. Isham R. Page is at Northport, Maine.——Dr. Harry E. Peterman is at Grant, Pa.——Dr. Arminius C. Pole is at Chautauqua, N. Y.——Dr. F. Randolph Winslow is in Alaska.——Dr. Eugene Lee Crutchfield underwent successfully an operation for appendicitis at St. Joseph's Hospital, July 31.——Dr. Dudley Williams has returned from Europe.——Dr. E. Jones Williams has been appointed health warden of the First ward, vice Dr. Jesse W. Williams, his son, deceased.

Would Equalize Qualifications.—Dr. David Street, dean of the Baltimore Medical College, calls attention to the need of high schools throughout the state that the youths of the country may enjoy advantages of education equal to those in the city. He demands that the legislature take action on this important matter, which has a practical interest at this time to the medical colleges, in view of the requirement of the Association of American Medical Colleges that, commencing with next session, all matriculants shall have had a four-year high school course. He calculates that the Baltimore schools will lose half their students by the enforcement of this requirement.

NEW JERSEY.

Hospital Open.—The first ward in the Italian Hospital, a Roman Catholic institition in Orange, is now open. The hospital is to be called the Hospital of the Immaculate Conception, and the ward just opened is known as St. Anthony's ward.

Personal.—Dr. Orange H. Adams, Vineland, was taken seriously ill August 1 with congestion of the spine.—Dr. Frank Neal Robinson, a member of the Camden City Council, was the guest of honor at a dinner August 6.——Drs. William Q. Clark and Nelson B. Oliphant, Trenton, are in Vienna.

NEW YORK.

Personal.—Dr. Willis E. Merriman, Jr., Albany, has been appointed resident physician at the Seton Hospital.——Dr. Frank E. White, senior house physician at Ellis Hospital, Schenectady, has resigned and will practice in the city.

Enforce Ordinance.—In accordance with the edict prohibiting holding of assemblages in Syracuse during the scarlet fever epidemic, the health inspector on July 31 dispersed a crowd of about 700 that had gathered to witness a tent vaudeville show.

To Prosecute Quacks.—The Schuyler County Medical Society recently adopted the following preamble and resolution:

Whereas, Schuyler County, and especially the village of Watkins, have become territory infested by quacks and fakers, who are constantly violating the laws of the state by prescribing and practicing illegally, and who, by their wholesale advertising, are robbing the unsuspicious, and who, by their superlative brassiness, ignorance and deception are endeavoring to put legal and respectable practitioners in contempt: therefore be it

Resolved, That the president of this society appoint two members to act with himself, thereby constituting a committee to be known as the legislative committee, and that they be and hereby are instructed and empowered to prosecute all persons in Schuyler County who violate the laws of the state relative to the practice of medicine and surgery; and it is further resolved that all expenses incurred by said committee shall be paid by the Schuyler County Medical Society.

New York City.

Bogus Doctor Sentenced.—Alfred Meyer has been sentenced to eleven months' imprisonment and a fine of $500, or to serve in prison one day for each dollar not paid for posing as a physician and swindling poor people.

Work for the Winter.—The New York Academy of Medicine has sent a communication to the members requesting that titles of papers to be read during the coming winter be sent to the secretary as soon as possible. It is requested that communications be condensed so that they can be presented in from eight to twelve minutes.

Contagious Diseases.—There were reported to the Sanitary Bureau for the week ended July 29, 342 cases of tuberculosis, with 141 deaths; 274 cases of measles, with 13 deaths; 166 cases of diphtheria, with 13 deaths; 141 cases of typhoid fever, with 18 deaths; 54 cases of scarlet fever, with 4 deaths; 21 cases of cerebrospinal meningitis, with 10 deaths, and 14 cases of varicella.

Death Rate Still High.—The death rate for the week ending July 29 was 20.68 per 1,000, which is more than seven points lower than that of the preceding week. There were 455 deaths, 204 less than the preceding week, and of these 27 were directly due to the heat. The deaths from cerebrospinal meningitis during the week numbered only 10, the lowest number for nearly a year.

The Staten Island Mosquito War.—Dr. Doty expresses himself as very much encouraged by the way in which the people of Staten Island have taken up the mosquito crusade. The appropriation of $17,000 asked for the purpose of draining swamp lands has been granted. Twenty thousand circulars have been sent out explaining the methods of getting rid of mosquitoes and of preventing their incubation.

Fear Typhoid Epidemic.—An increase in the number of typhoid fever cases at Coney Island is causing some apprehension. At least 15 new cases have been reported within the last three weeks. There are at present 8 cases of typhoid at the Coney Island Reception Hospital Dispensary and several cases have been transferred to the Kings County Hospital. The outbreak is attributed to polluted water, improper sewage or impure milk. Coney Island is supplied by the same water mains as supply Bath Beach, where typhoid has assumed unusual proportions since June 1.

City Hospital Plans.—Drawings of the plans for the improvements on North Brother Island have been received by the Board of Health which include an increased acreage of more than one-third. The plans include seven new pavilions, five additional isolation ward buildings, two chapels, a large home for nurses and a large storehouse. These improvements, including enlarging the island, will cost $1,500,000. When these plans are carried out the total capacity of the island will be more than 1,000 patients and the plant will be the most complete in the country. Permission has been obtained from the government to make the proposed fill-in.

The American Medical Special.—This excursion train, which left New York on June 24 and arrived there on August 3, after a tour of the West, is said to be the only excursion train in the history of railroading in this country which has made such a lengthy trip and reached home intact without accidents of any kind. The physicians from Greater New York on this train were Dr. and Mrs. Dexter Ashley, Dr. William Francis Campbell, Dr. John W. Parrish, Dr. and Mrs. L. Grant Baldwin, Dr. Thomas F. Reiley, Dr. E. Franklin Smith, Dr. J. Riddle Goffe, Dr. and Mrs. E. F. Hurd, Dr. and Mrs. John T. Nagle, Mrs. J. E. Houghton and Dr. Frederick Holme Wiggin.

Buffalo.

Fumigating School Books.—Work is now in progress of fumigating all the text books used in the public schools of Buffalo.

Personal.—Dr. Frank W. Hinkle has sailed for England.——Dr. Ludwig Schroeter is in the Thousand Islands.——Dr. Marshall Clinton has returned from a trip up the lakes.——Dr. Dewitt C. Greene has returned from a European trip.

Health Department Evicts.—The Health Department has caused many tenants in tenement houses to vacate for violation of the tenement house ordinances. About fifty families, or more than 200 persons, have been compelled to vacate.

German Hospital Staff.—The medical staff of the German Hospital has elected the following officers: President, Dr. Charles H. W. Auel; vice-president, Dr. Marcello Hartwig; secretary, Dr. Frederick Zingheim, and treasurer, Dr. John G. Meidenbauer. Drs. Wilhelm Gaertner and John V. Woodruff have been elected members of the staff.

The University.—The regular term of the medical department of the University of Buffalo will begin September 2. The following graduates of the class of 1904 have received hospital appointments: Buffalo General Hospital—Drs. Herman D. Andrews, Harry E. Brauer, Stephen M. Hill, Discum C. McKenney, Victor A. Pschellas and William J. Sullivan. Erie County Hospital—Drs. William H. Prudden, Arthur C. Schafer, Joseph A. Peaslee, Carl M. Fiero, Abraham Lande, George B. Jackson, Charles W. Bethune and Norton H. Good. Sisters of Charity Hospital—Drs. John M. Flannery, Eugene R. Luiklaten, George A. Bicker and Edwin Carlton Foster. German Hospital—Dr. Jacob Schwitzer.

Osteopathic Diploma Seller Arrested.—"Dr." John W. Banning, president of the Atlantic School of Osteopathy, has been arrested on the charge of issuing diplomas from the Atlantic School of Osteopathy, situated in Buffalo, without license from the State Board of Regents. This school has been in existence for a number of years and is said to have issued many diplomas. Coincident with the arrest of "Dr." Banning comes the announcement that Fred Williams is suing the school for $10,000 for alleged malpractice. Williams, it is alleged, went to the school last March for osteopathic treatment, being told his hip would be strengthened. Following the treatments an abscess developed which compelled Williams to be confined to bed and only now he can get about with crutches.

PENNSYLVANIA.

Personal.—Dr. Milton C. Dunnick, Stewartstown, has located at Newmarket, Md.

Typhoid Decimates Village.—It is reported that one-tenth of the population of Dundaff, Susquehanna County, is ill with typhoid fever, due to the use of water from contaminated wells.

Change of Staff.—On August 1 Dr. Thomas F. Nason assumed charge of the surgical ward of the McKeesport Hospital, and Drs. F. W. Rudolph, Allegheny; J. B. Fealy, New Philadelphia; W. C. Hiesey, Philadelphia, and George L. Howder, Elizabeth, took their places as house staff of the institution.

Want Record Cleansed.—The Medical Association of Monessen has begun civil proceedings in the courts to show cause why the registration of Samuel, otherwise known as Edward S. and Edward Barnes, should not be stricken from the records. He registered under the act of 1881 and recorded seventeen years of continuous practice from 1871 to 1888, as follows: Sandy Lake, four years; Jackson Township, five years; Sheakleyville, three years, and Stoneboro, five years, all in Mercer County. His registration was a few months previous to his conviction of arson and sentence to imprisonment in the Western penitentiary for nine years. It is the purpose of the association to show that this individual never practiced at these places, that he is a bad character and should be prosecuted to the limit. The physicians of Monessen invite all physicians who know of this man and who can give any evidence or the names of persons who could do so, to communicate with their attorney, A. M. Weyant, at Greensburg, or with the president of the association, Dr. Arthur R. Wilson, Monessen.

Philadelphia.

Personal.—Dr. and Mrs. Howard F. Hansell have gone to Lake Rosseau, Canada.——Dr. Alfred C. Whelen is spending part of August in Canada.——Dr. and Mrs. Thomas J. Orbison sailed for Europe on July 21.——Dr. O. Clayman Campbell sailed for Europe on the *Westernland*, August 5.

Hospital Report.—The report of the German Hospital shows that during the month ending July 20, 261 patients were admitted. Of this number 259 were discharged cured, 20 died and 162 remain at the hospital. During the same time 4,677 were treated in the dispensary, of which 1,298 were new patients, and 864 accidents.

To Protect Infants in Hot Weather.—A pamphlet entitled "Care of the Baby in Hot Weather" has been issued by the Bureau of Health, to be distributed by the assistant medical inspectors. It contains much valuable information for the guidance of mothers in the care of their children during the heated season.

Health Report.—During the week ended August 5 there was reported to the health bureau a total of 43 deaths, being an increase of 6 over those of last week and an increase of 55 as compared with the corresponding week of last year. The principal causes of death were: Typhoid fever, 8; whooping cough, 8; diphtheria, 4; tuberculosis, 52; cancer, 20; apoplexy, 15; heart disease, 34; diseases of arteries, 7; acute respiratory disease, 23; enteritis (under 2 years), 95; enteritis (2 years and over), 10; cirrhosis of liver, 7; appendicitis, 6; Bright's disease, 29; premature births, 14; congenital debility, 19; old age, 9; accidental injuries, 16; marasmus, 19. There were 166 cases of contagious disease reported, with 12 deaths, as compared with 123 cases and 25 deaths for the previous week. One hundred new cases of typhoid fever were reported for the week, as compared with 91 the previous week.

Impure Milk.—A bill was introduced in Common Council August 3, prohibiting the sale of adulterated or impure milk. The measure was referred to the committee on law. For all violations there is provided for the first offense a fine of $50, and for the second offense and subsequent offenses a fine of $100. For the enforcement of the terms of the ordinance an inspector of milk is to be appointed by the director of public safety, with the provision that a report is to be made to the Board of Health, the latter to furnish the newspapers with a full list of milk producers from whom samples have been taken during the previous month, with the results of the analysis and with notes indicating to what extent, if any, such samples were adulterated or otherwise altered or deficient. Four dealers accused of using adulterants in milk or selling skimmed for whole milk, were held under $300 bail each for court, August 4. Dr. Robinson of the Board of Health testified for the state.

Hospital Reports.—During the month of July there were 89 patients admitted to the Polyclinic Hospital; 101 were discharged, and 1,845 cases were treated in the dispensary.——The Presbyterian Hospital admitted 261 patients and discharged 267, 208 remaining August 1; 2,200 were treated in the dispensary.——The Women's Hospital admitted 108 patients and discharged 123, the number remaining August 1 being 76. In the clinics there were treated 521 new and 1,631 old patients, a total of 2,152.——Eighty-seven patients were admitted to the Methodist Hospital, 763 were treated in the dispensary and 2,843 visits were made to the dispensary.——In the Howard Hospital 279 accident cases were treated, 2,930 prescriptions were put up, 849 new dispensary patients treated and 31 admitted to the hospital.——The Medico-Chirurgical Hospital treated 211 house patients, 982 in the accident rooms and 5,117 in the dispensaries.——The German Hospital admitted 125 patients, discharged 110; number remaining, 72; 1,603 cases were treated in the dispensary.——In the Mount Sinai Hospital 3,903 patients were treated in the dispensary, 382 accident cases; admitted to wards, 72; discharged cured, 41; remaining at end of month, 31.——Number of cases admitted to St. Agnes' Hospital, 223; remaining in wards from last month, 99; discharged during month, 129; total number of patients in the hospital, 94; number of ambulance calls, 39; brought by patrol, 59; in the out-patient department there were 596 new cases, 2,122 old cases; radiographs, 15; massage and electricity, 154 cases.

TEXAS.

New College Building Almost Ready.—The new building for the medical department of Southwestern University, Dallas, will be ready for occupancy early in October.

New Officers for Hospital.—The directors of the Physicians' and Surgeons' Hospital, San Antonio, have elected Dr. Frank Paschal, first vice-president, and Dr. John S. Lankford, treasurer.

Many Treated for Rabies.—Dr. Benjamin M. Worsham, Austin, who is in charge of the Pasteur Institute, established a few months ago as an adjunct to the State Lunatic Asylum, reports that he has treated 65 patients, and that the institute has been more than self-supporting. Of the patients treated, 3 were bitten by skunks, one was bitten by a wolf, and the remainder were bitten by dogs rabid or suppposed so to be.

Personal.—Dr. Marvin L. Graves, San Antonio, superintendent of the Southwestern Insane Asylum, has resigned to accept the chair of medicine in the University of Texas, medical department, to succeed Dr. James M. McLaughlin. He has been succeeded by Dr. Thomas O. Maxwell, assistant superintendent of the State Lunatic Asylum, Austin.——Dr. John T. Moore, Galveston, associate professor of medicine in the State University Medical Department, has resigned.——Dr. George H. Prothro, Beaumont, sustained a cerebral hemorrhage July 20 and is in serious condition.

Hospital Notes.—A new hospital is to be erected at Temple by the Santa Fe Hospital Association.——The addition to the hospital at the Confederate Home, Richardson, for which an appropriation of $2,500 was made by the legislature, will soon be ready.——Dr. Leo E. Knopf is about to build a general hospital at Sterling City.——A donation of $5,000 has been received from McKinney for the Baptist Sanitarium, Dallas.——Temple Sanitarium has been incorporated at Temple with a capital stock of $20,000, by Drs. Arthur C. Scott and R. R. White, and F. K. Stroop.

GENERAL.

Yellow Fever Situation in Panama.—It seems to be the opinion of those in authority that the yellow fever situation on the isthmus is considerably ameliorated, and that Panama now needs only drastic sanitary measures.

Administration Buildings to Be at Ancon.—A cable from Panama states that as Ancon is the healthiest spot between Panama and Colon the Isthmian government has decided to construct there the administration buildings and residences for the governor and the employes.

Association of Obstetricians to Meet.—The American Association of Obstetricians and Gynecologists will hold its eighteenth annual meeting at the Hotel Astor, Longacre Square, New York, September 19-21. Dr. Robert T. Morris, 616 Madison avenue, New York, is chairman of the local committee of arrangements and will furnish further information on application.

American Public Health Association.—The thirty-third annual meeting will be held in Boston, Sept. 25-29, 1905. The secretary is Dr. C. O. Probst, Columbus, Ohio. Dr. H. P. Walcott, Cambridge, Mass., is the chairman of the local committee on arrangements. The subjects discussed will include: "Methods of Securing More Uniform Instruction and Co-operation in Health Work," "Water Supply," "Tropical Hygiene," "Porto Rico Anemia," "Yellow Fever," "Diseases Common to Man and Animals," "Military Hygiene," "Quarantine Methods," "Recent Researches in Smallpox," "Modes of Dissemination and Rational Quarantine in Epidemic Cerebrospinal Meningitis," "Disinfection," "Sewage and Waste Disposal," and "Car Sanitation."

American Academy of Ophthalmology and Oto-Laryngology.—The tenth annual meeting of this body will be held in Buffalo, Sept. 14-16, 1905. The secretary is Dr. George F. Suker, 103 State Street, Chicago. The chairman of the committee of arrangements is Dr. Alvin A. Hubbell, 212 Franklin Street, Buffalo, N. Y. Some of the forty-seven papers that are announced are on: "Formalin in Ear, Nose and Throat Practice," "Quinin Amaurosis," "Open Treatment or Dressing After Operation," "Glasses in Railway Service," "Retinal Changes as an Aid to Diagnosis in Vascular Degeneration," "Tubercular Iritis," "Bacteriology of Dendritic Keratitis," "Fallacies," "Radium in Diseases of the Throat," "Hay Fever Heresies," "Mastoid Operations," "Hemorrhage," "Failures in Ophthalmic Practice," "Teaching of Ophthalmology," "Diabetic Myopia," and "Cures of Migraine and Idiopathic Epilepsy by Glasses," etc., by Drs. Stein, Culbertson, Barck, Black, Woodruff, Keiper, Willetts, Freudenthal, Ewing, Stucky, Mayer, Gould, Alleman, Weeks and Wood, respectively.

THE YELLOW FEVER SITUATION.

REPORT FROM PRESIDENT OF STATE BOARD OF HEALTH—THE UNITED STATES ASSUMES CHARGE—PUBLIC HEALTH AND MARINE-HOSPITAL CIRCULAR.

Report from President of Louisiana State Board of Health.

In accordance with the request of The Journal, Dr. Edward Souchon, president of the Louisiana State Board of Health, very kindly sends the following report:

"The first intimation received by the health authorities in New Orleans of any case resembling yellow fever was on July 13, when two physicians reported to the president of the State Board of Health and to the city health officer jointly, two cases, one dead that day and the other dying, in which hemorrhagic vomiting, jaundice and uremic convulsions were present. Both cases were from the same locality, near the intersection of Decatur and Ursuline streets, in the second district of the city. In both cases autopsies were peremptorily refused. In the same section of the city, peopled almost exclusively by Italians, four more cases with similar symptoms were discovered within the next four days.

"In the absence of an autopsy it was not possible for the health authorities to make a positive announcement of yellow fever, but on July 18 the president of the State Board of Health informed the state health authorities of Texas, Mississippi and Alabama, and the surgeon-general of the United States Marine-Hospital Service, that cases presenting symptoms of yellow fever had come to his knowledge in New Orleans, and that an autopsy would be held at the first opportunity, also that all proper precautions were being taken. The Public Health Service detailed Surgeon J. H. White, on duty in Mobile, to come to New Orleans, where he arrived in company with Dr. C. A. Mohr, acting state health officer of Alabama, on the morning of July 21. The other states did not send any representatives. The visiting physicians were taken to see the fever patients under treatment, and they pronounced the cases to be clinically yellow fever. On the strength of this decision, which the president of the Louisiana State Board of Health immediately wired to the state health authorities of Texas and Mississippi, those states, following the example of Alabama, declared quarantine against New Orleans on the same evening, July 21. On July 22 an autopsy was secured on a case which died in the Charity Hospital, and in which the findings were positive, though not strongly typical. The interest of the medical profession of New Orleans and of the citizens being intensely aroused, an energetic house-to-house canvass of the affected district was begun. This work was greatly assisted by the co-operation of the Italian consul and certain public-spirited Italian priests and citizens of that nationality.

"Owing to the secretiveness and race prejudice of the people among whom the sickness prevailed, it was extremely difficult to get at the real facts. In some instances doors were found locked and barricaded and had to be broken down, discovering cases which had been concealed. This sanitary crusade caused an exodus of Italians, some of whom made their escape into the neighboring country, where they have developed cases of fever at eight or ten localities. In every instance these cases have been promptly discovered and proper steps taken to prevent the spread of the infection. In New Orleans the disease has been almost exclusively confined to the Italian populace, exceptions being a few people of other nationalities accidentally exposed in the infected district.

"Up to August 3 the record of cases, deaths and new foci has been as follows: Cases of fever, 432; deaths, 84; new sub-foci, 69.

"It is the belief of the Louisiana State Board that the infection was introduced by passengers arriving from Belize, British Honduras, prior to the announcement of fever there, May 24, by the representatives of the United States Public Health Service, up to which time, under clean bills of health issued by the American consuls, more than 200 passengers from Belize and Porto Cortes came through to New Orleans after April 1. Edmond Souchon, M.D.,

"President Louisiana State Board of Health."

Louisiana.

United States Assumes Charge.—On request of the governor of Louisiana that the United States Public Health and Marine-Hospital Service assume charge of the yellow fever situation, the President immediately offered any assistance in the power of the government. He also telegraphed Surgeon-General Wyman asking for a report on what the government might do in addition to what the local authorities were already doing. Surgeon Joseph H. White, who was placed in charge of affairs at New Orleans August 7, outlines his plans for combating the disease as follows:

> Our work will be an enlarged application of the system at present in force—taking the utmost precautions to prevent persons from moving while in a possible incubative stage and infecting new districts; a rigid application of measures destructive to mosquitoes to the whole of any infected vicinity; daily inspection of every person in every house where there has been a case of fever and a duplication in such houses of destructive measures for mosquitoes.

The first eight of the forty surgeons of the Marine-Hospital Service who were assigned to duty in New Orleans are as follows: Passed Assistant Surgeons Rupert Blue, Joseph Greene, John McMullen and Donald H. Currie, Assistant Surgeons William C. Rucker, Steger, Smith and Sweet.

Demand That Militia Be Called.—The State Board of Health on August 8 decided to demand that the governor call out the militia to protect travel through the parishes which have imposed drastic quarantine against New Orleans.

New Orleans.—At a special meeting of the finance committee, August 6, $250,000 was offered to the federal government to be used for labor and supplies by the United States Public Health and Marine-Hospital Service in fighting the epidemic of yellow fever.

Archbishop Chapelle, who had been indefatigable in his work among the yellow fever sufferers, was seized with the disease August 5, and after having been reported as past the crisis, died August 9.

The record up to the evening of August 7 was as follows: Total cases to date, 565; total deaths to date, 113; total foci of infection, 97. On August 7 there were 32 new cases, with 8 deaths from 4 new foci of infection. On August 8 there were 60 new cases, with 4 deaths from 17 new sub-foci.

Outside Parishes.—Nineteen cases of fever were found at Patterson, St. Mary's Parish, August 7. Several cases were also found at Sellers, in St. Charles' Parish, 3 cases at Shreveport, with 2 deaths, 2 cases in Bon Ami and 1 in Jefferson Parish.

Telephone Service Suspended.—At Arcadia and Baton Rouge telephone service is reported to be suspended on account of the panic among employes in the country.

Detention Camps.—The camps at Fontainbleau, Slidell and Wyman have been improved and enlarged to accommodate the increased number to be held in quarantine.

Other States.

Alabama.—No other cases have been reported and the one patient at Montgomery is convalescing. The state health officer says that the state law guarantees to fever refugees the right to open windows and to have food and water, and that localities which forbid this are violating the laws.

Illinois.—The secretary of the Board of Health on August 5 issued the following order to local health officials south of a line drawn from Vincennes, Indiana, to East St. Louis:

> The Illinois state board of health urgently requests your co-operation in the enforcement of its order pertaining to refugees from the south. No person from any district in which yellow fever has occurred or may occur in the future should be permitted to be permitted to enter Illinois south of the line above described western railway until ten days after he has left the said district. No person from a state in which yellow fever has occurred should be permitted to enter Illinois south of the line above described unless he presents a certificate of health from national, state or municipal health officers. The conditions in the south call for constant vigilance on the part of local health officials of southern Illinois.

The State Board of Health has ordered a restriction in the issuance of health certificates, which in the future will be issued only to citizens of Illinois or to persons vouched for by citizens of Illinois.

Illinois now has seven inspectors in Cairo, beside the secretary of the State Board of Health and his assistant. Dr. Egan reports that many are applying for health certificates.

Kentucky.—Kentucky will be an open state as far as refugees from the fever districts are concerned. The refugees will be subject to examination, however, and will be detained temporarily in camps near the principal cities and towns.

Mississippi.—In addition to the revenue cutter *Winona*, which is now at Gulfport; the revenue cutters *Forward*, now at Key West; *Hamilton*, now at Tampa, and *Seminole*, now at Wilmington, N. C., have been ordered to Gulfport to aid in the maintenance of the national quarantine.

Missouri.—The quarantine orders issued by the Missouri State Board of Health against districts infected by yellow fever will be enforced along the eastern border of the state as far north as St. Louis, along the entire southern border, and along the western border as far north as Kansas City. The medical inspectors will examine all who enter the state from the South.

The St. Louis Board of Health, beginning August 8, will inspect passengers on trains and steamboats arriving from districts infected by the fever. Provision has been made to care for from 300 to 400 patients at the quarantine station.

New York.—Two members of the crew of the *El Paso*, from New Orleans, were removed to Hoffman's Island, August 5, on account of high temperature.——One member of the crew of the *Ligonier*, from Port Arthur, was removed to Hoffman's Island at the same time for observation.——The man from the *Seguranca*, who was detained at quarantine on suspicion of having yellow fever, is improving, and it is thought that his trouble is nothing more than malarial fever.——One passenger and five of the crew of the *San Jacinto*, from Galveston and Key West, have been transferred to Hoffman's Island for observation.——William B. Smith, a pantryman taken from the steamer *Advance*, from Colon, on August 3 with nine other suspects, died from yellow fever August 6. This is the third case of yellow fever on ships entering New York this year and the second death. There are at present nineteen other persons who are detained because of high temperature.

Pennsylvania.—The British steamship *Barnton*, from Port de Paix, Haiti, for Chester, has arrived at the Delaware breakwater with fifteen of her crew ill with "malarial fever." The ship called at Colon before leaving Port de Paix, and after leaving this port she put into Inagua for medical attendance on account of sickness of two of the crew, who were put off at that place. None of the crew has been removed from the ship and the Marine-Hospital authorities have not disclosed the nature of the disease.

Director Martin, of the Department of Public Health and Charities, Philadelphia, has made arrangements for the establishment of a field hospital in the Thirty-third ward for the treatment of any case of yellow fever that may reach the city. Search has been made along the piers of the river front and among the fruit to see if any *Stegomyia fasciata* could be found. All vessels and those on board are daily investigated by the state and federal officers at the quarantine stations at Marcus Hook and Reedy Island.

The State Quarantine Board met August 4 to take action to prevent yellow fever entering the port of Philadelphia from New Orleans. The meeting was called by Dr. Dixon, state commissioner of health, and one of the objects of the meeting was to prevent cargo from any ship from New Orleans or vicinity from being landed there.

South Carolina.—The mayor of Charleston has proclaimed a quarantine against fever refugees, to take effect August 6.

Tennessee.—The urgent quarantine decided on by the Memphis City Council was put in operation at noon, August 7. Guards were placed in the city and inspectors on every train so that no one can enter the city without a permit from the local board of health.

General.

HOW TO PREVENT YELLOW FEVER.

The Board of Public Health and Marine-Hospital Service on July 31 issued a circular emphasizing the practical bearings of the mosquito theory of the causation of yellow fever. Part of it is as follows:

NO MOSQUITOES, NO YELLOW FEVER.

"The infection of yellow fever is carried by mosquitoes, and by no other means is the infection spread.

"Persons take the disease by being bitten by mosquitoes that have previously bitten a yellow-fever patient.

"The mosquitoes to become infected must bite a yellow-fever patient during the first three days of his attack. These first three days, therefore, are the most important time for preventing the access of mosquitoes to a fever patient.

"It is often difficult to decide during the first three days whether a patient has yellow fever; hence the necessity in threatened communities of placing a mosquito bar immediately around every patient who has fever of any kind, and for three days at least.

FACTS ABOUT SCREENING.

"1. The netting used should have meshes fine enough to prevent the passage of mosquitoes (at least 18 to 20 meshes to the inch).

"2. It is important to screen the windows and doors of the house. It is doubly important to screen the beds of fever patients.

"3. Mosquitoes can bite through mosquito nets when any part of the patient's body is in contact with the netting.

"4. Frequent examinations should be made to see that there are no torn places in the netting or that no mosquitoes have found a lodging inside.

"5. The netting should be well tucked in to keep mosquitoes from entering.

"6. If mosquitoes are found within the netting they should be killed inside and not merely driven or shaken out.

"7. All cases of fever should be promptly reported to the local health officer. Awaiting his arrival they should be covered with a mosquito bar.

FACTS BEARING ON MOSQUITO DESTRUCTION.

"1. Mosquitoes live in the vicinity in which they breed. They do not often fly a long distance.

"2. Mosquitoes breed only in water—usually in artificial collections of fresh water.

"3. The young mosquito, or wriggler, lives in water at least seven to twelve days.

"4. Although the wrigglers live in water, they must come frequently to the surface to breathe.

"5. Coal oil on the surface of the water prevents the wrigglers from breeding.

"6. Destroy the breeding places and you will destroy the mosquitoes.

"7. Empty the water from all tubs, buckets, cans, flower-pots, vases once every forty-eight hours.

"8. Fill or drain all pools, ditches, unfilled postholes, and the like.

"9. Change regularly every day all water needed in chicken coops, kennels, etc.

"10. Treat with oil all standing water which can not be screened or drained (1 ounce of oil will cover 15 square feet of surface). The oil does not affect the water for use if the water is drawn from below.

"11. Where oil is applied to standing water it must be distributed evenly over the surface.

"12. Put fine wire netting over cisterns, wells and tanks of water in everyday use.

"13. Places in which it is undesirable to put oil, such as watering troughs for stock, lily ponds, and so forth, can be kept free from wrigglers by putting in gold fish or minnows.

"14. Clean away all weeds, grass, and bushes about ditches, ponds, and other possible breeding places, since these afford a hiding place for the mosquitoes.

"15. Clean up vacant lots and back yards of all cans, tins, bottles and rubbish.

"16. First do away with, or treat, all places where mosquitoes are known to breed, and then begin to work on places where they might breed.

"17. Inspect and treat with coal oil gutters, culverts, ditches, manholes, catch basins, etc., along the roadside. Manhole covers should be screened.

"18. Houses should be cleared of mosquitoes by burning 1 pound of insect powder or 2 pounds of sulphur to 1,000 cubic feet of space. The mosquitoes will fall to the floor and should be collected and burned.

"19. Success in mosquito destruction depends on the co-operation of the members of the entire community.

"20. While the infection of yellow fever is carried by a single species of mosquito (the *Stegomyia*), to insure its destruction it is necessary to destroy all mosquitoes.

"In places liable to yellow fever both individuals and communities have an effective method of protecting themselves, as indicated above. Use the mosquito bar at once over all cases of fever until the danger from yellow fever has passed. Destroy all mosquitoes."

Paralysis of Fruit Trade.—Central American steamers are beginning to go back to New Orleans as the Mississippi ports have instituted a strict quarantine against them, and as edicts have been issued against them forbidding fruit trains to go through Mississippi towns.——The United States Fruit Company has already ordered four of its ships back to New Orleans on account of the increase in rigidity of the regulations at Mobile.

Train Service Suspended.—On account of the yellow fever all passenger trains have been discontinued between New Orleans and Houston, putting an end for the time to all through service on the Southern Pacific system.

Mimic War Ends.—The difficulty between the naval forces of Louisiana and Mississippi culminated on August 5, when the Louisiana naval reserves drove from the Louisiana waters the entire forces of the Mississippi quarantine patrol fleet.

Foreign Experts Are Coming.—Surgeon-Major Ronald Ross, I. M. S. (retired), professor of tropical medicine, and Dr. Rupert W. Boyce, professor of pathology and dean of the School of Tropical Medicine, Liverpool, sail August 12 on the *Campania* for New York, en route to New Orleans.

Suspend Cuban Mails.—The postoffice department wired a general order August 8, suspending the dispatch of mails via New Orleans, for the Canal Zone, Cuba and the Republic of Panama.

CANADA.

British Medical Association Coming to Canada.—The British Medical Association has accepted the invitation of the Canadian Medical Association and the local branch of the B. M. A. in Toronto to meet in Toronto in 1906.

Winnipeg General Hospital.—During the week ending July 22, the total number of patients treated in this hospital, was 311, of whom 186 were men, 98 women and 27 children. In the out-door departments 109 were treated.

Honors for Canadian Medical Men.—Mr. I. H. Cameron, professor of surgery in the University of Toronto, and Dr. Francis J. Shepherd, professor of anatomy in McGill University, attended the centenary of the Royal College of Surgeons of Edinburgh and were honored with the degree of LL.D.

Generous Gift to Toronto Hospital for Sick Children.—Mr. John Ross Robertson, proprietor and publisher of the *Evening Telegram*, Toronto, and founder of the hospital for sick children, has recently made a presentation to the hospital of $75,000 for a nurses' home, which will be erected immediately, on the property to the south of the hospital.

Personal.—Dr. F. F. Wesbrook, professor of bacteriology in the University of Minnesota, has been visiting in Winnipeg. ——Dr. Donald McMaster, Sydney, Australia, sailed for England from Montreal on July 28. He has been inspecting children's hospitals through the United States and Canada, in the interests of the Royal Alexandra Hospital of Sydney, which is to be built in the near future.

British Columbia Medical Association.—The annual meeting of the British Columbia Medical Association was held at Vancouver, B. C., July 18-20. Dr. W. D. Brydone-Jack of that city being the president. Among the many members of the American Medical Association who attended the British Columbia meeting after they had been at the Portland session was the President-elect, Dr. W. J. Mayo of Rochester, Minn., who delivered an address on surgery.

Toronto General Hospital.—The city council of Toronto have approved of a by-law to raise $200,000 for the Toronto General Hospital. There was some opposition to the vote owing to the fact that members of the staffs of other hospitals in Toronto opposed it, taking the ground that such a large sum should be voted on by the rate payers and that the other hospitals should share in the donation.——Dr. J. N. Elliott Brown, Toronto, formerly secretary of the Ontario Medical Association, and for the past six years medical health officer, secretary to the governor and gold secretary at Dawson, has been appointed medical superintendent of the Toronto General Hospital to succeed Dr. Charles O'Reilly. July 27 the trustees, members of the staff and nurses of the institution, were presented to Dr. Brown at an informal reception held for his benefit.

FOREIGN.

Plague in India.—The mortality from plague in India is declining throughout the empire.

Plague in Peru.—Ten cases of plague are reported from Paita, in Northern Peru, with three deaths.

Plague and Variola in Brazil.—According to *Public Health Reports*, bubonic plague and variola have formed a fatal alliance in Rio Grande do Sul.

Plague in Chili.—A cable report from Santiago states that on July 9 a case of plague appeared in Junin, and that a suspicious case occurred July 17 in Antofogasta. July 20 the isolation hospital for plague patients was destroyed by fire.

Plague in Japan.—No additional cases of plague have occurred in Japan (excluding Formosa). The prompt suppression of plague in Kagawa Ken, after the disease had gained such a strong foothold, reflects great credit on the sanitary authorities.

Famine and Cholera in India.—A cable from Madras on July 31, stated that cholera had broken out among the refugees from the famine-stricken districts who have been crowding into the city for weeks. The death rate from cholera is stated to be 89.7 per thousand.

New Morgue for Sydney.—It is reported that in view of the representations made by the Health Board of Sydney, Australia, the government has appropriated $15,000 for the erection of a new morgue. It is intended that the building shall be similar in design to the Paris morgue.

New British Red Cross Society.—Under the auspices of Queen Alexandra a new Red Cross Society has been formed to co-ordinate all those existing societies for the care of the sick and wounded in war. It is hoped that Sir Frederick Treves will consent to preside over the executive council.

International Congress of Criminal Anthropology.—The sixth International Congress of Criminal Anthropology will be held at Turin, April 26, 1906. In connection with the congress there will be an exhibition of instruments and apparatus for the diagnosis of physical malformations favoring or influencing the tendency to crime, as well as the various methods of detecting criminal acts.

Memorial Homage to a Peruvian Confrère.—The *Cronica Medica* of Lima gives a list of ten prizes, ranging from $6 to $20, to be awarded for articles bearing on the scientific work of Dr. Raimondi and his personality. The first four prizes are for works on due "appreciation of his studies in the inorganic world," and the next four for the same for the "organic world," and the other two for "the personality of Raimondi and the transcendency of his work." The jury is a large one and comprises engineers as well as physicians. The books and scientific collections of the "Raimondi museum" are placed at the disposal of the competing authors.

Yellow Fever in Guatemala.—According to a report by Acting Assistant Surgeon Peters of the United States Public Health and Marine-Hospital Service, malaria and yellow fever are the prevailing diseases in Livingston. From July 6 to July 15, 4 cases of yellow fever occurred, one of which terminated fatally. Dr. Peters states that other cases of yellow fever undoubtedly have occurred, but have not been reported. He states that the authorities, while denying that the disease is yellow fever, acknowledge that it is a bad fever and that it kills. At first they fumigated the houses in which these cases occurred, but lately have not been doing so.

A School for Mothers in Madrid.—The *British Medical Journal* states that a school for mothers has been founded in Madrid by the Marquis and Marchioness de Casa-Torre. The medical director is Dr. Ulecia, who has charge of a dispensary for sick and weakly children. He gives regular instruction to mothers, making each case as it presents itself the text of a discourse in simple language on the best manner of feeding and generally caring for the child. All the mothers are present so that all may have the benefit of the demonstration. If sterilized milk is considered necessary, it is supplied; food and clothes are also distributed to deserving cases.

The Munich Medizinische Wochenschrift in Court.—The secretary of a Bavarian medical chamber, Dr. H. Sternfeld, considered that he had a grievance against the *Münchener med. Wochft.* for certain circumstances connected with the publication of the transactions of his medical chamber (Oberbayerische Aerztekammer). He consequently sued the responsible editor for damages, but the suit was dismissed with costs both in the first court and in the court of appeals. The editorial comment on the affair is as follows: "The case is typical of the present state of sentiment among colleagues here in Munich. It shows how, in certain circles, a person will act directly contrary to all considerations of professional amity when it is a question of injuring a colleague who has fallen into private disfavor. Private letters not intended for publication were published abroad and a suit for slander built up on absolutely trivial grounds to injure a colleague who had acted solely in the exercise of his professional duties as editor of the local weekly medical journal."

Sanitary Conditions in the Argentine Republic.—It is stated in *Public Health Reports* that the sanitary conditions in this republic are very bad. During the last month terrible floods have been prevalent in portions of the republic, and many lives have been lost either directly as a result or indirectly as a result of illness among persons temporarily living without any shelter. In addition, the weather there has been very cold and rainy, and with heavy fogs. Many of the people living in the districts lately flooded by the heavy rains are now sufferers from pulmonary affections. This is especially true of the northern portions of the republic. In Santa Fe this state of affairs prevails to such a degree as to suggest the conditions of an epidemic of some serious disease. In Gualeguay the rise on the rivers and streams is of such an extent that the surrounding country is inundated to a distance of 25 kilometers. A dispatch dated July 29 states that by a decree of the executive government most important sanitary works for the betterment of the population have been ordered in the province of Santa Fe.

International Medical Association for the Suppression of War.—One of the first acts of this new society was to pass resolutions congratulating President Roosevelt on his initiative and his efforts to bring "two nations together which have been separated by an abyss growing deeper every day." Other resolutions adopted urged a formal declaration of war as the indispensable preliminary to hostilities. Also that it would be wise and humane to insist on an international control of the manufacture of arms and modern explosives. Also that international problems should henceforth be submitted for solution to two tribunals, an international and a humanitarian tribunal. The first, composed of delegates from the corporations, would pass judgment on the question at stake. The second tribunal would be formed of representatives elected by each nation, and this would decide the questions affecting international and humanitarian laws. As mentioned before in these columns, membership in this international association is restricted to physicians. The central office is 25 rue des Mathurins, Paris. Dr. J. A. Rivere is the president.

Public Manifesto of the Medical Profession in Belgium.—The national federation, which includes most of the medical societies of Belgium, has been moved to action by various grievances against the state, the last straw being the refusal of the government to allow the incorporation of the medical assurance company, as mentioned in The Journal, June 24, page 1996. The federation has now issued a manifesto addressed "to the government, to our fellow-citizens, in the name of the physicians of Belgium." It is published in full in the *Gaz. Méd. Belge*, June 22, with a preamble setting forth that the medical corps has never stinted its devotion to the institutions created in the interests of society. "It is always physicians who devote themselves and their energies and who take the lead in all the crusades against social plagues. The crusade against alcoholism, against tuberculosis and against infant mortality were started by physicians. Defenders of public hygiene, propagandists of all the reforms tending to the amelioration of the race, they have always felt in honor bound to place the interests of the whole above their private interests. But physicians are men, and as such they claim the right to live by their profession and not to be placed—on account of their profession—outside of the common laws framed for the benefit of all." The manifesto then takes up one by one various injustices inflicted on physicians by regulations which exclude them specifically from the rights of other citizens or impose special unremunerated duties on them. One of the eight clauses protests against a regulation, dating from 1903, which permits proprietors and insurance companies to send to the free public hospitals the workingmen injured in their service or insured in the societies. The public hospitals, the manifesto states, are made for the poor, not to relieve insurance companies of caring for their injured policyholders. The physicians of the public hospitals, who generally devote their services almost gratuitously, ought not to be burdened with the unremunerated care of these non-indigent persons. Clause 7 states that the number of unremunerated demands made on the physicians by the state is constantly increasing: declaration of diseases, compiling of statistics, free consultations, etc. The national and local administrations are so accustomed to relying on the devoted services of the medical corps that they never think of paying for any of the labor thus imposed. The medical profession believes that it is the duty of the government to take cognizance, in some way besides by mere platonic compliments, of the work constantly being done by physicians for the general welfare. Three-fourths of the entire burden of caring for the sick poor rests on the shoulders of physicians. The manifesto also refers to the refusal to incorporate *La Médicale*. "This society," it says, "grouped a large number of Belgian physicians, and by its powers and functioning it protected these confrères against the pretensions of ordinary insurance societies, insured them suitable remuneration and insured its policyholders prompt aid, prompt reparation and the free choice of physician. The refusal of the government to permit the incorporation of the society is an injury inflicted on the dignity and prestige of the medical profession and on its legitimate material interests." In conclusion the manifesto reiterates the fact that the physician's career is one of self-sacrifice and devotion. His hours are largely given to the poor and to promote the general welfare. He asks to be accorded the same rights as other citizens, at least. L. Merveille of Chênée, editor of the *Gazette*, is president of the federation, and heads the list of the signers, followed by the seven other officers.

DUBLIN LETTER.

The Irish Medical Association.

The annual meeting of the Irish Medical Association has come and gone, and all who attended it seem to have enjoyed a pleasant social gathering. It was held in famous Killarney, and was favored with good weather, so it was perhaps natural that those present succumbed to the *dolce far niente* influence of the place, and that the business which brought them together was somewhat neglected. Of the work actually done at Killarney there is little to record. It was decided to discontinue the publication of the "Irish Medical Directory," which had brought much discredit on the association. It was decided also to maintain the present standard of salaries in the Poor Law Medical Service in spite of the fact that it is disregarded by members and non-members alike.

The Coombe Hospital.

The annual meeting of the Coombe Hospital was held July 6. In the annual report it is stated that a total of 17,351 patients were treated in the hospital, and that only five deaths had occurred during the year. The maternity department has been much improved, a suitable waiting ward and a labor theatre having been added. The number of students attending the hospital had passed all previous figures, and many former students had returned for second or third periods of work. The number of probationary nurses also remained satisfactory.

The Royal Hospital for Incurables.

The Royal Hospital for Incurables, in existence for more than one hundred and sixty years, made a new move this year in summoning the first annual meeting of its friends and subscribers. The meeting, which was held at the hospital on July 6, was well attended. The report showed that of the 213 beds in the hospital, the average number occupied through the year had been 205. Of these thirty-nine were reserved for consumptive patients, and thirty-two for cancer. The result of the treatment of consumption in the hospital showed that even among the patients classed as incurable, healthy surroundings, careful nursing, and sufficient feeding were able to cause a great improvement in health and a prolongation of life.

Dr. Smyly Knighted.

The King has conferred the honor of knighthood on Dr. William J. Smyly, the well-known gynecologist and obstetrician. Dr. Smyly is an ex-master of the Rotunda Hospital, an ex-president of the British gynecologic society, and one of the leaders of the Dublin School of Midwifery.

Correspondence

Cocain and Adrenalin in Enucleation of the Eye.

Jacksonville, Fla., July 28, 1905.

To the Editor:—Hemorrhage during enucleation of the eye is often annoying from the moment of the first incision into the conjunctiva until the final separation of the globe from its attachment, and during the operation is frequently so profuse that special forceps have been devised for its control. If, as the patient goes under the anesthetic, a few drops of a 4 per cent. solution of cocain be dropped into the eye, followed in about five minutes by a few drops of solution of adrenalin chlorid 1-1000, it will be found that it will be necessary to use only a minimum quantity of the anesthetic, and that a most remarkable contraction of even the deeper blood vessels will occur, making the operation practically bloodless.

C. Drew, M.D.

Expulsion of Placenta Before Birth of Child.

Ladinas, Cal., July 19, 1905.

To the Editor:—In reply to Dr. Butt's question in The Journal, July 1, p. 60, permit me to report a case of twins occuring in my practice in New Mexico. The patient, Mrs. D., Mexican, aged 25, iv-para, was taken in labor 24 hours before I was called. I administered treatment for the uterine inertia present. About five hours later, a healthy child was delivered by the aid of forceps. In about ten minutes, the second child, in the vertex position, was delivered, pushing ahead his own placenta. He was somewhat asphyxiated but was easily revived, and two weeks later was more vigorous than the other. There was no more hemorrhage than in the ordinary normal case. I concluded that the uterus while contracting to expel the first child had loosened the second child's placenta which might have been placed very near the internal os. I have as yet been unable to learn of a living child who, without any serious hemorrhage, was delivered after its own placenta.

N. E. Richardson.

Marriages

Robert H. Goheen, M.D., to Miss Edith Ewing, at Wooster, Ohio.

Harry D. Murdock, M.D., to Miss Cathleen Crugo, Winton, South Dakota.

James L. Reilly, MD., Chicago, to Miss Caroline Lynch of Peru, Ill., July 28.

Isom H. Phipps, M.D., Needham, Ind., to Miss Bertha Mabel Cutsinger, July 21.

Harold S. Warren, M.D., to Miss Mary Patterson of San Francisco, July 23.

William L. Bell, M.D., U. S. Navy, to Miss Frances Thomas of Astoria, Ore., July 24.

Nils P. Hansen, M.D., Oakland, Neb., to Miss Ruby Latta of Tekamah, Neb., July 28.

Edward L. Burke, M.D., Culdesac, Idaho, to Miss Mae Thayer of Lyons, Ore., July 24.

J. Eliot Foltz, M.D., Hutchinson, Kan., to Miss Gertrude Harrison of Topeka, Kan., July 5.

E. E. Martin, M.D., Del Norte, Colo., to Miss Bertha L. Gregoire of De Witt, Iowa, July 7.

Frank M. Gordoy, M.D., Cusseta, Ga., to Mrs. Johnnie G. O'Neal of Columbus, Ga., July 26.

Bertram M. Bernheim, M.D., Louisville, Ky., to Miss Hilda Hess Marcus, at Baltimore, July 26.

Isadore Dyer, M.D., New Orleans, to Miss Mercedes Louise Percival, at New Orleans, July 31.

William Daniel Snively, M.D., Rock Island, Ill., to Miss Mary Willf of Philadelphia, June 21.

Josiah Morris Slemons, M.D., Baltimore, to Miss Annie M. Goodsill, at Plattsburg, N. Y., August 2.

Hamilton K. Derr, M.D., Hagerstown, Md., to Miss Louisa McCoy, at Washington, D. C., August 3.

Walter Eugene Vogt, M.D., to Miss Henrietta Whitney Parker, both of Brooklyn, N. Y., August 2

Halstead S. Hedges, M.D., Charlottesville, Va., to Miss Pernette Spencer, at Keysville, Va., July 26.

Henry W. Howden, M.D., Philadelphia, to Miss Helena Worsley, of South Bethlehem, Pa., March 21.

Walter B. Gossett, M.D., Louisville, Ky., to Miss Pattie Zollman, of New Albany, Ind., at Louisville, July 25.

Deaths

Thomas J. Maxwell, M.D. Medical Department State University of Iowa, Keokuk, 1861, a member of the American Medical Association; sometime president of the Iowa State Medical Society, member of the Military Tract Medical Association, Tri-State Medical Society of Iowa, Illinois and Missouri, Des Moines Valley Medical Association, American Association of Obstetricans and Gynecologists, and American Association of Railway Surgeons; professor of principles and practice of surgery and clinical surgery at Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa, and previously professor of state medicine and hygiene, anatomy, and obstetrics and gynecology in the same institution; during the Civil War assistant surgeon of the Third Iowa Volunteer Cavalry and surgeon of the One Hundred and Thirty-Eighth U. S. C. T.; one of the most noted surgeons of the middle west, whose method of treating intracapsular fracture of the femur added prominence to his name; died at his home in Keokuk August 1, from cerebral hemorrhage, after an illness of one week, aged 68.

O. Wellington Archibald, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1871, a member of the American Medical Association and of the Association of Military Surgeons of the United States; formerly acting assistant surgeon, U. S. Army, and superintendent of the Iowa Institution for the Feeble Minded, Glenwood, and the North Dakota Hospital for the Insane, Jamestown; a prominent oculist and aurist of St. Paul, Minn., who had been ill for a few days, fainted while taking a bath, July 28, and drowned, aged 60. The Minnesota State Medical Society and the Ramsey County Medical Society adopted resolutions of eulogy and regret, and Drs. John F. Fulton, Arthur Sweeney, Alexander J. Stone, and William D. Kelly of St. Paul, and Dr. Arthur C. Rogers, Faribault, acted as pallbearers.

James F. McShane, M.D. University of Maryland School of Medicine, Baltimore, 1870; vaccine physician, assistant health commissioner and from 1892 to 1897 health commissioner of Baltimore; associate professor of hygiene at the Baltimore Medical College; a member of the Medical and Chirurgical Faculty of Maryland, died at his home in Baltimore, August 1, from progressive paralysis, after an illness of two years, aged 53.

J. Francis Ross, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868; in 1876 vice-president of the Medical Society of the State of Pennsylvania; for many years assistant medical director of the Pittsburg and Western Railroad; died at his home in Clarion, Pa., July 28, from cerebral hemorrhage, after an invalidism of one year, aged 61.

James Hedenberg, M.D. Castleton (Vt.) Medical College, 1852, a member of the Massachusetts Medical Society and of the Middlesex South District Medical Society, for several years a member of the Medford school board; died at his home in Medford, Mass., from heart disease, July 26, after an illness of two years, aged 74.

Herman J. Schiff, M.D. College of Physicians and Surgeons in the city of New York, 1884, of New York City, member of the state association and county society, visiting surgeon to St. Marks Hospital and Mount Sinai Dispensary, died suddenly at Alexandria Bay, N. Y., July 24, from acute gastritis, aged 42.

Uriah Long, M.D. Bellevue Hospital Medical College, New York City, 1865, three times coroner of Colfax County, Neb., and twice city physician of Schuyler; a member of the state and county medical societies, died at his home in Schuyler, July 16, from cardiac dropsy, after an illness of a year, aged 75.

George W. Wackerhagen, M.D. College of Physicians and Surgeons in the City of New York, 1869, a member of the Medical Society of Kings County, and of the Brooklyn Pathological Society, and ex-president of the Brooklyn Surgical Society, died suddenly at his home in Brooklyn, July 25, aged 59.

Wiliam Henry Ellery Masser, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1880, formerly an officer in the Navy, and later on a practitioner of Los Angeles, Cal., died July 23, at the Good Samaritan Hospital, Sunbury, Pa., from intestinal obstruction, aged 53.

Alexander P. Nelson, M.D. Rush Medical College, Chicago, 1864, assistant surgeon of the Eighty-fourth Illinois Volunteer Infantry during the Civil War, died at his home in Kirkwood, Ill., July 19, from cerebral hemorrhage, after an illness of one day, aged 77.

Alexander T. Mitchell, M.D. University of Virginia Medical Department, Charlottesville, 1894, of Vicksburg, Miss., a surgeon in the navy during the Spanish-American War, died at St. Joseph's Infirmary, Lexington, Ky., July 18, after an illness of two years.

Francis Newton Gibson, M.D. Dartmouth Medical School, Hanover, N. H., 1861, assistant surgeon and surgeon of the Ninth New Hampshire Volunteer Infantry in the Civil War, died at his home in Lincoln, Neb., July 11, after a long Illness, aged 65.

Lewis Lynn McCabe, M.D. St. Louis Medical College, 1872, a member of the staff of Mullanphy Hospital, St. Louis, for twenty-five years, died at that institution July 27, from disease of the stomach after an illness of six years, aged 55.

P. Edward Anderson, M.D. Jefferson Medical College, Philadelphia, 1859, Surgeon of the Third Virginia Cavalry, C. S. A., during the Civil War, formerly of Rodophil, Amelia County, Va., died at his residence in Richmond, July 2, aged 67.

Alva H. Shelton, M.D. Cincinnati College of Medicine and Surgery, 1886, a member of the American Medical Association, died suddenly at his home in Long Beach, Cal., July 25, from cerebral hemorrhage, aged 40.

George M. Schweig, M.D. Bellevue Hospital Medical College, New York City, 1872, for many years in the service of the New York City Board of Health, died at his home in New York City, July 5, from heart disease, aged 63.

William J. McDowell, M.D. University of Maryland School of Medicine, Baltimore, 1874, a member of the Medical and Chirurgical Faculty of Maryland, died at his home in Baltimore from Bright's disease August 3, aged 51.

Jesse W. Williams, M.D. College of Physicians and Surgeons, Baltimore, 1890, a health warden of Baltimore, died at the City Hospital, Baltimore, from typhoid fever, August 1, after an illness of 20 days, aged 28.

Horatio F. Wood, M.D. Kentucky School of Medicine, Louisville, 1884, formerly of Chicago, died from paresis at the Illinois Eastern Hospital for the Insane, August 3, after an illness of four years, aged 43.

Robert A. Hardin, M.D. University of Louisville Medical Department, 1861, of Savannah, Tenn., died suddenly from heart disease July 31, at Elkmont Springs, Tenn., where he was spending the summer.

Palmer W. Roberts, M.D. Howard University Medical Department, Washington, D. C., 1883, of Washington, D. C., died in Garfield Hospital in that city, July 20, after a protracted illness, aged 63.

Robert H. Ramsey, M.D. Jefferson Medical College, Philadelphia, 1897, fell from a window in Clarksburg, W. Va., July 30, sustaining injuries which caused his death a short time after.

Peter Looney, M.D. Transylvania University Medical Department, said to have been the oldest physician in Henry County, Tenn., died at his home in Paris, July 26, aged 83.

Robert Walter Pearce, M.D. University of Louisville (Ky.) Medical Department, 1852, died at his home in Louisville, July 29, from senile debility, after a lingering illness, aged 75.

John M. Edwards, M.D., University of the State of Missouri Medical School, Columbia, 1883, died at his home in Bevier, Mo., July 31, after a brief illness from gastritis, aged 51.

Robert H. Hightower, M.D. University of Louisville Medical department, 1872, of Dublin, Ga., died at Atlanta a few hours after an operation for pyonephrosis, July 22, aged 50.

C. Paul Knight, M.D., Medico-Chirurgical College of Philadelphia, died at his home in Clinton, N. J., from tuberculosis, July 18, after an illness of fifteen months, aged 30.

James F. McDougall, M.D. State Certificate Tennessee, 1889, one of the oldest practitioners of Western Tennessee, died at his home in Savannah, July 15, aged 80.

John C. Mundy, M.D. University of Virginia Medical Department, Charlottesville, 1853, died at his home in Allen's Creek, Va., July 13, from heart disease, aged 75.

Walter S. Hay, M.D. Medical College of the State of South Carolina, Charleston, 1874, of Allendale, S. C., a Confederate veteran, died at Aiken, S. C., July 29.

Isaiah White, M.D. New York University, New York City, 1885, one of the oldest practitioners of Utah, died at his home in Salt Lake City, July 23, aged 77.

Samuel Pagin, M.D. Chicago, 1870, died at his home in Goshen, Ind., from cerebral hemorrhage, July 26 after an illness of four days, aged 76.

John Yauney, M.D. Albany (N. Y.) Medical College, 1857, died at his home in Ephratah, N. Y., July 24, after an illness of one year, aged 77.

George Ayres Hewitt, M.D. Jefferson Medical College, Philadelphia, 1877, of Philadelphia, Pa., died at Cape May, N. J., August 1, aged 57.

William W. Clark, M.D. Albany (N. Y.) Medical College, 1894, was drowned in a creek near his home in Maine, N. Y., July 26, aged 36.

Ferdinand G. Oehme, M.D. University of Leipsig, 1892, formerly of Roseburg, Ore., died at his home in Portland, Ore., July 23, aged 79.

David T. Kyner, M.D. Rush Medical College, Chicago, 1856, died at his home in Blue Mound, Ill., July 23, after a long illness, aged 72.

Wesley Light, M.D. Chicago, 1901, died at his home near Freedom, Ind., July 13, from paralysis, after a long illness.

Book Notices

Atlas and Text-Book of Topographic and Applied Anatomy. By O. Schultze. Edited with Additions by G. D. Stewart, M.D. With 125 Illustrations, 85 in Colors. Cloth. Pp. 189. Price, $5.50 net. Philadelphia: W. B. Saunders & Co. 1905.

In this one work an atlas and a text-book are excellently combined. It treats of the anatomy of the human body in its most practical aspects. The author well understands the method of clinical application of a knowledge of anatomy and the entire book is written with this in mind. The illustrations are exceptionally clear and are of a high order. There are many colored drawings of topographical relations which will be of great value to the general practitioner as well as to the surgeon. The translation is excellent and the American editor has added some instructive cuts.

An Introduction to Chemical Analysis, for Students of Medicine, Pharmacy and Dentistry. By Elbert W. Rockwood, M.D., Ph.D., Professor of Chemistry and Toxicology and Head of the Department of Chemistry in the University of Iowa. Second Revised Edition. Illustrated. Cloth. Pp. 255. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1905.

This work, now in its second edition, has been adopted by the author for his class work, and is designed for students in three branches of medicine, viz.: medical, dental and pharmaceutical. The exercises are interleaved with series of questions suggestive to further reference and study. The reactions are also chosen to illustrate chemical incompatibilities of medicinal substances as well as antidotes for poisons. Testing of water, detection of poisons and blow-pipe analysis are also included.

The Detection of Poisons and Strong Drugs, Including the Quantitative Estimation of Medicinal Principles in Certain Crude Materials. By Dr. Wilhelm Autenrieth, Professor in the University of Freiburg. Authorized Translations from the Third Enlarged German Edition. By William H. Warren, Ph.D., Professor of Chemistry, Medical Department of Washington University, St. Louis, Mo. Seventeen Illustrations. Cloth. Pp. 222. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1905.

This is a translation of the well-known German work and therefore retains the processes of the German Pharmacopeia, which the author suggests may be valuable for comparison with those of the U. S. Pharmacopeia. The distribution and elimination of poisons in the animal body are briefly considered, what organs should be examined, what alteration poison undergoes in metabolism, and in what form it is eliminated. Biologic methods used in detecting arsenic and human blood are also included.

The Influence of Growth on Congenital and Acquired Deformities. By Adoniram Brown Judson, A.M., M.D., Orthopedic Surgeon to the Out-patient Department, New York Hospital, 1878-1903. Profusely Illustrated. Cloth. Pp. 276. Price, $2.00. New York: Wm. Wood & Co. 1905.

This book is a brief review of orthopedic surgery with special consideration of the effect of growth. Dr. Judson quotes Hilton as saying that "repair is but the repetition of growth;" natural or artificial rectified growth may thus be counted on in the child or adolescent to substitute for repair, or to supplement it, in the treatment of orthopedic deformities and diseases. The author does not claim to present matter essentially new; the point of view, however, is new and instructive, and the ordinary features of classical orthopedic surgery are grouped around this center in such a way as to make the book interesting and useful.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

ALLEGED UNSCIENTIFIC STATEMENTS BY PHYSICIANS.

Dr. L. sends us a newspaper clipping which narrates the remarkable case of a woman who had "been sick from stomach trouble three months," and who was relieved during a "coughing fit" of a snake eight inches long. The paper says that "Dr. —— —— is the attending physician. He says Mrs. Smith probably swallowed a snake's egg while drinking water." Our correspondent asks: "Is it not time that such stories should cease? Or at any rate, the time has certainly come when physicians' names should not be published giving credence to such a physiologic impossibility as that of a snake's egg hatching inside a living stomach.

Answer.—It is never safe to charge up against a brother physician anything that a newspaper may charge him with doing or saying until the story has been reliably confirmed. White is often changed to black and yes to no in passing over the gossiping tongues of ignorant persons. On the other hand, in the case our correspondent submits, it might very well be that someone in this way is settling a grudge against the victimized doctor. As newspaper editors and physicians advance in educational attainments such instances will become rarer.

FEES OF ATTENDING PHYSICIAN AND CONSULTANTS WHO OPERATE.

——, August 1, 1905.

To the Editor:—I would like very much to have your decision in the following case: Dr. A. was called to see a case, and after careful examination pronounced it a severe case of appendicitis, and advised immediate operation. The family agreed, but desired consultation. Dr. B. was called in and agreed with the diagnosis. The family, however, insisted that Dr. B. should do the operation. Dr. A. agreed and assisted in the operation. The question now arises, is not Dr. A. entitled to the same compensation as Dr. B., Dr. A. having made the diagnosis and having assisted in the operation, and having treated the case until recovered?

Answer.—This query has to be divided. (1) So far as concerns the relative claims of Dr. A. and Dr. B., misunderstanding and friction can only be avoided by frank agreement, preferably in advance, between the physicians and the person who is to pay the bills. Each such case must be settled on its merits by those interested. In the present instance, if it is the patient who refuses properly to recompense Dr. A., let Dr. A. and Dr. B. together agree on proper fees, and in a friendly way lay the matter before the patient, if need be calling for help from the county medical society. If Dr. B. objects to Dr. A. charging an equal fee an impartial medical arbitrator should be asked to adjudicate the case. It is important to present a united front and to secure a good reasonable compensation for professional services. (2) How nearly equal in a given case shall be the fees of the operating surgeon and of the family physician who makes the diagnosis? Everywhere the profession is wrestling with this problem, but no universally applicable solution has yet been propounded. Perhaps the internist and the surgeon never will quite agree, but for the good of the guild they must seem to. There is a strong and growing sentiment that favors a fee for the family physician commensurate with that of the surgeon whom he calls. A few internists already are able to maintain this position, but the public is not yet generally sympathetic. It is this demand that has led some to adopt that wretched makeshift—the wholly immortal secret division of the surgeon's fee. Direct dealing must and will prevail. Dr. A. and Dr. B. should be members of their county medical society, and they and their society should face the question, deciding on the approximate solution that is locally most applicable.

Association News

Official Minutes of the Sections.

The following are the official minutes of the Section on Stomatology, the Section on Laryngology and Otology, and of the Section on Pharmacology and Therapeutics at the Portland Session, July 11-14, 1905. The minutes of the other sections were printed July 29. The minutes of the House of Delegates and of the General Meetings were printed July 22.

Section on Stomatology.

TUESDAY, JULY 11—AFTERNOON.

The Section was called to order at 2:40 p. m. by the Chairman, Dr. Vida A. Latham, Chicago.

The report of the Secretary was read.

Drs. Marshall and Schamberg were appointed to take the places of Drs. Peck and Eames on the Executive Committee.

The address of the chairman was then delivered by Dr. Latham on "The Relationship of the Oral Cavity to Medicine and Surgery." Discussed by Drs. Rhein, Talbot, Schamberg, Platt, Marshall, Brown and Latham.

The next order was a symposium on dental education. The following papers were read:

"A Common Ground for Medicine and Dentistry," by Frank L. Platt, San Francisco.

"The Physician as a Dentist," by Calvin W. Knowles, San Francisco.

"The Physician's Duty to the Child from a Dental Standpoint," by Alice M. Steeves, Boston.

"The Medical Relations of Certain Conditions of the Mouth," by L. Duncan Bulkley, New York City.

These four papers were discussed by Drs. Latham, Schamberg, Brown and Rhein.

Dr. M. L. Rhein of New York offered resolutions, to be laid before the House of Delegates, as to abolishing the contract surgeon in the Army. (These resolutions appear in full in The Journal, July 22, page 280.)

Dr. Brown moved that the resolutions be concurred in by the Section on Stomatology, and referred to the secretary of the Section to send to the House of Delegates if thought best.

This motion was seconded by Dr. Baldwin and discussed by Drs. Baldwin, Brown, Talbot, Schamberg and Rhein. Carried.

Committee on Nominations was appointed, consisting of Dr. G. V. I. Brown, Dr. M. I. Schamberg and Dr. F. L. Platt, to report Thursday.

WEDNESDAY, JULY 12—AFTERNOON.

Section was called to order at 2:18 p. m. by the chairman.

"Dentistry of To-morrow," by H. P. Carlton, San Francisco.

"What Will Probably Be the Dental Educational Standard for the Coming Decade," by Dr. C. C. Chittenden, Madison, Wis.

These two papers were discussed by Drs. Platt, Rhein, Levings, Schamberg, Brown and Carlton.

"Surgical Bacteriology of the Mouth," by Dr. A. H. Levings, Milwaukee, Wis. Discussed by Drs. Marshall, Brown, Schamberg, Rhein, Latham, Carlton and Levings.

"The Treatment of Suppurative Affections of the Face and Neck, Emanating from the Mouth," by Dr. M. I. Schamberg, Philadelphia. Discussed by Drs. Marshall, Brown, Levings, Rhein, Latham and Schamberg.

"The Etiology of Tooth and Nail Corrugations," by Dr. G. Lenox Curtis, New York. Discussed by Drs. Fletcher, Talbot, Schamberg, Marshall and Curtis.

THURSDAY, JULY 13—MORNING.

The Section was called to order at 10 a. m. by the chairman.

"To What Extent Are Teeth Necessary to the Human Being," by Dr. M. H. Fletcher, Cincinnati. Discussed by Drs. Talbot, Platt, Brown, Schamberg, Baldwin, Rhein and Latham.

"Fatal Oral Pathologic Conditions," by Dr. G. V. I. Brown, Milwaukee, Wis.

"Surgical Aspects of Disturbed Dentition of the Third Molar," by Dr. M. L. Rhein, New York City.

These two papers were discussed by Drs. Talbot, Schamberg, Platt, Marshall, Brown and Rhein.

THURSDAY, JULY 13—AFTERNOON.

A paper entitled "The Ossification of the Lower Jaw," by Edward Fawcett, Bristol, England, was read.

On motion a vote of thanks was extended to Dr. Fawcett for his excellent paper.

"Ankylostomiasis and Tongue Pigment," by Dr. T. M. Russell Leonard, Grenada, British West Indies. Discussed by Drs. Latham and Talbot.

"Tooth Genesis in Man," by H. W. Marett Tims, London, Eng.

"The Roentgen Rays in Dentistry," by Dr. M. Kassabian, Philadelphia.

"The Oral Manifestation of Diabetes Mellitus," by Dr. Herman Prinz, St. Louis.

The report of the Committee on Nominations was presented as follows: Chairman, C. F. Allen, Newburgh, N. Y.; vice-chairman, H. P. Carlton, San Francisco; secretary, Eugene S. Talbot, Chicago; member of House of Delegates, A. E. Baldwin, Chicago. On motion the report was adopted.

On motion the Section then adjourned *sine die.*

Section on Laryngology and Otology.

TUESDAY, JULY 11.

The Section was called to order at 2:20 p. m.

Chairman's address, Robert C. Myles, New York.

"The Treatment of Empyemata of the Maxillary Antrum Through the Nose," George L. Richards, Fall River, Mass. Discussed by Drs. Otto T. Freer, Chicago; Frank W. Hilscher, Spokane; G. P. Pond, San Francisco; L. C. Cline, Indianapolis; C. F. Welty, San Francisco; W. S. Anderson, Detroit; S. L. Ledbetter Birmingham; A. G. Greenstreet, Seattle; A. DeVilbiss, Toledo; J. H. Martindale, Los Angeles; Robert C. Myles, New York, and George L. Richards.

"Collodium as a Dressing After Intranasal Operations (A Preventive of Postoperative Hemorrhages)". With demonstrations. Kaspar Pischel, San Francisco. Discussed by Drs. George L. Richards, Fall River, Mass.; W. S. Anderson, Detroit; C. F. Welty, San Francisco; Frank W. Hilscher, Spokane; A. A. Green, Anniston, Ala.; Otto T. Freer, Chicago; H. Foster, Kansas City; Robert C. Myles, New York, and Kaspar Pischel.

Dr. Kaspar Pischel, San Francisco, moved that the chairmen of the Sections on Ophthalmology and on Laryngology and Otology be asked to arrange the meetings of the sections so that they will not interfere with each other, in order that the members may attend both sections. The motion was seconded, and was discussed by Drs. A. A. Greene, A. DeVilbiss, R. C. Myles, K. Pischel and L. C. Cline. The motion was then laid on the table.

Dr. George L. Richards, Fall River, Mass., presented the following resolution and moved its adoption:

Resolved, That the Section on Laryngology and Otology requests the House of Delegates to make arrangements to have the members of sections present at sessions of the A. M. A. receive the bound volumes of the transactions of their respective sections without the charge of $1.00 heretofore collected, and that said transactions be delivered to such members.

The motion was seconded, unanimously carried and referred to the House of Delegates. (See The Journal, July 22, page 285.)

On motion, it was decided to omit the annual smoker and dinner of the section.

WEDNESDAY, JULY 12—MORNING.

"A Demonstration of the Window Resection Method of the Correction of Deflections of the Nasal Septum," O. T. Freer, Chicago. Discussed by Drs. W. S. Anderson, Detroit, Mich.; Hill Hastings, Los Angeles; George L. Richards, Fall River, Mass.; George F. Cott, Buffalo, N. Y.; G. P. Pond, San Francisco; L. A. Leland, Boston; A. A. Greene, Anniston, Ala.; A. DeVilbiss, Toledo, Ohio; J. F. Barnhill, Indianapolis; Robert C. Myles, New York, and Dr. Freer.

The Nominating Committee, through Dr. George L. Richards, reported the following nominations: Chairman, O. T. Freer, Chicago; Secretary, W. S. Bryant, New York; Delegate, R. C. Myles, New York.

WEDNESDAY, JULY 12—AFTERNOON.

"The Correction of Saddle Nose by Bone Implantation," Cullen F. Welty, San Francisco. Discussed by Drs. W. S. Anderson, Detroit, Mich.; O. T. Freer, Chicago; Hal Foster, Kansas City, Mo.; W. W. Pennell, Mt. Vernon, Ohio; Robert C. Myles, New York, and Dr. Welty.

"Capital Operations for the Cure of Tinnitus Aurium," W. S. Bryant, New York. Discussed by Dr. J. F. Barnhill, Indianapolis.

"Diagnosis of the Intracranial Complications Due to the Middle Ear Suppurations." John F. Barnhill, Indianapolis.

"Four Cases of Mastoid Operations Without Opening the Antrum: Recovery. A Fifth, Periostitis Only, and a Sixth, Destruction of Inner Table of Skull. George F. Cott, Buffalo.

These two papers were discussed by Drs. George L. Richards, Fall River, Mass.; Hill Hastings, Los Angeles; Cullen F. Welty, San Francisco; A. DeVilbiss, Toledo; Kaspar Pischel, San Francisco; Frank W. Hilscher, Spokane; W. W. Murphy, Los Angeles;

G. P. Pond, San Francisco; L. A. Leland, Boston; S. L. Ledbetter, Birmingham, Ala.; Robert C. Myles, New York, and Drs. Barnhill and Cott.

Thursday, July 13—Morning.

"Two Cases of Sinus Thrombosis, with Masked Symptoms; Mastoid Operation; One Death; One Recovery." Hill Hastings, Los Angeles, Cal. Discussed by Drs. George L. Richards, Fall River, Mass.; George F. Cott, Buffalo, N. Y.; Cullen F. Welty, San Francisco; W. H. Roberts, Pasadena, Cal.; H. Stillson, Seattle; L. A. Leland, Boston; W. W. Murphy, Los Angeles; John F. Barnhill, Indianapolis; Robert C. Myles, New York, and Dr. Foster.

"Exhibition of a New Tonsillotome," Edwin E. Straw, Marshfield, Ore. Discussed by Drs. Robert C. Myles, New York; L. C. Cline, Indianapolis, and John F. Barnhill, Indianapolis.

It was moved by Dr. George L. Richards, Fall River, Mass., and seconded by Dr. John F. Barnhill, Indianapolis, that the report of the Committee on Nominations be accepted and acted on by ballot. Carried unanimously. On motion of Dr. A. DeVilbiss, Toledo, and duly seconded, the ballot was cast by Dr. George L. Richards, and the following were declared the officers for the Section for the ensuing year: Chairman, Otto T. Freer, Chicago; Secretary, W. S. Bryant, New York; Executive Committee, George L. Richards, Fall River, Mass.; John F. Barnhill, Indianapolis, and Robert C. Myles, New York.

Section on Pharmacology and Therapeutics.

Tuesday, July 11.—Afternoon.

Section called to order at 2:30 p. m. by the Chairman, Dr.. Heinrich Stern, New York City.

The Chairman's Address was read. Discussed by Drs. Cottel, Lewis, Kelly and Stern.

It was announced that Dr. Homer I. Keeney had been appointed by the local committee as the member to look after the comfort of visiting members.

Certificate of credentials was presented from American Pharmaceutical Association.

Drs. William C. Wescott, Atlantic City, N. J., and Charles O. Jones, Osceola, Mo., on application, were elected to membership.

Report of Committee on Proprietary Medicines was read by the Secretary. Discussed by Drs. Waugh, Reilly, Chamberlin and Cottel.

Report of Committee to Aid Postoffice Department in Excluding Objectionable Advertisements was read by the Secretary. Dr. Lewis moved that a committee of three be appointed to consider these reports, to accept them, and to draw up resolutions founded on their recommendations, submitting them to the Section for approval as a whole. Seconded and carried.

Drs. Lewis, Chamberlin, and Waugh were appointed as such a committee.

Dr. Chamberlin offered the following resolution:

Resolved, That Section 1, Chapter 1, Book 1, of the By-Laws, be amended so as to read: "A member in good standing of the association of the state in which he resides, who is not in any manner connected with the business of manufacturing pharmacy, or a medical officer of the U. S. Army, of the U. S. Navy, or of the U. S. Public Health and Marine-Hospital Service, may become a member of the American Medical Association by presenting to the general secretary (1) satisfactory evidence of one of the above qualifications; (2) written application for membership on the prescribed form, and (3) the annual dues."

Dr. Chamberlin moved that the representative of the Section on Pharmacology and Therapeutics in the House of Delegates be directed to offer the resolution at the next meeting of the House of Delegates. Seconded.

After discussion by Drs. Lewis, Frick, and the Secretary, and a few remarks by the Chairman, Dr. Chamberlin withdrew his motion, and after further remarks by the Secretary, requested to have his motion reinstated. No vote was taken, however.

None of the Executive Committee being present, Drs. Waugh, Dickinson and Reilly were appointed an Executive Committee *pro tem.*

The Secretary offered the following resolution, and moved that the Delegate to the House of Delegates be directed to present it before that body:

Resolved, That Book 4, Chapter 2, Section 12, be amended so as to read: "Before only two (instead of one) sections at any annual session."

Motion seconded and carried.

Wednesday, July 12.—Morning.

The Section was called to order at 9.30.

The Chairman appointed as a Nominating Committee Drs. J. V. Kelly, John T. Nagle and H. E. Lewis.

Dr. Bryant read a paper entitled "Common-sense Nasal Therapeutics." Discussed by Drs. Reilly, Waugh, Lewis and Bryant.

Dr. Daniel R. Brower of Chicago read a paper on "Therapeutics of Neuritis." Discussed by Drs. Stern, Lewis, Jones and Brower.

Dr. Chamberlin moved that the delegate be instructed to work with the utmost earnestness for the restoration of the title of this Section as the Section on Pharmacology and Therapeutics. Seconded by Dr. Waugh. Discussed by the Secretary and the Chairman, after which the motion was put and carried.

Dr. Ashley read a paper entitled "Therapeutics of Flat-foot." Discussed by Drs. Reilly, Brower, Lewis, Abbott, Cottel, Waugh, Foss and Ashley.

Dr. Thomas F. Reilly of New York City read a paper on the "Therapeutics of Lupulin." Discussed by Drs. Abbott, Foss, Waugh, Stern, Hallberg and Reilly.

Dr. William F. Waugh, Chicago, read a paper entitled "Arbutin." Discussed by Drs. Hallberg, Foss, Abbott, Cottel, Stern, and Waugh.

Dr. Waugh took the chair, and Dr. Stern read a paper entitled "Sixteen Years' Experience with Formic Acid as a Therapeutic Agent," which was discussed by Drs. Abbott, Reilly, Hallberg, Waugh, and Stern.

The Secretary announced the meeting this afternoon of the Pharmaceutical Congress at the Lewis and Clark Exposition.

An invitation was read from the British Columbia Medical Association.

The Secretary announced that printed copies of the Transactions of the Section could be procured for $1.00, provided seventy-five were ordered in advance.

Thursday, July 13.—Afternoon.

The session was called to order at 2:30, by Chairman Stern.

The Nominating Committee reported in favor of Dr. Thomas F. Reilly, New York, for Chairman; Dr. William Frick, Kansas City, Mo., Vice-Chairman; Dr. C. S. N. Hallberg, Secretary; Dr. Heinrich Stern, Delegate. Ballots were cast and the nominees elected.

Dr. Albert Schneider, San Francisco, read a paper entitled "Uncertain Origin of Many Drugs." Discussed by Drs. Wahrer, Calvin and McDonnell.

Dr. William M. Searby, San Francisco, read a paper on "The U. S. Pharmacopeia—Its Functions."

Dr. C. S. N. Hallberg, Chicago, read a paper entitled "The U. S. Pharmacopeia—Advance in Pharmacy."

Dr. Chamberlain moved that Dr. Abbott read Dr. Tracy's paper, in Dr. Tracy's unavoidable absence. Dr. Abbott read as requested.

These three papers were discussed by Drs. Chamberlain, Lewis, Calvin, Abbott, Stern, Schneider, Searby, and Hallberg.

Dr. H. E. Lewis read a paper on the "Etiologic and Therapeutic Relation of the Pancreas in the Development of Tuberculosis." Discussed by Drs. Foss, Abbott, Searby, Stern and Lewis.

Report of the Committee on Resolutions was read by Dr. Lewis, who presented resolutions:

Resolved, That it is the sense of the Section on Pharmacology and Therapeutics that all proprietary products should have titles as nearly descriptive as possible of their active constituents or elementary composition; and that, while we deplore the present necessity of trade names and titles, we recognize that the evils of substitution are so prevalent that in the interests of honest progressive pharmacy the use of such names and titles can not be avoided. It is, however, the further opinion of this Section that many, if not all, of the objectionable features of proprietary products can be eliminated, first, by the use in connection with the trade name, of some subtitle which will express in scientific terms the nature and character of its composition; and second, by the use on the label or in the disseminated literature, of a descriptive formula which will exhibit the character and proportions of the active constituents.

Whereas, The U. S. Pharmacopeia has established standards of nomenclature and orthography which appeal to science and scientific methods: therefore be it

Resolved, That the Section on Pharmacology and Therapeutics respectfully urges the desirability of the American Medical Association accepting the U. S. Pharmacopeia as the standard of nomenclature and orthography in all its transactions and publications.

Whereas, The Postmaster-General of the United States and the Secretary of Agriculture are making laudable efforts to restrict or to exclude all obnoxious, fraudulent and dangerous substances from the United States mail: and

Whereas, These efforts are nullified to a certain extent by abstruse or incomplete laws, or misunderstanding in their interpretation; therefore, be it

Resolved, That the Section on Pharmacology and Therapeutics of the American Medical Association extend to the Postmaster-General and the Secretary of Agriculture our sincere appreciation of their efforts in behalf of honest pharmacy and assure them that this Section is in accord with their methods and objects; and be it

Resolved, That the Section on Pharmacology and Therapeutics of the American Medical Association emphasize to our legislators and postoffice authorities the necessity of denying to every fraudulent and dishonest firm the use and privileges of the United States mails in every way and particular; and further be it

Resolved, That the Section on Pharmacology and Therapeutics of the American Medical Association urge on the postoffice authorities the desirability of a proper regulation for the protection of the people which will make necessary the proper and plain labeling of all poisonous tablets, powders or other substances before admitting the same to the privileges of the United States mails.

H. Edwin Lewis,
C. S. Chamberlin,
W. F. Waugh.

Dr. Foss moved that the resolutions presented be adopted.

Discussed by Drs. Abbott, Foss, Lewis, Hallberg.

Motion carried.

Dr. Lewis moved that the Secretary of the Section submit to the Board of Trustees the matter concerning *ovoferrin,* asking them to investigate it and the position of Dr. Robinson with reference to it.

Discussed by Drs. Lewis, Abbott, Chamberlain and Hallberg, and motion carried.

Dr. Foss reported the proceedings of the House of Delegates relating to this Section.

A vote of thanks was extended to the retiring Chairman, Dr. Stern.

PORTLAND REGISTRATION.

List of Members, Associate Members and Guests Who Registered at Portland, Oregon.

The total registration at the Portland session was 1,678. We print below the names and addresses of the members, associate members and guests who registered. The names that are starred are of guests. Preceding the names are two summaries: one giving the registration by states and one by sections. In the latter are mentioned "Miscellaneous, 100." This includes those who have not yet forwarded credentials for membership. These are, therefore, not listed by name and are not counted in the summary by states.

REGISTRATION BY SECTIONS.

Practice of Medicine	494
Obstetrics and Diseases of Women	168
Surgery and Anatomy	443
Hygiene and Sanitary Science	48

Ophthalmology	105
Diseases of Children	46
Stomatology	23
Nervous and Mental Diseases	58
Cutaneous Medicine and Surgery	32
Laryngology and Otology	34
Materia Medica, Pharmacy and Therapeutics	26
Pathology and Physiology	18
Registered without specifying any particular section	82
Miscellaneous	97
Total	1,678

REGISTRATION BY STATES.

Alabama	8
Arizona	6
Arkansas	9
California	164
Colorado	32
Connecticut	10
District of Columbia	9
Florida	1
Georgia	4
Hawaii	2
Idaho	31
Illinois	123
Indiana	58
Iowa	85
Kansas	18
Kentucky	29
Louisiana	7
Maine	2
Maryland	12
Mexico	1
Massachusetts	30
Michigan	33
Minnesota	51
Mississippi	7
Missouri	40
Montana	20
Nebraska	20
New Hampshire	1
New Jersey	12
New Mexico	5
New York	50
Nevada	3
North Carolina	1
North Dakota	10
Ohio	60
Oklahoma	3
Oregon	217
Pennsylvania	98
Philippine Islands	1
South Carolina	3
South Dakota	16
Tennessee	19
Texas	14
Utah	26
Vermont	4
Virginia	9
Washington	156
West Virginia	7
Wisconsin	39
Wyoming	5
Foreign	6

Section on Practice of Medicine.

Abbott, W. C., Chicago.
Abraham, Henry, San Francisco.
Adair, B. A. Owens, N. Yakima, Wash.
Adams, Ben O., Eaton, Ind.
Aldrich, J. F., Shenandoah, Ia.
Alguire, Annie, Belvidere, Ill.
Allen, J. Q., Montrose Colo.
Allen, M. K., Louisville, Ky.
Allen, Ulamor, Jersey City, N. J.
Alley John Newton, Lapwai, Ida.
Amesse, J. W., Seattle, Wash.
Amerland, J. H., St. Louis, Mo.
Anders, Jas. M., Philadelphia.
Anderson, W. E., Farmville, Va.
Arneill, James R., Denver, Colo.
Atkins, W. Edwin, Pilot Point, Tex.
Austin, M. O., San Francisco.
Austin, M. B., Brunswick, Mo.
Bailey, Aug. B., Hillsboro, Ore.
Bailey, F. A., Hillsboro, Ore.
Bailey, F. J., Hillsboro, Ore.
Baker, Eugene, Ihtaca, N. Y.
Baker, N. M., Spokane, Wash.
Ball, W. A., Box, O. T.
Bartley, James H., Lillah, Wash.
Barnett, Benj. M., Rosedale, Kan.
Barber, John R., Portland, Ore.
Bartle, Ira B., Eugene, Ore.
Becknell, I. J., Goshen, Ind.
Beck, J. S., Dayton, Ohio.
Beckley, Auburt L., Portland, Ore.
Bell, James F., Portland, Ore.
Bennett, W. C., Mt. Gilead, Ohio.
Berry, R. D., Springfield, Ill.
Bertola, Mariana, San Francisco.
Bevier, A. B., Ridgway, Pa.
Bickford, Ernest L., Seattle, Wash.
Biggers, George Lee, La Grande, Ore.
Bierring, Walter L.,Iowa City, Ia.
Biles, J. D., Sumner, Miss.
Billings, Frank, Chicago.
Bird, Maurice Duane, Marinette, Wis.
Binswanger, Otto S., Portland, Ore.
Black, F. W., Ligonier, Ind.
Black, J. T., Elroy, Texas.
Blumer, George, San Francisco.
Boehm, J. C., St. Cloud, Minn.
Bond, J. L., Ukrah, Cal.
Bonnet, C. A., Columbus, Ohio. Ore.
Booth, John R., Seattle, Wash.
Bower, W. C., Lebanon, Kan.
Bourland, I. N., Equality, Ill.
Bower, Albert S.,Salt Lake, Utah.
Bozovsky, Vacil D., Dunkirk, N. Y.
Brabic F. J., Perham, Minn.
Brewster, Mary J., Northampton, Mass.
Brill, James H., Indianapolis.
Bridges, W. O., Omaha, Neb.
Brill, William, Los Angeles Cal.
Briggs, Solon, Pasadena, Cal.
Brodie, Benj. P., Detroit, Mich.
Brown, S. J., Panora, Iowa.
Brobeck, A. L. Hoopeston, Ill.
Brown, George J., Smith River, Cal.
Brown, John R., Tacoma, Wash.
Brown, Otis S., Warren, Pa.
Brown, Philip King, San Francisco.
Bumgarner, Chas. S., Thornton, Wash.
Bundy, A. D., Osage, Iowa.
Burnham, F. R., San Diego, Cal.
Burkhart, E. J., Johnstown, Pa.
Butler, Clarence A., Dell Rapids, S. D.
Buxton, W. E. Samsville, Ill.
Cabot, Richard C., Boston, Mass.
Cable, E. E., Portland, Ore.
Campbell, A. D., Cleveland, Ohio.
Campbell, Geo. R., Augusta, Me.
Campbell, E. R., Bellows Falls, Vt.
Carter, J. M. G., Waukegan, Ill.
Carter, J. A., Knox, N. D.
Candwell, Wm. Clay, Pomeroy, Wash.
Caywood, J. Robt., Piqua, Ohio.
Cheney, Wm. Fitch, San Francisco.
Chittick, W. R., Detroit, Mich.
Chisholm, Jas., Everett, Wash.
Chilton, L. W., Canyon City, Ore.
Chipman, R. J., Portland, Ore.
Christopher, W. H., London, O.
Christensen, F. A., Lake Mills, Iowa.
Clarke, Robt. C., Pittsburg, Pa.
Claybaugh, W. R., Litchville, N. D.
Clouchek, H. W., Twin Falls, Idaho.
Cobleigh, E. A., Chattanooga, Tenn.
Coberly, Lee J., Garfield, Wash.
Coe, T. D., Keithsburg, Ill.
Coleman, Thos. D., Augusta, Ga.
Conner, F. H., Nevada, Iowa.
Cooper, J. A., Terre Haute, Ind.
Cooper, Charles Miner, San Francisco.
Cornelius, C. W., Portland, Ore.
Cox, A. J., Tyler, Minn.
Crain, F. M., Redfield, S. D.
Crawford, Alex., Mt. Vernon, Ia.
Craig, R. W., Phoenix, Ariz.
Criley, Benton H., DallasCenter.Iowa.
Crockett, E. N., Portland, Ore.
Cronk, Clara L. K., Bloomfield, Iowa.
Cronk, C. H., Bloomfield, Iowa.
Cunnane, Thomas Edward, Ventura, Cal.
Curtis, E. E., Saginaw, Mich.
Davis, S. F., Pomona, Cal.
Davenport, Geo. E., Lisbon, N. H.
Davidson, Chas. H., Lexington, Va.
De Armond, R. S., Grant's Pass, Ore.
Dickson, W. L., Shreveport, La.
Dittmer, E. G., Manchester, Ia.
Dittmer, H. A., Manchester, Ia.
Doane, O. D., The Dalles, Ore.
Dock, George, Ann Arbor, Mich.
Dodin, Henry A., New York.
Douglas, G. H., Grant's Pass. Ore.
Dunlap, W. O., Sedalia, Mo.
Dutton, C. L., Meridian, Idaho.
Dwelle, E. H., Northwood, Iowa.
Eaton, Geo. Lee, San Francisco.
Eberlin, Edward A.,, Glenwood, Minn.
Ellenberger, J. Wesley, Harrisburg, Pa.
Emerson, Charles P., Baltimore, Md.
Emery, Chas. H., Bedford, Ind.
Epler, E. G., Fort Smith, Ark.
Ewing, A. C., Salt Lake, Utah.
Ewin, W. H., Union, Ore.
Eyestone, Al. G., Gibsonburg, O.
Falk, Frederick, Seattle, Wash.
Farra, G. R., Corvallis, Ore.
Fawcett, C. E., Stewartsville, Minn.
Felch, H. J., Ellensburg, Wash.
Ferguson, Albert D., Philadelphia.
Fessler, Theo., Portland, Ore.
Finch, Arthur A., Astoria, Ore.
Findley, Joseph D., Altoona, Pa.
Finley, George W., Brazil, Ind.
Fisher, E. E., Rodney, Iowa.
Flower, D., Monticello, Wis.
Foster, W. S., Pittsburg, Pa.
Francine, Albert A., Philadelphia.
Frankenheimer, Jule B., San Francisco.
French James M., San Diego, Cal.
Freeland, J. L., Indianapolis.
Frederick, W., Pittsburg, Pa.
Fried, M., Portland, Ore.
Frink, O. G., South Shore, S. D.
Fronfield, J. Warren, Media, Pa.
Fussell, M. Howard, Philadelphia.
Gable, Isaac C., York, Pa.
Gallion, T. W., Davisville, Cal.
Gardner, F. P., Seattle, Wash.
Gashwiler, J. Schooling, Novinger, Mo.
Geisendorffer, John A., The Dalles, Ore.
Gibson, W. E., Issaquah, Wash.
Gillespie, J. F., Reelsville, Ind.
Glass, Jos. H., South Fork, Pa.
Grandy, Charles R., Norfolk, Va.
Graham, Christopher, Rochester, Minn.
Gray, Geo. A., Spokane, Wash.
Green, Jas. H., North Vernon, Ind.
Greene, H. M., La Crosse, Wash.
Greenley, T. B., Meadowlawn, Ark.
Gregg, Grant W., Wallowa, Ore.
Gross, C. C., Yankton, S. D.
Gue, John W., Mackay, Idaho.
Gullette, Fred., Portland, Ore.
Hall, J. F., Albion, Wash.
Hall J. N., Denver, Colo.
Hall, O. W., Star, Idaho.
Hall, Joseph E., Clateskamie, Ore.
Halsey, L. M., Williamstown, N. J.
Hall, John R., Marshall, Mo.
Hamilton, N. H., Santa Monica, Cal.
Hamilton, George, La Jara, Colo.
Hammond, Schuyler W., Rutland, Vt.
Hammond, E. D., Salt Lake, Utah.
Hamilton, W. B., Portland, Ore.
Hamilton, J. H., Union, S. C.
Hapgood, L. P., Pittsburg, Pa.
Happel, T. J., Trenton, Tenn.
Harris, J. W., Eugene, Ore.
Harrison, Isaac M., Seattle, Wash.
Harlow, Wm. Page, Boulder,Colo.
Harris, T. W., Eugene, Ore.
Harvey, L. J., Griggsville, Ill.
Hartman, Frank T., Waterloo, Iowa.
Hawes, S. A., Greenville, Ohio.
Hawk, J. W., Green River, Wyo.
Haynes, John R., Los Angeles, Cal.
Heacock, Joseph D., Birmingham, Ala.
Henderson, S. A., Bells, Tenn.
Henssy, Wm. C., Seattle, Wash.
Hicks, Grant S., Tacoma, Wash.
Higgs, A. K., Heppner, Ore.
Hill, Chas. E., Portland, Ore.
Hilliker, J. B., Grand Rapids, Mich.
Hiner, S. B., Lima, Ohio.
Hockett, Clyde T., Cottage Grove, Ore.
Holland, P. C., Bloomington, Ind.
Hollingshead, E., Pemberton, N.J.
Horrell, C. B., Galesburg, Ill.
Hood, C. J., Elko, Nev.
Howard, William F., Pocatello, Idaho.
Howe, Gadsden E., La Conner, Wash.
House, Charles F., Painesville, O.
Hudson, S. E., Austin, Texas.
Hughes, Helen, Mankato, Minn.
Hull, F. C., Carlisle, Iowa.
Humfreville, D. W., Waterville, Kan.
Humphrey, T. C., Portland, Ore.
Hunter, W. W., Monticello, Iowa.
Hurd, Edward F., New York.
Hutchinson, Woods, Redlands, Cal.
Imrie, Andrew W., Detroit, Mich.
James, Charles, Tekoa, Wash.
Johnson, J. H., Los Angeles, Cal.
Johnson, S. H., Bellingham, Wash.
Johnston, Walter, Seattle, Wash.
Johnson, O. B., Lizton, Ind.
Jones, Louis H., Wall Lake, Ia.
Jonsson, Christian, Clinton, Ia.
Jones, Chas. H., Tempe, Ariz.
Jones, Philo E., Salt Lake, Utah.
Jump, David W., Plainfield, Ill.
Kalb, C. S., Spokane, Wash.
Kane, Alfred, Fort Wayne, Ind.
Kee, Albert L., Holbrook, Neb.
Kelly, Richmond, Portland, Ore.
Keyes, C. R., Duluth, Minn.
King, Jos. M., Los Angeles, Cal.
Kincaid, J. W., Collettsburg, Ky.
King, Alfred E., Antelope, Ore.
Kimmell, J. A., Findlay, Ohio.
Kime, J. H., Alton, Cal.
Kinnear, C. H., Tacoma, Wash.
Kistner, Frank B., Heppner, Ore.
Knott, John M., Sioux City, Ia.
Lang, A. A. J., Sanborn, N. D.
Langham, J. B., Seattle, Wash.
Lankford, J. S., San Antonio, Texas.
Lawhead, H. D., Woodland, Cal.
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Swoboda, Louis, Omaha, Neb.
Thomas, James W., Seattle, Wash.
Tilzer, A., Portland, Ore.
Williams, Ralph, Los Angeles, Cal.

Section on Laryngology and Otology.

Anderson, Willis S., Detroit, Mich.
Barnhill, John F., Indianapolis, Ind.
Bartle, P. J. Eugene, Ore.
Brosius, F. C., Hood River, Ore.
Bryant, W. Sohier, New York, N. Y.
Bruere, Gustave E., Portland, Ore.
Cline, L. C., Indianapolis, Ind.
Coghlan, Dr. John N., Portland, Ore.
Cooper, C. E., Denver, Col.
Cott, Geo. F., Buffalo, N. Y.
Cox, Rosamond L., San Francisco, Cal.
Daily, F. M., Beloit, Kan.
De Vilbiss, Allen, Toledo, Ohio.
Fenton, H. C., Portland, Ore.
Foster, Hal, Kansas City, Mo.
Freer, Otto T., Chicago, Ill.
Gaines, J. W., Kansas City, Mo.
Gildca, P. F., Colorado Springs, Col.
Hall, D. Walton, Kansas City, Mo.
Hastings, Hill, Los Angeles, Cal.
Hawley, Alanson W., Seattle, Wash.
Kirk, W. H., Pittsburg, Pa.
Kirkendall, John S., Ithaca, N. Y.
Leland, G. A., Boston, Mass.
Malsbary, Geo. E., Cincinnati, Ohio.
Martindale, John H., Los Angeles, Cal.
Myles, Robert E., New York, N. Y.
Osgood, C. F., Ogden, Utah.
Pennell, William W., Mt. Vernon, Ohio.
Powers, L. M., Los Angeles, Cal.
Richards, Geo. L., Fall River, Mass.
Rogers, Arthur S., Saginaw, Mich.
Solenberger, Amos R., Colorado Springs, Col.
Welty, Cullin F., San Francisco, Cal.

Section on Pharmacology and Therapeutics.

Beard, T. E., Grant's Pass, Ore.
Bowen, Frederick, Jacksonville, Fla.
Chamberlin, C. S., Cincinnati, Ohio.
Clark, G. H., Waterloo, Iowa.
Coad, N. G. O., Hull, Iowa.
Cottel, Willis I., Portland, Ore.
Dickerson, W. L., St. Louis, Mo.
Fassett, Chas. Wood, St. Joseph, Mo.
Foss, John W., Phoenix, Ariz.
Frick, Wm., Kansas City, Mo.
Hallberg, C. S. N., Chicago, Ill.
Harris, E. Eliot, New York, N. Y.
Jones, Philip Mills, San Francisco, Cal.
Kelly, J. V., Philadelphia, Pa.
Leonard, Edwin, Jr., Jersey City, N. J.
Lewis, H. Edwin, Burlington, Vt.
McNair, William Righter, Glendora, Cal.
Reilly, Thos. F., New York City, N. Y.
Riley, Cassius M., St. Louis, Mo.
Ristine, W. H., Crawfordsville, Ind.
Simmons, George H., Chicago, Ill.
Stern, Heinrich, New York, N. Y.
Walker, A. D., Portland, Ore.
Waugh, Wm. F., Chicago, Ill.
Wheatley, Frank G., North Abington, Mass.
Wilson, L. D., Wheeling, W. Va.

Section on Pathology and Physiology.

Black, Stanley P., Pasadena, Cal.
Brooks, Harriet V. Bills, Saginaw, Mich.
Brubaker, Albert P., Philadelphia, Pa.
Christian, Henry A., Boston, Mass.
Hall, Winfield S., Chicago, Ill.
Kemp, Geo. T., Champaign, Ill.
King, Chas. Lee, Pasadena, Cal.
Knabe, Helene, Indianapolis, Ind.
Krone, Carl R., Oakland, Cal.
McClintock, Chas. T., Detroit, Mich.
McFarland, Joseph, Philadelphia, Pa.
New, Charles F., Indianapolis, Ind.
Nusbaumer, Pauline S., Oakland, Cal.
Raley, Franklin H., Salt Lake City, Utah.
Rosenau, M. J., Washington, D. C.
Ruediger, Gastav F., Chicago, Ill.
Smith, Claude A., Atlanta, Ga.
Wynn, Frank B., Indianapolis, Ind.

The following did not specify any particular Section:

Ainslie, George, Portland, Ore.
Aschenbrenner, C. F. Dysart, Iowa.
Axtell, W. H., Bellingham, Wash.
Avey, O. H., Payette, Idaho.
Barnes, E. W., North Powder, Ore.
Botkin, A. W., Mt. Tabor Sta., Portland, Or.
Bowles, Marion K., Joliet, Ill.
Boyd, J. C., Washington, D. C.
Boyers, J. S., Decatur, Ind.
Brundage, M., Shelley, Idaho.
Carson, N. B., St. Louis, Mo.
Carll, Walter E., Oregon City, Ore.
Cargill, Chauncey W., Mason City, Ill.
Carter, R. H., Victoria B. C.*
Collins, I. S., Burke, Idaho.
Cook, John Wallace, Pendleton, Ind.
Douglas, William, Tacoma, Wash.
Downing, W. L., Moulton, Iowa.
Drew, Geo. E., New Westminster, B. C.*
Edwards, Wm., Bowdle, S. D.
Eldridge, E. F., Grand Junction, Colo.
Equi, Marie D., Portland, Ore.
Ferguson, James B., Olivia, Minn.
Ferguson, E. E., The Dalles, Ore.
Giesy, A. J., Portland, Ore.
Hanson, D. S., Cleveland, Ohio.
Hatchett, John A., El Reno, Okla.
Hines, Chas., Forest Grove, Ore.
Hosmer, A. J., Salt Lake City, Utah.
Hughes, H. A., Phoenix, Ariz.
Jayne, R. A., Springfield, Ore.
Jefferson, G. Orlo, Portland, Ore.
Johnson, J. J., Harrison, Ark.
Keith, L. S., Towanda, Ill.
Kirkpatrick, Wm. D., Bellingham, Wash.
Lane, Harry, Portland, Ore.
Lehnkering, C. F., Darlington, Wis.
Lobdell, Mary J., Beloit, Kan.
Long, John W., Bryan, Ohio.
Manning, John F., Everett, Wash.
Martin, Harry S., Spokane, Wash.
Marsh, R. J., Portland, Ore.
Matthews, A. Aldridge, Spokane, Wash.
Moody, Chas S., Sand Point, Idaho.
Murray, A. J., Lakeside P. O., Ontario.*
Newcomer, M. V. B., Tipton, Ind.
O'Reilly, Robert W., Washington, D. C.
Parkinson, James H., Sacramento, Cal.
Peavler, G. M., Bristol, Tenn.
Pickel, E. B., Medford, Ore.
Prinzing, Jacob, Ontario, Ore.
Purdue, G. C., Wichita, Kan.
Rankin, Theo. W., Columbus, Ohio.
Saunders, Clark E., Union, Ore.
Seidler, W. J., Newark, N. J.
Skene, William H,. Portland, Ore.
Smouse, David W., Des Moines, Iowa.
Spottswood, E. W., Missoula, Mont.
Stevens, J. E., Seattle, Wash.
Stickney, V. H., Dickinson, N. D.
Strickland, Melville Cox, Oregon City, Ore.
Stribling, J. S., Seneca, S. S.
Tanquary, J. H., St. Louis, Mo.
Thornton, Edgar H., Portland, Ore.
Thorpe, J. L., Jefferson City, Mo.

Turner, W. K., Seattle, Wash.
Turner, S. T., El Paso, Texas.
Tuthill, J. A., Le Roy, Ill.
Vaughn, J. B., Castlewood, S. D.
Watkins, T. R., Aberdeen, Wash.
Watson, W. C., Lima, Ohio.
Watson, Wm. Newbold, Philadelphia, Pa.
Welch, John Frederick, Quincy, Mass.
Wheeler, C. H., Portland, Ore.
Wiltsie, S. F., Seattle, Wash.
Willson, G. C., Nevada, Mo.
Witherbee, O. O., Los Angeles, Cal.
Wood, C. B., Honolulu, Hawaii.
Wood, J. F., Condon, Ore.
Yerdon, Charles F., Brooklyn, N. Y.
Young, James A., Pearl, Idaho.

NEW MEMBERS.

List of new members of the American Medical Association during the month of July, 1905:

ALABAMA.

Dugan, R. H., Prairie Villa.
Fields, E. T., Ensley.

ARIZONA.

Cassady, D., Bisbee.
Hughes, H. A., Phoenix.
Olcott, A. W., Tucson.

ARKANSAS.

Eastman, E. H., Hot Springs.
Hederick, A. R., Booneville.
Parker, J. L., Snyder.
Sweatland, A. E., Little Rock.
Steed, C. J., Hurricane.

CALIFORNIA.

Avey, J. L., Redlands.
Bryant, E. A., Los Angeles.
Barber, D. C., Los Angeles.
Black, J. A., San Francisco.
Brown, Geo. J., Smith River.
Breneman, J. T., Martinez.
Carlton, H. P., San Francisco.
Clark, Wm. A., San Leandro.
Cunnani, T. E., Ventura.
Crediford, D. B., Rialto.
Campbell, C. G., San Bernardino.
Cox, H. M., San Luis Obispo.
Dial, E. A., Santa Barbara.
Davis, S. F., Pomona.
Hesser, G. T., Folsom City.
Herbert, H., Los Angeles.
Hinkle, B. M., San Francisco.
King, E. D., Ukiah.
Kane, J. M., Oakland.
Kelly, A. S. Oakland.
Majors, E. A., Stoledad.
Milton, J. L., Oakland.
Magee, C. L., Los Angeles.
Meng, J. D., Chico.
Mules, J. H., East Auburn.
Nelson, L., San Francisco.
Nixon, A. W., Los Angeles.
Pond, G. P., San Francisco.
Reed, C. E., Redding.
Ryfkogel, H. A. L., San Francisco.
Richardson, N. E., Salinas.
Schmall, E., San Francisco.
Smyth, M. H., Stockton.
Southworth, M. A., San Jose.
Schlagcter, H. J., San Francisco.
Troppmann, C. M., San Francisco.
Walker, J. R., Fresno.

COLORADO.

Bren, M. R., Denver.
Daniels, H. P., Colorado City
Epler, Crum, Pueblo.
Hutchinson, W., Del Agua.
Keeney, M. J., Pueblo.
Phelan, N. J., Denver.
Stubbs, A. L., La Junta.
Shere, O. M., Denver.
Wood, W. H., Greeley.
Wilkinson, W. W., Silverton.

CONNECTICUT.

Heady, E. B., Milford.
Lewis, J. B., Hartford.
Loomis, F. N., Derby.
McCabe, E. M., New Haven.
Smirnow, Louis, Bridgeport.
Streit, George, Middletown.
Witter, Wm., Norwich.
Young, C. B., Middletown.

DISTRICT OF COLUMBIA.

Biscoe, F. L., Washington.
Duffey, H. C., Washington.
Key, Sothoron, Washington.

GEORGIA.

Champion, W. L., Atlanta.

HAWAII.

Day, F. R., Honolulu.
Armitage, Edw., Wailuku, Mani.

IDAHO.

Boyd, T. O., Twin Falls.
Collister, Geo., Boise.
Coultchard, G. H., Idaho Falls.
Clouchek, H. W., Twin Falls.
Gritman, C. L., Moscow.
Hamilton, J. J., Caldwell.
Hall, O. L., Star.
Jordan, M. S., Grand Mound.
Moody, C. S., Sand Point.
Murray, J. H. Nampa.
Phillips, C. C., Lewiston.
Springer, W. D., Boise.

ILLINOIS.

Bailey, C. W., Hebron.
Bailey, G. T., Chicago.
Baldwin, B. H., Chicago.
Burch, G. W., Quincy.
Bussey, G. N., Chicago.
Bell, A., Chicago.
Clune, P. J., Ottawa.
Coone, B., Chicago.
Crowder, T. R., Chicago.
Crouch E. L., Jacksonville.
Conner, E. M., Chicago.
Dagg, T. L., Chicago.
Dicus, G. A., Streator.
Duncan, C. E., Flora.
Foster, T. J., De Soto.
Fiske, D., Chicago.
Gaebler, Arthur, Chicago.
Githens, W. K., Hamilton.
Greig, T. O., Chicago.
Hester, E. E., Paxton.
Hansen, G. H., Chicago.
Harper, J. E., Chicago.
Huey, W. B., Chicago.
Hamilton, J. W., Mt. Vernon.
Hassin, G. B., Chicago.
Frank, I., Chicago.
Kieene, F. R. C., Chicago.
Lemen, H. R., Alton.
Leonard, E. F., Chicago.
Lurie, W. A., Chicago.
Lyon, C. E., Toledo.
MacDowell, E. G., Chicago.
McCornack, E. A., Elgin.
Merki, E. J., Chicago.
Miller, G. P., Chicago.
Miller, J. E., Pittsfield.
McGuire, J. W., Chicago.
Peter, R., Chicago.
Presler, H. M., Cullom.
Presnell, J. F., Chicago.
Phillips, D. C., Chicago.
Podstata, V. H., Dunning.
Rosenow, E. C., Chicago.
Reid, D. W., Jacksonville.
Rochow, C. J. F., Rock Island.
Remmen, N. E., Chicago.
Rudy, F. T., Champaign.
Vary, W. H., Chicago.
Vaupell, W. R., Chicago.
Washburn, W. E., Kewanee.
Whise, M., Chicago.

INDIANA.

Brill, J. H., Indianapolis.
Black, F. W., Ligonier.
Calvin, J. Carruthers, Ft. Wayne.
Cooper, J. A., Terre Haute.
Daugherty, C. A., South Bend.
Freeland, J. L., Indianapolis.
Hawn, C. E., Little York.
Mattison, J. A., Nat. Mil. Home.
McFarlin, J. T., Williams.
Miller, H. H., Galveston.
Niblack, E. S., Terre Haute.
Ritter, M. T., Angola.
Whitesides, L. L., Franklin.
Westover, R. L., Indianapolis.

IND. TERRITORY.

Looney, R. E., Lindsay.

IOWA.

Burgess, J. A. W., Iowa Falls.
Brubaker, J. F., Hubbard.
Bridgman, J. C., Radcliffe.
Breniman, E. M., Ackley.
Butler, F. P., Whitten.
Bartran, R. T., Albia.
Corbit, A. B., Wyoming.
Caldwell, J. W., Steamboat Rock.
Caldwell, J. Willard, Steamboat Rock.
Conner, F. H., Nevada.
Cronk, C. H., Bloomfield.
Dittmer, H. A., Manchester.
Evans, F. J., Iowa Falls.
Hobson, A. J., Hampton.
Hunter, W. W., Monticello.
Hartman, F. T., Waterloo.
Jones, E. H., Eldora.
Koeneman, E. O., Eldora.
Lowder, Wm., New Providence.
McLaughlin, C. W., Washington.
Miller, J. J., Ackley.
Moore, M. F., Martinsburg.
Mabee, C. O., New Providence.
Marsh, W. E., Eldora.
Morton, L. B., Iowa Falls.
Murphy, F. J., Sioux City.
Pagelson, O. H., Iowa Falls.
Petrovitsky, J. S., Cedar Rapids.
Rabe, F. L., Hubbard.
Roberts, W. P., Cleghorn.
Scarborough, H. V., Grand Junction.
Sanders, W. E., Alta.
Stone, Guy, Keswick.
Sherman, A. M., Grinnell.
Trimble, C. S., Buckeye.
Underwood, R. B., Eldora.
Vroom, C. W., Ackley.
Wood, P. R., Marshalltown.
Walker, J. R., Ft. Madison.
Whitney, W. E., Eldora.
Willett, C. C., Whitten.
Wray, C. M., Lawton.
White, E. E., Huxley.

KANSAS.

Boss, J. H., Weir City.
Buley, D. G., Valley Center.
Blades, S. T., Scottsville.
Chadwick, I. B., Tyro.
Fabrigur, A. H., Wichita.
Holt, T. T., Geudo Springs.
Hartwell, G. N., Jamestown.
Hardesty, H. O., Jennings.
Humfreville, D. W., Waterville.
McManis, J. E., Havensville.
Nichols, S., Herington.
Nye, W. W., Hiawatha.
Shelton, F. W., Independence.
Snyder, H. G., Seneca.
Spitler, S. W., Wellington.
Shannon, L. W., Hiawatha.
Ullman, J. F., Simpson.
Wilson, W. P., Westmoreland.

KENTUCKY.

Hendon, G. A., Louisville.
Lex, E. A., Louisville.
Mosely, J. C., Henderson.
Price, A. D., Harrodsburg.

LOUISIANA.

Burley, C. H., Monterey.
Feucht, E. P., Laplace.

MAINE.

Merrill, H. P., Portland.
Price, W. N., Richmond.
Washburn, G. E., Augusta.
Walton, R. D., Frankfort.

MARYLAND.

Davidson, C. F., Easton.
Goodman, J. M., Frederick.
Hall, R. M., Baltimore.
Harrison, H. T., Loch Raven.
Kahn, H., Baltimore.
Legge, J. E., Oakland.
McNeer, R. L., Baltimore.
Magruder, W. E., Cany Spring.
Spear, I. J., Baltimore.
Seymour, W. S., Trappe.
Wilcox, F. W., Baltimore.

MASSACHUSETTS.

Bacon, T. S., Cambridge.
Chase, E. L., Shrewsbury.
Cunningham, J. H., Jr., Boston.
Dwight, Thos., Nahant, Mass.
Glendenning, R. T., Manchester.
Hunt, W. O., Newtonville.
Haines, I., Cambridge.
Hubbard, J. C., Boston.
Jackson, H. B., Melrose.
Murdock, F. W., Brockton.
McPherson, G. E., S. Boston.
Morse, F. L., Somerville.
Murphy, E. M., Lowell.
Newhall, H. W., Lynn.
Nichols, J. H., Tewksbury.
Osborne, C. A., Worcester.
Porter, R. B., North Easton.
Richardson, F. L., Concord.
Tyrode, M. V., Boston.
Trainor, J. B., Fall River.
Wadsworth, O. F., Boston.
Whiton, R. K., Quincy.

MICHIGAN.

Baird, R. H., Howell.
Brook, J. D., Grandville.
Bryant, S. E., Dowagiac.
Elmer, W. P., Ann Arbor.
Hart, A. O., Maple Rapids.
Hewitt, H. W., Detroit.
Johnson, B. F. P., Rosebush.
McCarroll, Wm., Pontiac.
McKnight, E. E., Alpena.
Matchette, W. H., Hancock.
McBean, Jas. C., Applegate.
Shattuck, G. S., Detroit.
Sigel, T., Detroit.
Wessinger, J. A., Ann Arbor.

MINNESOTA.

Barsness, N. O. N., St. Paul.
Cowles, D. C., Minneapolis.
Dart, L. O., Minneapolis.
Hougan, O. M., Fergus Falls.
Pare, L. T., Duluth.
Rutledge, J. W., Minneapolis.
Salter, W. H., Duluth.
Stuart, J. H., Minneapolis.
Sawyer, H. P., Goodhue.
Theissen, W. N., Henderson.
Whitacre, J. C., St. Paul.

MISSISSIPPI.

Rauch, E. S., Vicksburg.
Simmons, C. L., McBride.

MISSOURI.

Austin, M. B., Brunswick.
Clagett, O. F., Jamesport.
Crawford, H. S., Harrisonville.
Davenport, R. G., Trenton.
Fleming, A. W., St. Louis.
Guibor, H. F., St. Louis.
Gashwiler, —, Novinger.
Hall, D. W., Kansas City.
Matlock, C. E., St. Louis.
Moore, E., St. Louis.
Miller, H., Kansas City.
Schulte, F. A., St. Louis.
Smith, B. T., Newburg.
Trimble, W. K., Kansas City.

MONTANA.

Lilly, A. H., Butte.
Moore, T. B., Butte.
Pampol, B. L., Livingston.
Pigot, C. T., Butte.

NEBRASKA.

Guttery, J. D., Valparaiso.
Isaacs, D., Winside.
Kraft, F. E., So. Auburn.
Quigley, D. T., No. Platte.
Robbins, E. E., Hastings.
Smrha, V. V., Milligan.

NEW HAMPSHIRE.

Locke, E. M., Nashau.
Palmer, H., Plymouth.

NEW JERSEY.

Baker, R. D., Summit.
Drummond, E. A., Newark.
Hoagland, G. G., Keyport.
Leonard, E., Jersey City.
Martland, W. H., Newark.

NEW MEXICO.

Smith, H. M., Las Vegas.
Thomson, R. J., Santa Rosa.
Yoakam, F. A., Cerrillos.

NEW YORK.

Benedict, A. J., Newburgh.
Berlin, F. F. R., New York.
Cooke, W. S., New York.
Conklin, R. C., Batavia.
Comfort, C. G. V., Rochester.
Dort, E., Buffalo.
Duggan, John, Albion.
Eytinge, O. J., Brooklyn.
Fuller, N. H., Friendship.
Friedman, L. A., New York.
Gross, M., New York.
Grady, J. J., New York.
Glenny, W. H., Buffalo.
Griggs, E. C., Ithaca.
Herst, S., New York.
Hopkins, F. T., New York.
Holland, A. L., New York.
Jackson, C. R., New York.
Latham, O. N., Bolivar.
Leibermann, J. M., New York.
Lewson, M., New York.
Lo Pinto, J., New York.
Lytle, C. G., Geneva.
McBurney, Charles, New York.
Meisburger, W., Buffalo.
Mooney, L. M., New York.
MacCoy, C., Brooklyn.
McParlan, J. P., New York.
Neal, V. F., Ellenville.
Nicolai, C., New York.
Preisch, E. L., Lockport.
Page, C. C., New York.
Pattison, W. E., Westport.
Potter, I. W., Buffalo.
Remington, A. C., Rochester.
Rushmore, E. C., Tuxedo Park.
Stewart, E. W., Hume.
Sayres, C. O., Belfast.
Stein, S. A., New York.
Woodroff, C. E., Plattsburg.
Winter, H. L., Cornwall.
Wheeler, D. E., Buffalo.

NORTH CAROLINA.

Austin, J. A., Charlotte.
Busby, J. G., Spencer.
Anders, McG., Connelly Springs.
Davis, R. L., Bryson City.
Harrill, L. B., Caroleen.

Joyner, R. W., Woodland.
Patrick, G. R., Lowell.
Reitzel, J. R., High Point.

NORTH DAKOTA.

Bates, W. H., Grand Forkes.
Burton, P. H., Fargo.
Claybaugh, W. R., Litchfield.
O'Brien, T., Wahpeton.

OHIO .

Bennett, J. H., Youngstown.
Blott, H. E., Youngstown.
Browning, C. H., Oberlin.
Brainerd, H. C., Cleveland.
Coe, E. W., Youngstown.
Christopher, W. H., London.
Crawford, G. M., Lorain.
Costello, T. A., Cleveland.
Dye, J. H., Cleveland.
Easton, J. C., Springfield.
Feiss, H. O., Cleveland.
Freeman, C. D., Medina.
Hawes, S. A., Greenville.
Hutchins, F. C., Cleveland.
Ingraham, F., Curtice.
Jacobs, H. H., Akron.
Kahn, M., Cleveland.
McPeck, E. E., Cleveland.
Pearson, G. L., Youngstown.
Parrish, R. C., Youngstown.
Ruel, J. J., Cleveland.
Runyan, M. T., Oberlin.
Snyder, F. D., Ashtabula.
Stone, W. J., Toledo.
Sharkey, B., Middletown.
Whitslar, W. H., Cleveland.
Williams, C. D., Cleveland.
Yocum, L. A., Wooster.
Yates, E. A., Kirkwood.

OKLAHOMA.

Beall, C. G., Oklahoma City.
Hahn, L. A., Guthrie.
Mitchell, E. B., Anadarko.
Steagall, T. R., Blackwell.

OREGON.

Belt, W. C., Portland.
Booth, W. H., Lebanon.
Bailey, A. B., Hillsboro.
Bailey, F. J., Hillsboro.
Boyd, W. H., Portland.
Braden, W. B., Portland.
Bristow, J. H., Portland.
Cathey, B. A., Corvallis.
Chilton, L. W., Canyon City.
Carrico, J. H., Woodburn.
De Vaul, O., Portland.
Douglas, G. H., Grant's Pass.
De Armond, R. S., Grant's Pass.
Ellis, M. H., Albany.
Farra, G. R., Corvallis.
Gullette, Fred, Portland.
Harris, J. W., Eugene.
Holcomb, C., Portland.
Hall, J. E., Clatskanie.
Hawke, C. E., Portland.
Harris, T. W., Eugene.
Hockett, C. T., Cottage Grove.
Hawk, W. C., Jefferson.
Jayne, R. A., Springfield.
Johnson, E. D., Portland.
Kime, A. W., Cottage Grove.
Kistner, F. B., Heppner.
Lane, H., Portland.
Lee, C. H., Corvallis.
Lewis, W. E., Seaside.
Lowe, J. M., The Dalles.
Mattson, R. C., Portland.
Marsh, R. J., Portland.
Prill, A. G., Scio.
Pernot, H. S., Corvallis.
Pogue, G. A., Ontario.
Pearce, C. M., Sumpter.
Pierce, E. A., Salem.
Ringo, R. E., Pendleton.
Robinson, F. M., Beaverton.
Rosenberg, J. H., Primeville.
Stott, J. S., Portland.
Scarbrough, L. D., Creswell.
Sternberg, J. D., Portland.
Silover, F. E., Eugene.
Smith, F. E., Salem.
Shaw, H. M., Ashland.
Trimble, W. A., Albany.
Timms, E. D., Portland.
Wood, W. D., Hillsboro.
Wade, C. E., Drain.
Watt, J. F., Hood River.
Wells, G. M., Portland.

PENNSYLVANIA.

Allen, C. W., Ambridge.
Bland, P. B., Philadelphia.
Baker, F. N., Media.
Brubaker, A. P., Philadelphia.
Crow, A. E., Uniontown.
Campbell, O. C., Philadelphia.
Frantz, G. B., Coal Center.
Gilliland, S. H., Philadelphia.
Horning, S. B., Lower Providence.
Hersman, C. C., Pittsburg.
Kachline, J. C., So. Bethlehem.
Linn, C. F., Monongahela.
Mitchell, C. F., Philadelphia.
McGrath, J. F., Pittsburg.
Maxwell, J. R., Parkersburg.
Remington A H., Philadelphia.
Rugh, W. J., Pittsburg.
Stayer, A. S., Altoona.
Sommer, H. J., Jr., Norristown.
Stranahan, G. W., Erie.
Taylor, F. H., Uniontown.
Voigt, C. H., Allegheny.
Weber, C. Z., Norristown.
Wormser, B. B., Scranton.
Zern, J. G., Lehighton.

RHODE ISLAND.

Brown, F. N., Providence.
Graham, S. P., Providence.
Kirby, W. W., Providence.
O'Neil, J. E., Providence.

SOUTH CAROLINA.

Buist, A. J., Charleston.
Giles, C. T. J., Greenville.
Johnston, J. G., Chester.
Wilson, J. R., Charleston.
Wylie, A. M., Chester.

SOUTH DAKOTA.

Carson, S. L., Lower Brule.
Frink, O. G., So. Shore.
Keller, W. F., Sioux Falls.
Townsend, L. J., Belle Fourche.

TENNESSEE.

Lewis, A. W., McCays, Tenn.
McRady, F. S., Petersburg.
Turner, A. E., Neboville.

TEXAS.

Adams, W. J., Robert Lee.
Huffaker, D. H., El Paso.
De Steigner, J. R., San Marcus.
Lester, H. B., Corsicana.
Lay, J. E., Jr., Sweet Home.
Latham, W. W., Porter Springs.
Simmons, C. B., Decatur.
White, A. H., El Paso.

UTAH.

Field, G. J., Eureka.
Stewart, M. R., Salt Lake City.
Stookey, W. M., Lehi, Utah.
Pinkerton, S. H., Salt Lake City.
Wade, W. A., Payson.

VERMONT.

Hunter, J. W., Jr., Norfolk.
Perkins, H. B., Croton.

VIRGINIA.

Clark, J. P., Lynchburg.
Tulloss, W. R., Haymarket.
Wiseman, H. A., Jr., Danville.

WASHINGTON.

Allen, H. E., Seattle.
Adair, B. A. O., No. Yakima.
Baker, B. L., Everett.
Cardwell, W. C., Pomeroy.
Coberly, L. J., Garfield.
Douglas, Wm., Tacoma.
De Beck, D., Seattle.
Engels, C. F., Ballard.
Ferguson, T. D., Colfax.
Fitch, H. J., Ellensburg.
Greene, H. M., La Crosse.
Gaines, W. S., Oakesdale.
Gibson, W. E., Issaquah.
Hood, C. S., Ferndale.
Ingram, J. W., Walla Walla.
Johnson, S. H., Bellingham.
Kinnear, C. H., Tacoma.
Keith, R. L., Seattle.
Kennecott, G. W., Chehalis.
Lyons, J. H., Seattle.
Luce, F. H., Davenport.
Morrison, W. F., Spokane.
Matthews, A. A., Spokane.
Maguire, Edw., Pullman.
Rose, F., Spokane.
Robins, M. C., Spokane.
Stevens, E. W., Dryad.
Shannon, W. A., Seattle.
Stafford, E. A., Snohomish.
Sellors, Wm., Spokane.
Stuht, A. E., Colfax.
Swearingen, P. B., Tacoma.
Smith, J. S., Bellingham.
Sargentich, S., Tacoma.
Woodin, S. P., Georgetown.
Wotherspoon, John, Seattle.
Warmburg, G. F., Seattle.
Wing, P. R., Tacoma.
West, W. F., Everett.

WEST VIRGINIA.

Henry, C. O., Fairmont.
Martin, E. T., Keyser.
Riedy, J. A., Monongah.
Slusher, W. C., Burnwell.
Walkinshaw, J. B., Wellsburg.

WISCONSIN.

Ashum, D. W., Eau Claire.
Bock, O. B., Sheboygan.
Bartran, W. H., Green Bay.
Christensen, J. W., Kendall.
Cleary, J. L., Kenosha.
Dahl, L. A., Stanley.
Elliott, S. T., Richland Center.
Fulton, W. A., Burlington.
Finstad, G. J., Menomonee.
Gibbs, G. L., Marshall.
Kitzki, W., Manawa.
Kelly, D. M., Baraboo.
Muth, Carl, Sheboygan.
Milbee, H. H., Marshfield.
Maurer, A. A., La Crosse.
Moody, L., Superior.
McDonald, H. F., Hollandale.
Neilson, W. H., Milwaukee.
Orchard, H. J., Superior.
Peterson, G. E., Waukesha.
Ridgman, A. L., Grand Rapids.
Senn, F. C., Oshkosh.
Scheib, G. F., Fond du Lac.
Trevitt, A. W., Wausau.
Teich, Wm., Milwaukee.
Zilisch, W. E., Hortonville.

WYOMING.

Bradfield, J. H., Sheridan.

State Boards of Registration

COMING EXAMINATIONS.

State Board of Medical Examiners of California, San Francisco, August 15. Secretary, Charles L. Tisdale, San Francisco.

Wyoming State Board of Medical Examiners, State Capitol, Cheyenne, Wyo., September 6. Secretary, S. B. Miller, Laramie.

Massachusetts Board of Registration in Medicine, State House, Boston, September 12-13. Secretary, E. B. Harvey, Boston.

Arkansas July Report.—Dr. J. P. Runyan, secretary of the State Medical Examining Board of the Arkansas Medical Society, reports the examination held at Little Rock, July 11, 1905. The number of subjects examined in was 7; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 28, of whom 19 were undergraduates; 18 passed, and 10 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
College of P. and S., Chicago (undergraduate)		85
Fisk University	(1900)	85
Flint Med. Coll. (undergraduates) 82, 76;	(1905)	80
Memphis Hosp. Med. Coll. (undergraduate)		76
Barnes Med. Coll. (1904) 78; (undergraduate)		81
Washington University (undergraduate) 80;	(1903)	84
Tulane and Vanderbilt Univs. (undergraduate)		92
Tulane University (undergraduate) 75;	(1905)	94
Shaw University (undergraduate)		81
Milwaukee Med. Coll.		94
University of Nashville (undergraduate)		83
University of Missouri (undergraduate)		75
Medico-Chirurgical, Kansas City	(1905)	78
FAILED.		
Galveston and Memphis Hosp. Med. Coll. (undergraduate)		43
University of Missouri (undergraduate)		53
University of Nashville and Baylor Med. Coll. (undergraduate)		69
Universities of Arkansas and Nashville (undergraduate)		58
Flint Med. Coll.	(1905)	59
Tulane University (undergraduate)		66
Louisville Med. Coll. and Tulane Univ. (undergraduate)		63
Knoxville Med. Coll.	(1903)	69
Memphis Hosp. Med. Coll. (undergraduate)		58
Memphis Hosp. Med. Coll. and Barnes Med. Coll. (undergraduate)		67

South Carolina June Report.—Dr. W. M. Lester, secretary of the South Carolina State Board of Medical Examiners, reports the written examination held at Columbia, June 13-15, 1905. The number of subjects examined in was 18; total number of questions asked, 95; percentage required to pass, 75, and not less than 60 on any subject. The total number of applicants examined was 66, of whom 44 passed and 22 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Medical Coll. of the State of South Carolina, (1900) 89.6: (1905) 77.2, 80.1, 81.2, 81.8, 82.1 82.6, 82.8, 83.2, 83.6, 83.8, 85, 85.3, 85.3, 86.3, 87.1, 88.1, 88.5, 93.2.		
University of Pennsylvania (1901) 89.1;	(1903)	89.6
Howard University	(1904)	81.7
University of Kentucky	(1904)	79.2
North Carolina Med. Coll. (1902) 76;	(1905)	80.1
College of P. & S., Chicago	(1905)	86.1
University of Nashville	(1905)	75.5, 82.3, 87, 92.7
Leonard Med. Coll.	(1902)	75
University of Maryland	(1904)	80.5, 81, 82, 78.6, 75, 83.7
Jefferson Med. Coll.	(1905)	78, 83.3
Tulane University	(1905)	79.7, 81
College of P. & S., Atlanta	(1900)	81.1
Baltimore Med. Coll.	(1905)	84
College of P. and S. Baltimore	(1904)	75
FAILED.		
Medical Coll. of the State of South Carolina, (1901) 60.2: (1905) 79.3,* 70.2, 78.6,* 76.8,* 78.8,* 79.8.*		
North Carolina Med. Coll.	(1903)	80.6*
University of the South	(1904)	74.1**
University of Kentucky	(1904)	79*
Leonard Med. Coll. (1889) 66.5;	(1905)	75*
Chattanooga Med. Coll.	(1905)	55.3, 59.3
University of Tennessee	(1905)	52.2
Meharry Med. Coll.	(1905)	75*
Maryland Med. Coll. (1904) 56.6;	(1905)	39.3
University of Maryland	(1905)	79.3*

Tulane University	(1904)	77.2*
Knoxville Med. Coll.	(1904)	69.7

* Below 60 per cent. on one or more subjects.
** Left examination on account of illness.

The general average attained by all representatives of the medical college of the state of South Carolina, who passed, was 84.5.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, week ending Aug. 5, 1905:

Halloran, Paul S., asst.-surgeon, leave of absence extended two months.

Ragan, Chas. A., asst.-surgeon, granted thirty days' leave of absence.

Clayton, Jere B., asst.-surgeon, assigned to duty at Fort Leavenworth, Kan., and granted fifteen days' leave of absence before reporting for duty.

Baker, David, asst.-surgeon, relieved from duty at Fort Leavenworth, Kans., and ordered to Fort Robinson, Neb., for duty.

Porter, Ralph S., asst.-surgeon, relieved from duty at Fort Niobrara, Neb., and ordered to Manila, P. I., for duty.

Woodbury, F. T., asst.-surgeon, ordered to accompany 3d Battalion, 5th Infantry, from Plattsburg Barracks, N. Y., to Sea Girt, N. J., for duty, and return with same.

Woodall, Wm. P., asst.-surgeon, left from detached duty at Fort Oglethorpe, Ga., on fifteen days' leave of absence.

Roberts, William, asst.-surgeon, ordered to accompany detachment from Fort Hamilton, N. Y., to Sea Girt, N. J., on Sept. 12, 1905, and remain at camp in charge of the medical department.

Wing, Franklin F., dental surgeon, granted leave of absence for one month, fifteen days, from Fort Riley, Kan.

Marshall, John S., examining and supervising dental surgeon, returned to the Presidio of San Francisco, from attendance on the American Medical Association and the Lewis and Clark Dental Congress at Portland, Ore.

Carpenter, Alden, dental surgeon, returned to Vancouver Barracks, Washington, from attendance on the Lewis and Clark Dental Congress at Portland, Ore.

Vaughan, Milton, contract surgeon, returned to Fort Douglas, Utah, from duty in the field, Strawberry Valley, Utah.

Macy, Fred S., contract surgeon, left Allegheny Arsenal, Pa., on leave of absence for ten days.

Warwick, Clarence A., contract surgeon, arrived from the Philippines Division on the transport *Warren*, for four months' leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Aug. 5, 1905:

Shipp, E. M., surgeon, orders to the *Charleston* revoked; ordered to the Navy Yard, New York, N. Y.

J. F. Leys and J. C. Thompson, surgeons, commissioned surgeons, with rank of lieutenant-commander, from March 3, 1903.

Furlong, F. M., P. A. surgeon, ordered to the Bureau of Medicine and Surgery, Navy Department.

Dessez, P. T., asst.-surgeon, ordered to the *Charleston*.

Ledbetter, R. E., P. A. surgeon, detached from the *Detroit* and ordered to the Naval Hospital, Boston.

Wise, J. C., medical director, detached from duty as a member of the Naval Medical Examining Board and Naval Retiring Board, Washington, D. C., August 10, and ordered to duty as president of the Naval Medical Examining Board, Naval Medical School, and to command Naval Medical School.

Marmion, R. A., medical director, detached from duty as president of the Naval Medical Examining Board, Naval Medical School, Washington, D. C., and from command of the Naval Medical School and ordered to duty as a member of the Naval Medical Examining Board and Naval Retiring Board, Mills Building, Washington, D. C.,

Munger, C. B., asst.-surgeon, ordered to the Naval Hospital, Norfolk, Va.

Marshall, E. R., asst.-surgeon, ordered to the Naval Hospital, Washington, D. C.

May, H. A., Asst.-surgeon, detached from the *Franklin* and ordered to the *Iowa*.

Sellers, F. E., acting asst.-surgeon, ordered to the *Franklin*.

Webb, U. R., P. A. surgeon, detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the Naval Academy.

Jennes, B. F., asst.-surgeon, detached from the *Iowa* and ordered home to wait orders.

Cole, H. W., asst.-surgeon, orders of July 31 modified: ordered to the Maine.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine Hospital Service for the seven days ending Aug. 2, 1905:

Magruder, G. M., surgeon, designated as member of Revenue Cutter Service retiring board at San Francisco, Aug. 10, 1905.

Wertenbaker, C. P., surgeon, relieived from duty at Havana, Cuba, and directed to proceed to Tampa, Fla., Montgomery, Ala., and Atlanta, Ga., for special temporary duty.

Cumming, H. S., P. A. surgeon, designated as member of Revenue Cutter Service retiring board at San Francisco, August 10.

Corput, G. M., P. A. surgeon, relieved from duty at the Marine Hospital, New Orleans.

Currie, D. H., P. A. surgeon, department letter of July 1, 1905, granting leave of absence for two months from July 6, 1905, amended to read two months from July 18.

Goldberger, Jos., P. A. surgeoon, to proceed to Vicksburg, Miss., and Shreveport, La., and other places in Mississippi and Louisiana, for special temporary duty.

Berry, T. D., P. A. surgeon, to rejoin station at New York, and then to proceed to New Orleans and to report to Surgeon J. H White for special temporary duty.

Burkhalter, J. T., asst.-surgeon, leave of absence for one month on account of sickness, granted by bureau letter of July 17, 1905, revoked.

Wightman, W. M., asst.-surgeon, granted extension of leave of absence for seven days from August 9.

Spratt, R. D., asst.-surgeon, to proceed to Gulf quarantine station and report to medical officer in command for temporary duty.

Hallett, E. B., acting asst.-surgeon, granted leave of absence for four days from July 28.

Kennard, K. S., acting asst.-surgeon, granted leave of absence for twenty-one days from August 7.

Marr, H., acting asst.-surgeon, granted leave of absence for twenty-one days, from August 21.

Sinclair, A. N., acting asst.-surgeon, department letter of July 10, 1905, granting leave of absence for thirty days from July 8, amended to read thirty days from July 12.

Williamson, S. D., acting asst.-surgeon, granted extension of leave of absence for twenty-two days, from July 31.

MacDowell, W. F., pharmacist, granted leave of absence for thirty days, from August 10.

Carlton, C. G., pharmacist, leave of absence for twenty-nine days, from July 24, 1905, revoked.

Morris, G. A., pharmacist, to proceed to New Orleans, and report to Surgeon J. H. White for special temporary duty.

BOARD CONVENED.

Board to meet at the Marine Hospital, Portland, Me., July 31, 1905, for the physical examinaton of an officer of the Revenue Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; Acting Assistant Surgeon A. F. Stuart, recorder.

PROMOTIONS.

Assistant Surgeon M. W. Glover, commissioned (recess) as P. A. surgeon, to rank as such from April 13, 1905.

Assistant Surgeon B. H. Earle, commissioned (recess) as P. A. surgeon, to rank as such from April 13, 1905.

Assistant Surgeon C. C. Pierce, commissioned (recess) as P. A. surgeon, to rank as such from June 27, 1905.

Health Reports.

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the period from July 15 to July 29, 1905:

SMALLPOX—UNITED STATES.

California: Los Angeles, July 8-15, 4 cases.
District of Columbia: Washington, July 15-22, 1 case.
Illinois: Chicago, July 15-22, 11 cases, 1 death.
Indiana: South Bend, July 15-22, 1 case.
Michigan: Grand Rapids, July 15-22, 5 cases, 1 death.
Missouri: St. Joseph, July 8-15, 4 cases.
New York: Rome, July 15-22, 1 case.
Ohio: Cincinnati, May 19-June 2, 9 cases; June 8-23, 6 cases.
Pennsylvania: York, July 15-22, 11 cases.
Wisconsin: Appleton, July 15-22, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Colony, Cape Town, June 18-24, 3 cases.
Brazil: Rio de Janeiro, June 11-July 2, 32 cases, 21 deaths.
Chile: At Ports, June 14, present.
France: Lyon, July 2-9, 1 case; Paris, July 1-8, 10 cases, 1 death.
Great Britain: Birmingham, July 1-8, 1 case; Bristol, July 8-15, 1 case; Cardiff, 3 cases; Newcastle-on-Tyne, July 1-8, 5 cases.
Greece: Athens, June 24-July 1, 1 death.
India: Bombay, June 13-27, 19 deaths; Calcutta, June 10-17, 2 deaths; Karachi, June 11-25, 3 cases, 1 death; Madras, June 10-23, 5 deaths.
Italy: General, June 29-July 6, 8 cases; Catania, 3 deaths; Messina, June 25-July 2, 1 case; Palermo, July 1-8, 1 case.
Mexico: City of Mexico, June 24-July 15, 20 cases, 10 deaths.
Canada: New Brunswick, St. John, July 14, 1 case, imported.
Panama: Bocas del Toro, July 1-7, 1 case, imported.
Russia: Moscow, June 17-July 1, 9 cases, 6 deaths; Odessa, June 25-July 8, 10 cases, 1 death; St. Petersburg, June 24-July 1, 13 cases, 2 deaths.
Spain: Barcelona, June 1-10, 2 cases.
Turkey: Constantinople, June 18-25, 4 cases.
Venezuela: Maracaibo, June 6-July 2, 4 cases, 4 deaths.
West Indies: Grenada, June 15-29, 5 cases.

YELLOW FEVER—UNITED STATES

Florida: Tampa, July 28, 1 case.
Louisiana: New Orleans, July 21-26, 73 cases, 22 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, June 11-July 2, 84 cases, 40 deaths.
British Honduras: Belize, July 6-13, 1 case.
Honduras: Choloma, July 7, present; Puerto Cortez, July 1-17, 20 cases, 4 deaths; San Pedro, July 15, 200 cases; 15 deaths.
Mexico: Coatzacoalcos, July 9-15, 2 cases; Tierra Blanca, 3 cases, 1 death; Vera Cruz, 1 case, July 23-25, 4 cases.
Panama: Colon, July 2-11, 5 cases, 1 death.

CHOLERA.

India: Bombay, June 13-20, 3 cases; Calcutta, June 10-17, 8 deaths; Madras, June 17-23, 1 death.

PLAGUE—FOREIGN.

Africa: Cape Colony, East, London, June 3-24, 6 cases, 3 deaths; King Williams Town, June 17-24, 1 case.
Brazil: Rio de Janeiro, June 18-July 2, 6 cases, 2 deaths.
China: Hongkong, May 13-20, 20 cases, 19 deaths.
Egypt: General, June 10-24, 25 cases, 16 deaths.
India: Bombay, June 4-27, 221 deaths; Calcutta, June 10-17, 37 deaths; Karachi, June 11-25, 85 deaths; Madras, June 10-16, 1 death.
Japan: Formosa, May 1-31, 734 cases, 622 deaths, June 1-20, 213 cases, 184 deaths.
Peru: Callao, June 1-10, 1 case; Cerro de Paseo, 1 case, 1 death; Lima, June 1-10, 6 cases, 2 deaths; Mollendo, June 1-10, 1 case, 2 deaths.

Society Proceedings

AMERICAN ASSOCIATION OF LIFE INSURANCE EXAMINING SURGEONS.

Sixth Annual Meeting, held at Portland, Ore., July 10, 1905,

The President, Dr. Denslow Lewis, Chicago, in the Chair.

(*Concluded from Page 418.*)

The Recognition of Drug Addictions in Life Insurance.

Dr. T. D. Crothers, Hartford, Conn., said that 30 per cent. or more of all alcoholics also take drugs. He divided the drug-takers into two classes, the simple and the complex, and gave a summary of some of the facts on which the recognition of drug addiction must turn. He believes that a careful examination of the sight, hearing, taste and smell will generally show the condition, notwithstanding the denials of the applicant, and that when psychologic studies of applicants for life insurance are made with as much minuteness as examinations of the heart, urine and blood, the hazardous risk of drug-takers as healthy normal persons will be eliminated.

Dr. J. T. Priestley, Des Moines, thought that the insurance companies suffered more from the drug-taker than any other class of people.

Dr. J. Allen Gilbert, Portland, thought too little attention was given to this phase of examinations and referred to a series of tests which he employed in examining the nervous system.

The address of the president, Dr. Denslow Lewis, Chicago, was on the subject: "The Medical Examiner and His Work."

Women as Risks.

Dr. Mae H. Cardwell, Portland, Ore., commented on the physical and moral conditions of women which make for or against their eligibility as risks in insurance. Until women have become financial independents they will never be equal factors for the consideration of the companies. Statistics of the life of the female should be created. The mortality in men from the effects of liquor is vastly in excess of that of women. Deaths from kidney infection through gonorrhea are as common among men as are deaths in women from the same infection of the generative apparatus. She strongly recommended that physical examination of women for insurance be extended to palpation and inspection of the pelvis, unless satisfactory evidence is given that the organs are healthy. Loyalty to the companies should prompt a warning to the applicants against habits which may develop disease, yet this warning may be exaggerated by a nervous woman. Suicide in business women is a danger to be considered.

DISCUSSION.

Dr. H. G. Brainerd, Los Angeles, thought the position of women as risks a question yet to be determined. It would add much to the willingness of companies to take such risks if it were known that the pelvic organs were in good condition.

Dr. J. Allen Gilbert, Portland, insisted the pelvis ought to be examined.

Dr. Amos, Portland, spoke of the difficulty of finding the evidence of gonorrhea even when the disease is known to exist.

Dr. W. J. Means, Columbus, said that in his experience in the examination of women for fraternal insurance he has found a lower mortality among women than among men.

Dr. A. Merrill Miller, Danville, spoke of the difficulty of examining a woman at her home, and of the reluctance of a woman to submit to the ordeal of an examination when she realizes its extent.

Dr. J. R. Wetherbee, Portland, referred to the necessity for pelvic examination brought to his attention by operations. The conditions which caused the operations would have been revealed by a pelvic examination at the time insurance was issued.

Dr. Cardwell said that she believed a large majority of women would submit to pelvic examinations if the requirements were printed in the application. She does not feel that the drug habit is so important a question among women as that of suicide.

The Relation of the Life Insurance Examiner to Local Sanitation.

Dr. J. R. Wetherbee, Portland, said that the function of a physician as a life insurance examiner should not only be to report the facts concerning a given risk, but to see that the forces in his locality which tend to raise or lower the mortality receive attention. Few physicians know where the sewers of their respective cities empty their contents. In his opinion equal responsibility rests on the physician in the matter of educating the public in the prevention of tuberculosis. He called attention to combination policies which furnish indemnity against loss of health as well as loss of life on the same principles as fire insurance. Should this policy become universal, the responsibility of the insurance examiner for the local sanitary conditions would be even greater. Wetherbee attributed the reduction of mortality from typhoid in Portland to the introduction of absolutely pure water from the perpetual snows of Mt. Hood. From this standpoint alone much money is saved to the local life insurance companies.

DISCUSSION.

Dr. Denslow Lewis thought the amount of attention given by the public sanitarians not commensurate with the importance of the subject. He agreed with Dr. Wetherbee in his remarks concerning typhoid.

Dr. John S. Lankford, San Antonio, directed attention to the importance of educating the school children in matters of health. In San Antonio school children have studied the various stages of development of the mosquito and many have been killed by the children. Hence, malaria has greatly decreased. He believes that if the children are educated in this respect when they become citizens the sanitary conditions will be properly adjusted.

Dr. M. H. Cardwell, Portland, thought the hope of the people was entirely with the young, and that this work should be taken up by educational boards. The subject of ventilation as a preventive of disease should be studied by insurance companies.

Suppurations in the Temporal Bone, and their Practical Relation to Life Insurance.

Dr. John F. Barnhill, Indianapolis, discussed the following phases: 1. What symptoms given by the patient and what pathologic conditions found in the diseased ear should be regarded as sufficiently dangerous to reject the applicant? 2. Under what circumstances as to the condition of the discharging ear may the applicant be considered a safe risk? 3. Under what conditions as to the diseased ear should the applicant's case be postponed, and when after medicinal or surgical treatment may insurance be safely issued? He believes that no just decision as to whether or not any applicant is non-insurable can be made unless there be taken into consideration the symptoms obtainable from the person himself, together with the absolute facts obtained from the most thorough, painstaking and accurate examination of the condition of the middle ear and its accessory cavities. There are many suppurating ears which may continue indefinitely, without serious risk to life. The deep cavities of the middle ear must be thoroughly inspected by an experienced aurist. In the present highly developed state of the otologic science there are but few discharging ears that can not be cured, and the patient, therefore, may become an entirely safe risk in so far as the ear condition is concerned.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, held June 27, 1905.

The President, Dr. Dudley Tait, in the Chair.

Diaphragmatic Grooves on the Liver.

Dr. R. O. Moody stated that two classes of grooves occur on the liver, those running parallel to the ribs and apparently due to the impression left by the ribs on the liver, occurring most frequently in women who lace, and grooves running in the opposite direction, i. e., parallel to the falciform ligament, and which have been termed diaphragmatic grooves. These grooves are found in about 40 per cent. of bodies coming to autopsy, usually on the upper and anterior surface of the right lobe. They may be simple or multiple, as many as nine being found on one of the cases reported. In form they vary from mere slits to more or less wide furrows, being one to eighteen millimeters deep and one and a half to eleven centimeters long. They occur with greatest frequency in old people, but they may be found even in the fetus, three of the latter class being on record. Among the causes believed to be responsible for these grooves are congenital changes in the diaphragm, constriction of the thorax or abdomen by tight clothing, irregularities on the diaphragm produced by such causes as diaphragmatic pleurisy or local peritonitis and a relatively too rapid growth of the liver for the size of the abdominal cavity, which throws the former into folds.

Dr. George Blumer stated that he had often noticed these folds at autopsy and that they seemed to occur more frequently in women than in men, especially in women who had laced.

Dr. Dudley Tait called attention to the importance of a knowledge of these grooves, because they may be encountered at exploratory operations.

The Relation of Hodgkin's Disease to Lymphosarcoma.

Dr. H. W. Gibbons called attention to the great confusion that has arisen in the literature relative to the nature of certain enlargements of the lymphatic glands. Lymphosarcoma is distinguished from Hodgkin's disease, clinically, by the fact that the growth does not remain confined to the lymphatic tissue, but tends to infiltrate the surrounding tissues. Reed, Longcope, and Simmons have shown that Hodgkin's disease is characterized by a definite microscopic picture, differing from the microscopic pictures of both glandular tuberculosis and lymphosarcoma. Of the nine cases studied by the speaker, all presented the typical microscopic characteristics of Hodgkin's disease, with this important exception, that in every case the capsules of some glands were found to be infiltrated by the new growth. In 5 cases the new growth had broken through the capsule into the surrounding tissue and was enclosed by a new capsule. In two cases, involvement of the muscle, salivary glands, and fascia, had occurred. In the liver, in three cases, the tumor could be observed invading the walls of a vein and passing through them. Gibbons regards Hodgkin's disease as a malignant process rather than as a chronic infection. Yet it is still distinguishable from true lymphosarcoma by the nature of the cells that make up the tumor.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Spastic Constipation.

The differential diagnosis between atonic and spastic constipation is often very difficult and sometimes impossible, according to A. Albu of Berlin in *Med. Record.*

Spastic constipation, so he states, is found more frequently the more carefully it is sought for. In the female, at least 25 per cent. of the cases are of this form; and many of the most persistent cases of chronic constipation, refractory to all methods of treatment, are of this type. As the treatment of this form of constipation is diametrically opposite to the atonic form, it is not difficult to see why so many patients with constipation are treated for years without success.

Spastic constipation, according to Dr. Albu. is most frequently found in neurasthenic and hysterical individuals, most often females. They are weak, poorly nourished, somewhat pale and anemic and in the third or fourth decade of life.

A perfect knowledge of the syndrome of the malady, therefore, must be obtained in order to outline an intelligent course of treatment.

As these spasms sometimes develop on the basis of atony, every occasion for exciting them must be avoided. Every irritation of the intestines, and especially massage, which is very effective in the atonic form of constipation, must be avoided. He recommends the use of:

1. Warm or hot sitz baths for from 15 to 20 minutes at a time.

2. The application of hot compresses to the abdomen, which not only lessen the spasm, but relieve the colic.

3. Warm enemas of linseed oil or olive oil, one-quarter liter every evening, given in bed, with the hips elevated, or in the knee-elbow position, and retained over night if possible. The object of this treatment is not to produce bowel movements, but to act as a sedative on the spasm of the intestinal muscle, and should, therefore, remain in contact with it as long as possible.

4. As the best antispasmodic he recommends belladonna or atropin, the former given in the form of suppositories in doses of from three to five grains (.20-.30) two or three times daily.

5. Concerning the diet, the author has found a vegetable diet to be the best; the food must be carefully freed from all shells or other irritating particles. Patients may be allowed to partake of all sorts of wheaten bread, made of fine flour, prunes and cooked fruits, soups and broths. Milk is advisable if it does not constipate.

Alcohol, spices, cabbage, cucumbers, celery, radishes, cheese and similar articles of diet must be avoided.

6. The introduction of solid, hard rubber or wooden bougies into the rectum. These are allowed to remain in position for from 10 to 15 minutes every day. They should be lubricated with oil and introduced for five or ten centimeters.

The author does not recommend long and continual rest in bed, because the primary atony is, in this way, favored. On the other hand, he recommends exercise in the fresh air. A regular fattening cure is recommended only in the debilitated and intensely hysterical patients, and after other treatment has failed.

The large dose of belladonna recommended by the author should be noted.

Diarrhea and Dysentery.

Diarrhea, according to Hare in his *Pract. Ther.*, may be divided into: 1. That form due to catarrh, acute and chronic.

2. That form due to disordered innervation.

3. That due to diseased glands along the course of the gastrointestinal tract.

4. That due to ulceration, causing irritation and bloody stools.

The treatment of the first form, according to this author, consists primarily in the regulation of the diet, which should be chiefly of milk, boiled or predigested, or milk whey. Castor oil or other mild purges, such as magnesium sulphate, should be administered to clear the intestinal tract of fermenting food and mucus. To prevent griping he recommends that a sufficient amount of tincture of opium be added, also twenty to thirty (1.30-2.00) grams of sodium bicarbonate to render the bowel alkaline in reaction. A mustard plaster or other counter-irritant should be applied to the abdomen. If astringent treatment is necessary, he recommends the following combination:

℞.	Argenti nitratis	gr. ii	12
	Ext. hyoscyami	gr. v	30

M. Fiant pil. No. x. Sig.: One pill three times a day.

Or

℞.	Plumbi acetatis Ext. opii, āā	gr. ii	12

M. Fiant pil. No. x. Sig.: One pill three times a day.

If the catarrhal state is persistent, no remedy compares to the ammonium chlorid in doses of grains five (.30) every four hours. It may be combined with licorice and water. If the catarrhal state is exceedingly chronic and obstinate, potassium iodid given in doses of from three to five grains (.20-.30) is of value.

If the discharges still remain profuse and the patient becomes weakened, the following is recommended by this author:

℞.	Acidi sulphurici arom.	ʒiss	6
	Spts. chloroformi	ʒii	8
	Tinct. opii camph.	℥ii	60
	Syr. zingiberis q. s. ad	℥iv	120

M. Sig.: One desertspoonful every four hours.

Or

℞.	Tinct. kino.		
	Tinct. catechu co., āā	℥i	30
	Misturæ cretæ	℥iii	90
	Aquæ cinnamomi q. s. ad	℥iv	120

M. Sig.: Shake well and take one tablespoonful every three hours.

The second form of diarrhea, in which serous and watery purging is present, is that form in which the blood vessels of the intestine are relaxed and leaking, so to speak, and must be contracted, and for this purpose the following is recommended:

℞.	Acidi sulph. arom.	℥ss	15
	Olei cajuputi	gtt. xl	2|65
	Ext. hematoxyli flu.	ʒii	8
	Spts. chloroformi	ʒi	4
	Syr. zingiberis q. s. ad	℥iii	90

M. Sig.: One teaspoonful in water every two or three hours.

If the attacks are due to hepatic disorder, small doses of calomel should be administered to correct the inactivity of the liver and to clear out the intestinal tract.

The after-treatment consists in carefully regulating the diet, which should be composed of milk and milk foods.

The third class is found chiefly in children whose stools are fetid, green, spinach-like masses of half-digested food, and may be due to deficient glandular secretion. They are often cured by hydrochloric acid and pepsin. Powdered ipecac, grain ¼ to ½ (.015-.03) given three times a day is sometimes very valuable in this form of diarrhea.

The fourth type, dysentery, should be treated according to the cause. The intestinal tract should be cleared by calomel in full doses, unless contraindicated by great weakness of the patient. If the passages are slimy and bloody, 1/200 of a grain of the bichlorid of mercury every hour or two is of value. If much blood is preseent, high rectal injections of the following should be administered:

℞.	Aq. hamamelidis dest.		
	Aquæ, āā	℥ii	60

M. Sig.: Use as a rectal injection.

Or the following may be used as a rectal enema:

℞.	Sodii boratis		
	Tinct. benzoini, āā	ʒi	4
	Spts. camphoræ	℥i	30
	Aquæ	Oii	1000

M. Sig.: Use as a rectal injection.

If ulcers are present and old, the following is recommended:

℞.	Argenti nitratis	gr. x-xx	|65-1.30
	Aquæ destil	Oi	500

M. Sig.: Use as a rectal injection.

A salt solution may be used to follow the silver solution and to counteract its effect if it should prove too strong. Where mucus and pus are present Hare recommends irrigations of mercuric chlorid, 1/5000, or, if preferred for any reason, boric acid may be substituted in proportion of dram one (4.00) to the pint of water (500).

Tannic acid may also be used in the same manner as an astringent in strength of dram one (4.00) to a pint of water (500).

In the ordinary diarrheas occurring in summer, the following is recommended:

℞.	Acidi sulphurici arom	ʒii	8
	Tinct. opii	ʒiss	6
	Tinct. capsici	ʒss	2
	Tinct. card. co.	ʒvi	24
	Aq. menth. pip. q. s. ad	℥iv	120

M. Sig.: One tablespoonful four times a day in water.

When diarrhea is present unaccompanied by pain, the following is serviceable:

℞.	Tinct. opii camphoratæ	℥i	30
	Bismuthi subgal.	ʒiss	6
	Syr. zingiberis q. s. ad	℥ii	60

M. Sig.: Shake the bottle well and take one teaspoonful after each bowel movement.

In cases of diarrhea with vomiting, the following may be employed:

℞.	Bismuthi salicylatis		
	Sodii bicarb., āā	ʒiii	12
	Liq. morph. hydrochlor. (1 per cent.)	ʒiss	6
	Infusi calumbæ, q. s. ad	℥iv	120

M. Sig.: Shake well and take one tablespoonful every four hours until the symptoms are relieved.

Beasley recommends the following combinations, containing hematoxylin, in the treatment of the different forms of diarrhea:

℞.	Cretæ prep.	gr. xv	1|
	Pulv. tragacanthæ	gr. ii	|12
	Syr. simplicis		
	Tinct. Warburgii (N. F.), āā	ʒss	2
	Decoct. hematoxyli (5 per cent.) q. s. ad.	℥i	30

M. Sig.: At one dose and repeat three times daily.

[Warburg's tincture contains quinin gr. x (65) to the ounce (30), which is composed of aromatics.]

Or the following may be substituted for the foregoing combination:

℞.	Bismuthi salicylatis	gr. x	|65
	Mucil. tragacanthæ	ʒii	8
	Decoct. hematoxyli, q. s. ad	℥i	30

M. Sig.: At one dose and the amount repeated once every four hours.

℞.	Ext. hematoxyli liq.	ʒss	2
	Tinct. opii	m. v	|30
	Aquæ carophylli q. s. ad	℥i	30

M. Sig.: One such dose every four hours in cases of chronic diarrhea.

Or

℞.	Creosoti	m. ii	|12
	Ext. hematoxyli liq.	ʒi	4
	Misturæ cretæ q. s. ad	℥i	30

M. Sig.: At one dose and repeat every four hours.

Medicolegal

Admissibility of Evidence from Operation After Trial.—The Supreme Court of Kansas says that the case of Bousman vs. City of Stafford was brought to recover damages for injuries received in a fall caused by a defective sidewalk. The jury found against the plaintiff, perhaps as the result of a belief that his injuries were purely imaginary. As alleged by him, they were internal, and of such a character that their existence and origin could at the time of the trial only be shown by his own statements and by the opinions of medical experts. The trial was ended May 27. On June 26, but at the May term of court, the plaintiff filed a motion for a new trial on the ground of newly discovered evidence, the character of which was not stated in the motion. In support of this motion, which was heard at the next term of court, in October, there was introduced an affidavit of a surgeon stating that on August 12 he operated on the plaintiff, opening the abdomen, and found that, as the result of an injury, an intestine had been ruptured and an abscess had formed, from which various complications had ensued. The pertinence and importance of this evidence were not disputed, but the city contended that it was not sufficient to require the granting of a new trial, because it was merely cumulative. The court, however, does not think so. It says that the physicians could only give their opinions as experts on a matter necessarily involved in some doubt. The surgeon told of a plain physical fact, about which there could be no mistake. His evidence was not of the same character as theirs, and was not merely cumulative to any of it. In other words, the court holds that the testimony of a surgeon that, in the progress of an operation involving the opening of the abdomen of a patient, he found an intestine ruptured, is not merely cumulative to that of a physician that on an external examination he concluded that such a rupture probably existed. Nor does the court agree with the objection made to the granting of the motion for a new trial that the court had no right to consider the affidavit of the surgeon, for the reason that it related to a fact that was not known to the plaintiff and could not have been known to any one at the time the motion for a new trial was filed. It holds that, on the hearing of a motion for a new trial on the ground of newly discovered evidence, the inquiry is not limited to matters known to the applicant or within his contemplation when the motion was filed, but may include, as well, any that have been developed since that time. Wherefore, it ordered a new trial.

Practice of Medicine by Corporations.—The Supreme Court of Nebraska says that it was contended in State Electro-Medical Institute vs. State that said corporation had violated Chapter 55 of the Compiled Statutes of Nebraska of 1901, which is "An Act to Establish a State Board of Health, to Regulate the Practice of Medicine," etc. The particular provision which it was claimed had been violated was the one in Section 7: "It shall be unlawful for any person to practice medicine, surgery or obstetrics or any of the branches thereof, in this state, without first having applied for and obtained from the State Board of Health a license so to do." And the Supreme Court holds that, while a corporation is in some sense a person and for many purposes is so considered, yet it is not such a person as can be licensed to practice medicine. This corporation, therefore, not having a license, violated this law, if it practiced medicine, surgery, or obstetrics, or any of the branches thereof, within the meaning of the statute.

The statute, in Section 17, the court goes on to say, attempts to define what is meant by "practicing medicine:" "Any person shall be regarded as practicing medicine, within the meaning of this act, who shall operate or profess to heal or prescribe for or otherwise treat any physical or mental ailment of another." Exception is made of the "administration of ordinary household remedies" and in some other cases. The Supreme Court of Kansas has said: "The practice of medicine may be said to consist in three things: First, in judging the nature, character, and symptoms of the disease; second, in determining the proper remedy for the disease; third, in giving or prescribing the application of the remedy to the disease." Underwood vs. Scott (Kan.), 23 Pac. Rep., 942. There was no necessity of legislation to prohibit corporations, as such, from practicing medicine. It is impossible to conceive of an impersonal entity "judging the nature, character and symptoms of the disease," or "determining the proper remedy," or giving or prescribing the application of the remedy to the disease. Members of the corporation, or persons in its employ, might do these things, but the corporation itself is incapable to do them. The qualification of a medical practitioner is personal to himself. The intention of the law is that one who undertakes to judge the nature of a disease, or to determine the proper remedy therefor, or to apply the remedy, must have certain personal qualifications; and if he does these things without having complied with the law he is subject to its penalties. Making contracts is not practicing medicine. Collecting the compensation therefor is not practicing medicine within the meaning of this statute. No professional qualifications are requisite for doing these things.

In other words, the court holds that qualified and licensed physicians may form a corporation and make contracts for the services of its members and other licensed physicians. Making such contracts and furnishing services of qualified and licensed physicians thereunder is not a violation of said Section 7 forbidding the practice of medicine without a license.

It was urged that no one not himself licensed to practice can be beneficially interested in the practice of medicine, and that it is contrary to public policy, and therefore unlawful, for a person or corporation not competent to practice medicine to be beneficially interested in such practice and to be allowed to receive compensation for the services of one who is qualified. For the discussion of this question the court refers to the companion case of State Electro-Medical Institute vs. Platner, decided the same day, which, however, is "not to be officially reported," but may be found in the advance sheets of 103 Northwestern Reporter, 1079. In this latter case the court says that the construction that no person may profit by or enforce an agreement for the practice of medicine, except he is qualified and licensed for the practice of the profession, would prevent action in the name of any assignee of a physician's claim for his services, whether such assignee might be a corporation, a copartnership, or an individual.

Again, the court says that a hospital which is controlled by a corporation, and which receives patients, and contracts to care for them and to furnish them with medical attendance, does not, by so doing, practice medicine within the meaning of this act. Whether a physician who allowed a corporation to make contracts for his services such as he might not make, or who associated himself with and practiced in pursuance of contracts made by corporations that indulged in conduct that would be unprofessional if done by a physician, might himself be made responsible for these acts of the corporation, and so subject himself to the penalties of this act, it was not necessary in this case to decide. The contract in question was signed by the "Physician in Charge." He woud seem to be as much responsible for this contract, and his own action under it, as if he had executed the contract in his own name. Would the same be true of any physician who, being in the employ of the corporation, should practice medicine pursuant to this contract? The court passes this question also without an answer in this case. If further legislation is necessary to regulate and control the conduct of such corporations, and of physicians connecting themselves with such corporations, the argument, it says, should be addressed to the Legislature. The court can not derive such legislation from any public policy indicated by the provisions of this act.

It was further suggested that one of the grounds for revoking the license of a practicing physician is unprofessional conduct, in the betrayal of professional secrets, and that there is no restriction on a corporation that might obtain such secrets and betray them. The court answers that such secrets are imparted for the purpose of enabling the physician who treats the patient to understand the nature of his disease and to determine the best course of treatment. No self-respecting physician would encourage the curiosity of his clerks or assistants in attempting to discover the secrets of his patients; and if he participated in such conduct, or knowingly consented to its exercise, he might furnish grounds for the revoking of his license. If the patient saw fit to divulge his secrets to the assistants or agents without the knowledge of the physician, he would be supposed by so doing to indicate his willingness that they be published to the world.

Current Medical Literature

American Medicine, Philadelphia.

July 29.

1 *Epigastric Linea Alba Hernia as a Little Recognized Source of Abdominal Pain and of Gastric Symptoms. D. D. Stewart, Philadelphia.
2 *Phthiriasis. J. Knott, Dublin, Ireland.
3 Meningitis: Its Symptomatology, Diagnosis and Treatment. S. MacCuen Smith, Philadelphia.
4 *Regional Analgesia in the Surgical Treatment of Anorectal Diseases. J. R. Pennington, Chicago.
5 *Urethrorectal Fistula. W. M. Beach, Pittsburg, Pa.
6 Hematoma of the Sternomastoid Muscle. J. L. Manasses, Philadelphia.

1. **Epigastric Linea Alba Hernia.**—The importance of this hernia as a source of gastric symptoms, says Stewart, has received too little attention from physicians. These hernias are small, sometimes barely perceptible to the eye, and in other instances fairly evident on inspection. Symptoms are usually referred to the stomach, whence a diagnosis of some form of gastric disorder, gastritis, gastralgia, and even gastric carcinoma or gallstone may be made by the unwary. The apparent triviality of the protrusion, even if it does not escape recognition, often does not suggest itself to the physician as a likely source of the malady.

2. **Phthiriasis.**—Knott has made the occurrence of some striking cases of phthiriasis in his practice the nucleus of an extremely interesting and exhaustive account of the various aspects of this condition. This disease (morbus pediculosus vel pedicularis) has figured more largely than probably most readers are aware, not only in clinical history, dermatology and pathology, but in general phrase and fable, in political history, in imperial and ecclesiastical biography, in orthodox theology, and in the endless mazes of heathen mythology. Knott's paper contains the principal available items from all these sources of information—and imagination, and offers interesting as well as instructive reading. Some of the pedicular lore is certainly very fantastic, and throws a strange light on some of the byways of human thought. In his concluding sentence he offers "the opinion that the scientist who succeeds in plucking out the heart of the mystery of the triplex 'natural selection' topographically displayed in the life history of human pediculi will have done more toward establishing a true theory

of parasitic and infectious disease than has hitherto been reached by bacteriologic pathology." This statement of opinion implies that the writer is not satisfied with the "germ theory" as understood at present.

4. See article by Pennington in The Journal, April 8, 1905, p. 1093.

5. See abstract in The Journal, July 8, 1905, page 128.

Medical Record, New York.

July 29.

7 *Clinical Suggestions from the Study of 500 Cases of Pulmonary Tuberculosis. H. P. Loomis, New York.
8 *Suggestions for Reducing the Prevalence of Summer Diarrhea in Infants. T. S. Southworth, New York.
9 *History and Basis of Dietetic Methods in Typhoid. J. B. Nichols, Washington, D. C.
10 *Animal Remedial Preparations. J. W. Wainwright, New York.
11 *Hypodermic Use of the Salicylate of Mercury in the Treatment of Syphilis. E. F. Kilbane, New York.
12 Carcinoma of the Male Breast Cured by the Roentgen Ray. S. Tousey, New York.
13 Presentation of a Portrait of Dr. Andrew Heermance Smith. G. L. Peabody, New York.

7. **Pulmonary Tuberculosis; Clinical Suggestions.**—Loomis presents the results of careful clinical study of 500 cases of pulmonary tuberculosis which illustrate the disease in all its phases as occurring in every walk of life. In 80 per cent. of 100 selected cases the first presumable evidence of the disease was as follows: In 48 per cent. the first symptom of any pulmonary trouble was a cough which ran for weeks or months. In 20 per cent. of these cases the cough was not accompanied by any expectoration. In 18 per cent. the first evidence of disease was loss of flesh, associated with a general "run down" condition. Sixteen per cent. of the cases gave a definite history of having had at some time one or more attacks of pleurisy, from which they recovered, and which were followed by periods of perfect health. The average length of time which elapsed between the first attack of pleurisy and the actual development of the disease was three and a half years. In the first two groups the average time the condition lasted before the disease developed was five and one-half months. In the remaining 20 per cent. of cases the pulmonary condition followed grippe, malaria, pneumonia, enlarged lymph glands, and hemoptysis. Loomis is convinced that the great majority of patients who apparently develop pulmonary tuberculosis after 30 years of age have had an attack of the disease before; often so slight that it was overlooked, or they recovered so rapidly, owing to climatic advantages, that they questioned whether they ever had it, and unless a very careful history is obtained, the fact is never mentioned, or is overlooked, and the condition for which they come under observation is believed to be the beginning of their pulmonary trouble. Among the features of value in making a prognosis are the general vitality of the patient, his personal and family history; age (between 25 and 30 being especially favorable); character, intelligence, and disposition of the patient; condition of the digestive functions. Whether one lung or more than one is involved does not seem to be a very important element in prognosis. Fever, hemorrhages, expectoration and tubercle bacilli in the sputum are of little value in prognosis. An analysis of 55 "cured" sanatorium cases showed that the average age was high—29, and that the long-lived ancestry of the patient was of special importance; whereas a tuberculous family history was of less importance. The average length of life among the tuberculous poor, with no advantages of rest or good food, is a little under two years.

8. **Suggestion for Reducing Summer Diarrhea in Infants.**—Southworth says that suitable prophylactic measures should date from the birth of the child, and one of the most important is breast nursing. If the secretion of milk be scanty, it should be used for part of the feedings at least, and every effort should be made to encourage the flow. Errors in weaning, neglect of apparently mild attacks of diarrhea, and the common diagnosis of teething used as an excuse for any evidence of illness are factors that must be combated. Only through personal, painstaking instruction of the masses can the desired end be accomplished.

9. **Feeding in Typhoid.**—Nichols urges that typhoid patients should be given a more varied and more abundant diet than is now customary. He takes the ground that the adoption of milk as the chief article of food for such patients has no logical justification. While it is a complete food for infants, it is not adapted for the exclusive nourishment of adults, except in amounts that are practically prohibitive. The present method of feeding in typhoid has developed in a way that seems largely empirical, and the history of the dietetic treatment of fevers, which is reviewed in full by Nichols, shows a progressive advance from a starvation regimen in the direction of a more and more liberal diet.

10. **Animal Remedial Preparations.**—Wainwright contributes an exhaustive paper on the various glandular and other animal extracts which have lately come into use in therapeutics.

11. **Hypodermic Use of Salicylate of Mercury in Syphilis.**—Kilbane recommends this treatment for trial in every case of syphilis in which the administration of mercury is indicated for a long period of time.

Medical News, New York.

July 29.

14 *Bacterial Content of the Railway Coach. J. J. Kinyoun, Glenolden, Pa.
14½ *Cure of Leprosy. I. Dyer, New Orleans, La.
15 Primary Sarcoma of the Stomach. M. Manges, New York.
16 Cystic Kidney and Liver. H. A. Reque, Chicago, Ill.
17 *Comparison of Methods of Lavage with the Siphon Tube and Politzer Bulbs. J. P. Sawyer, Cleveland, Ohio.

14. **Bacterial Content of Railway Coaches.**—Kinyoun details the experiments conducted by him for the purpose of determining the bacteriology of railway coaches. The only fact which seems to have been proved in this investigation was that 73 per cent. of the animals inoculated with material taken from the coaches gave only negative results, thus demonstrating that the bacterial content of the railway coach, in the majority of instances examined, was not infectious to animals.

14½. **Cure of Leprosy.**—Dyer believes that leprosy is curable in the same sense that syphilis and tuberculosis are curable. No patient treated by him has failed to respond to the treatment; amelioration occurs invariably, and when treatment has commenced early enough and has been kept up long enough a certain number of patients have recovered. The only remedies giving results were strychnin, antivenomous serum, chaulmoogra oil, and chlorate of potash. He believes that the oil more nearly approximates a specific for leprosy than any treatment as yet suggested. Full diet, restricting only indigestible foods, is indicated. The disease seems in no wise to be affected by fish or any other particular article of diet. Baths are essential in the treatment. Hot baths twice a day, with or without soda, are effective. The patient needs tonics and febrifuges, and should be watched for intercurrent or complicating diseases, such as malarial infection, pleurisy, pneumonia, grippe, and the like. Strychnin is a *sine qua non* in the treatment of leprosy. A leper should always take strychnin. When chaulmoogra oil is given, it is better endured before meals than after. It is best taken in capsules, in hot milk, or in milk of magnesia. The dosage should be small at first, say 3 drops, and increased every second or third day until from 120 to 150 drops of the oil are taken at the dose. At times it is advisable to give the oil in pill form. This can be done by combining it with extract of nux vomica and ordinary excipients, or, a very effective way, with tragacanth and common soap. Above all things, individualize the patient. Watch for improvement, and if it does not show in three months wait six months—if it does not show in six months, wait a year, or longer. But keep on driving at the treatment until the patient dies or gets well. Dyer has on record one patient who did not show any signs of improvement for two years, but who is now well. When all evidences of the disease are gone, insist on a continuance of treatment. It may not be necessary, but it makes sure.

17. **Lavage with Siphon Tubes and Politzer Bulbs.**—Sawyer favors the use of the simple Politzer bulb with the glass connection fitting into bulb and tube. The food residue having been aspirated as completely as possible with an empty bulb, a bulbful of solution, medicated as desired, is introduced slowly into the stomach, and free, active manipulation of the anterior abdominal wall over the region of the stomach is used with sufficient energy, sometimes also shaking the posterior

surface of the stomach, especially in conditions of atony or ectasia without ptosis. By this is produced a considerable movement of the liquid within the stomach useful for thorough cleansing and bringing the drug in close contact with the cleansed membrane. Then Sawyer allows the contents to be withdrawn in the aspirator which has been controlled by pressure with the hand till this time, and cleansing of the viscus can be accomplished more thoroughly, in less time, with less fatigue to the patient, than can be accomplished by the use of the siphon tube. That the whole quantity used as a wash is withdrawn is seen by the filling of the bulb. The patient is freed from efforts at expression, and lying as quietly relaxed as possible gains much in comfort. Sawyer draws especial attention to the advantage in lavage of having the patient reclining with loosened clothes, and then making use of free manipulation of the stomach wall to secure a more thorough cleansing and the more thorough application to the mucous membrane of suitable solution chosen for direct medication. In this fashion all the solutions used may be employed with a reasonable certainty that all portions of the stomach membrane are reached in the treatment and that all of the solutions injected are withdrawn.

Boston Medical and Surgical Journal.

July 27.

18 *The Surgeon and the Pathologist. A Plea for Reciprocity as Illustrated by the Consideration of the Classification and Treatment of Benign Tumors of the Breast. J. C. Warren, Boston.
19 *Fractures and Their Treatment. F. J. Cotton, Boston.
20 *Contribution to the Study of Spinal Surgery. G. L. Walton and W. E. Paul, Boston.
21 Duties of the State with Reference to Epileptics. M. Mailhouse, New Haven, Conn.

18. See Journal, July 15, 1905, page 149.

19. **Fractures and Their Treatment.**—Cotton presents a general review of the treatment of fractures and lays special stress on the following points: (a) A better recognition of the advantage of early mobilization will give better functional results. (b) A review of position (with *x*-ray, if possible) should be a routine at a time when correction is still readily possible by open if not by closed methods. (c) Many bad end-results of fractures are remediable by operation; such operations under proper conditions are devoid of any considerable risk, and the field for such corrective operations has increased and is still increasing with greater experience and wider knowledge of the results obtainable.

20. **Spinal Surgery.**—In the first of the two cases reported by Walton and Paul the clinical picture was that of severe pain in the neck and arm, accompanied by local wasting, numbness and loss of power in the arm, and by rigidity of the neck. Operation disclosed a myeloma involving the laminæ and pressing on the dura in the lower cervical region; its removal was followed by relief of pain and rapid improvement of motor and sensory symptoms. In the second case, pain centering in the right arm, accompanied by a modified Brown-Séquard paralysis of gradual onset and rapid progression, led to the diagnosis of tumor pressing on the cord unilaterally in the lower cervical region. Removal of the vertebral arches failed to disclose the tumor, which on autopsy was found to project posteriorly from the anterior wall of the spinal canal at the level of operation. The authors believe in giving the benefit of the doubt to operation in all these cases, for the following reasons: First, there is the bald fact that without interference a hopeless prognosis must be given; second, in ruling out operation, the patient and the family are refused a legitimate attempt to ameliorate discomforts if not to effect a cure; third, if out of many operations, one only is successful, the result, it seems to us, justifies the endeavor; fourth, if selected patients only are operated on, there is great danger that the present limitation of our diagnostic criteria would cause us to overlook the case in which operation would have been most brilliantly successful.

New York Medical Journal.

July 29.

22 Treatment of Pott's Disease and of Rotary Lateral Curvature, by the Plaster-of-Paris Jacket and the Aluminum Corset. (To be continued.) C. Ogilvy, New York.
23 *How to Palpate a Movable Kidney. C. D. Aaron, Detroit, Mich.
24 *Further Contribution to the Study of Pruritus Ani, with Special Reference to Its Local Treatment. L. H. Adler, Philadelphia.
25 *Simulation of Appendicitis by Cholelithiasis. G. G. Lempe, Albany, N. Y.
26 *Case of Lithemic Gangrene, a Contribution to Haig's Uric-Acid Theory. N. Rosewater, Cleveland, Ohio.
27 Suggestions on the Treatment of Morbid Psychic States. W. L. Howard, Baltimore, Md.
28 Case of a Cyst and Hydrocele of Canal of Nuck. B. S. Talmey, New York.
29 Six Lectures on Diseases of the Blood. J. M. Swan, Philadelphia.

23. **How to Palpate a Movable Kidney.**—Aaron says that bimanual palpation is always necessary in palpating a movable kidney. The hand over the lumbar region forces the organ forward, while the hand on the abdomen gently presses toward the hand on the back. It must be remembered that firm pressure is the rule for the hand on the back. To palpate for a movable kidney, he usually places the patient in four different positions: 1. Standing, while manipulator sits on a chair. 2. Standing, while manipulator stands. 3. Lying on back, while manipulator sits on edge of couch. 4. Lying on either side, depending on kidney palpated, while manipulator is sitting.

24. See abstract in Journal, July 8, 1905, page 128.

25. **Simulation of Appendicitis by Cholelithiasis.**—Lempe reports a case of cholelithiasis which previously had been diagnosed as appendicitis and was treated as such.

26. **Lithemic Gangrene.**—Rosewater reports the case of a man, aged 64, emphysematous, rheumatic, suffering with asthma and bronchitis, with a history of superficial gangrene, who was treated for gangrene of the anterior right tibial surface by elevation, antisepsis, heat and a lacto-cereal diet. He was discharged, cured, in six weeks, but was advised to continue the diet. Every indiscretion in eating was followed by some disturbance, such as pruritus and gangrene. On strict observance of the diet he remained well. The author believes that the history of this case, lithemic stigmata, deviation from normal each time uric acid or purin food was added (each time only one incriminating article) and the patient's return to and maintenance of normal health when strictly on the diet is as diagnostic of lithemia and as justifiable as would be potassium iodid and mercury for lues.

Lancet Clinic, Cincinnati.

July 29.

30 Hysteria—A Lecture. P. Zenner, Cincinnati.
31 Early Diagnosis of Cancer of the Body of the Uterus. R. B. Hall, Cincinnati.

Brooklyn Medical Journal, New York.

July.

32 Dr. Homer L. Bartlett; An Address. J. E. Sheppard.
33 The Teaching of Anatomy. W. F. Campbell, Brooklyn, N. Y.
34 *A Freak Case of Appendicitis. L. L. Nichols.
35 Clinical Types of Puerperal Infection. J. O. Polak.
36 Some Cases of Mental Deficiency in Children. Le G. Kerr.
37 Artificial Feeding of Infants. A. D. Smith.

34. **Freak Case of Appendicitis.**—The case reported by Nichols presented the usual symptoms of an attack of appendicitis—the catarrhal variety. Calomel and a saline were ordered, and the patient improved considerably, so that the operation which had been arranged for was postponed. One week after the beginning of the attack, the patient passed a very restless night, complaining of discomfort and tenesmus. In the morning there were several loose stools, one of them containing a very much attenuated appendix about two and a half inches long, with a perforation at the distal end. After his auto-operation, the patient made a rapid and uneventful recovery. Microscopic examination of the tissue showed it to be the appendix, but it was absolutely necrotic.

Medicine, Detroit, Mich.

June.

38 *New Method of Obtaining Rectangular Flaps for Transference with a Pedicle. W. W. Babcock, Philadelphia.
39 Case of Amyotrophic Lateral Sclerosis with Bulbar Symptoms. J. Grinker, Chicago.
40 Extrauterine Pregnancy. C. C. Rogers, Chicago.
41 Teaching of Hygiene in Colleges and Normal Schools. E. Egbert, Philadelphia.
42 Value of Protargol in the Treatment of Gonorrheal Conjunctivitis. F. C. Hotz, Chicago.
43 Etiology and Pathology of Gastric Ulcer. J. McFarland.

38. **Rectangular Flaps for Transference with Pedicle.**—Babcock's method consists in forming two rectangular flaps, having a width at least one-third wider than the part to be covered, and a combined length about one-third greater than the greatest diameter of surface to be covered. These are formed

in the following manner: A straight incision is made equal to the combined length of the flaps to be raised. Parallel to the first incision and at a distance equal to the width of each flap to be formed, two secondary incisions, one on either side of the original incision, are made. On one side a second incision is placed opposite the upper half of the first incision, while the third incision is made on the other side of the first incision and parallel to its remaining half. By uniting the distal ends of the last two incisions with those of the first, two flaps are formed, which are then raised, leaving two lines of parallel and equidistant wound edges. These are then united in a linear manner, the bases of the flaps being slid by each other until they become exactly opposite. There now remain two linear incisions, at the proximal ends of which are attached the bases of the two flaps with raw surfaces outermost, ready for attachment to the surface to be covered. These surfaces are prepared for grafting in the usual manner, and the limb with the grafts is superimposed on the surface to be covered. The grafts are then fastened to their new position by interrupted or continuous sutures, and the folds at the pedicle of the grafts protected from angulation and pressure by properly applied padding of sterile gauze. At the end of from five to ten days, when the grafts have acquired a sufficient circulation from their new bed, the two pedicles are divided and the limbs separated, leaving a short transverse incision on each limb. It is important that the retentive dressing affords absolute support, so that there be no undue pressure between the opposing surfaces, and that adequate fixation, absolutely preventing any displacement, be provided.

St. Paul Medical Journal.

June.

44 Time as an Element in Abdominal Surgery. M. H. Richardson, Boston.
45 *Subparietal Injuries of the Abdomen. C. J. Holman, Mankato.

45. **Subparietal Injuries of Abdomen.**—Holmes says that it would seem as though, with a patient, who had received a severe blow in the abdomen, having pain and tenderness on pressure, and with rigidity or spasm of the abdominal muscles, exploration should be advised. If the patient should survive the traumatic peritonitis, there would still be cicatrices and adhesive bands that would require subsequent repair. The degree of violence of the vulnerating body is not necessarily in proportion to the injury produced, because Nature has many means of protecting the abdominal viscera. If the surgeon waits for positive symptoms of hemorrhage and infection, the exploration will be too late and useless. Since the introduction of modern methods in the treatment of shock, i. e., salt solution, hot water, operating tables, etc., speed is not of as great moment as thorough work.

Journal of Cutaneous Diseases, New York.

June.

46 Acrodermatitis Chronica Atrophicans. C. Herxheimer, Frankfort-on-Main, Germany.
47 *Trichorrhexis Nodosa. M. L. Heidingsfeld, Cincinnati.
48 Creeping Eruption. J. B. Shelmire, Dallas, Texas.

47. **Thichorrhexis Nodosa.**—Heidingsfeld reports one case of this affection. He says that it is universally present in long, uncut hair as a normal condition and is probably Nature's method of physiologically arresting and stunting an otherwise unlimited and eventually cumbersome overgrowth of hair. When present to excess in a predisposed individual, it becomes a pathologic process and abnormally stunts the growth of hair; the nodes are more prominently wounded and are often multiple, separated from each other by uniform intervals of normal hair shaft. Its etiology has been variously attributed to trophic, parasitic and mechanical influences. A mechanical causation is improbable on purely clinical grounds, and it is incapable of artificial demonstration. The condition in brushes can likewise not be attributed to purely mechanical causes. A parasitic causation is not commensurate with the evidence thus far adduced from clinical studies and bacteriologic investigations. The most rational explanation of its etiology from physical, bacteriologic and clinical investigations, and its analogy to kindred and associated changes in the hair rests in trophic influences, emanating from the metabolism at large, and permeating the hair to its ultimate extent.

Bulletin Johns Hopkins Hospital, Baltimore, Md.

July.

49 Contribution to the History of Medicine in Maryland During the Revolution, 1775-1779. W. R. Steiner, Baltimore.
50 Situs Transversus and Atresia of the Pylorus. H. M. Little and H. F. Helmholz, Baltimore.
51 *Case of Congenital Urethral Stricture Associated with Hematuria and Symptoms Suggesting Renal Disease. J. W. Churchman, Baltimore.
52 Synesthesia. H. L. Smith, Baltimore.

51. **Congenital Urethral Stricture Suggesting Renal Disease.**—The interesting features of the case reported by Churchman can be summarized as follows: The patient presented a urethral stricture in which a positive diagnosis of its congenital nature could be made. Such a diagnosis was warranted by: (a) The history, from which all record of urethral traumatism or of venereal infection was absent. (b) The association of an obvious congenital stricture at the meatus. (c) The complete cure of the clinical manifestations by proper treatment of the stricture. (d) The presence of clear urine and the absence of symptoms after the actual stricture had been dilated. The second point of interest was offered by the clinical symptoms presented. These were nausea and vomiting, hematuria, and pain over the left ureter. They suggested renal or urethral disease, and obscured the diagnosis which was really only cleared up by the therapeutic test. In the third place, this case suggests that another item must be added to our already long list of causes for hematuria, and that congenital stricture may be associated with blood in the urine, the source of which may probably be an hypertrophied verumontanum.

Laryngoscope, St. Louis, Mo.

June.

53 *New Technic for the Submucous Resection of the Cartilaginous Septum—Swivel Septum Knife. W. L. Ballenger, Chicago.
54 Pseudokousma. F. H. Koyle, Hornellsville, N. Y.
55 Acute Mastoiditis, Septic Infection of the Sigmoid Sinus, Phlebitis of the Internal Jugular in a Child; Recovery Without Operation. W. C. Braslin, Brooklyn, N. Y.
56 Surgery of Otitic Brain Abscess. J. F. Barnhill, Indianapolis, Ind.
57 *Passing of the Galvanocautery in the Treatment of Diseases of Nose. W. S. Anderson, Detroit, Mich.
58 Case of Melanotic Sarcoma with Manifestations in the Nose, Nasopharynx, Mouth, Pharynx and Larynx. W. C. Phillips, New York.
58 Unusually Large Fibrous Postnasal Polyp. Wm. W. Carter, New York.
60 Two Interesting Cases, One of Curious Laryngeal Lesion and the Other an Unusual Form of Stammering. G. H. Makuen, Philadelphia.
61 Falsetto or Eunuchoid Voice. H. Dupuy, New Orleans.
62 Case of Melancholia Relieved by Ethmoidal Operation. Wm. B. Shields, St. Louis, Mo.
63 *Safe and Adequate Method for Opening Retropharyngeal Abscesses in Children. E. L. Meierhof, New York.
64 Spontaneous Hemorrhage from an Inflamed Tonsil. G. F. Keiper, Lafayette, Ind.
65 Case of Idiopathic Hemorrhage in the Middle Ear. C. P. Linhart, Columbus, Ohio.
66 Plan to Avoid Heating the Mirror of the Laryngoscope. C. Graef, New York.

53. **Submucous Resection of Cartilaginous Septum.**—The essential feature of this operation is the instrument used in its performance—the swivel septum knife—devised by Ballenger. The swivel blade of the knife is pivoted to the extremities of the tuning-fork-like prongs of the instrument and swings in a circle. By the resistance of the cartilaginous tissue through which the knife passes, it may be made to cut in any direction in which the distal ends of the prongs are directed. If the prong tips are made to describe a perfect circle, the blade will follow and excise a circular disc of cartilage. The technic of the operation performed by Ballenger is after the Menzel-Hajek method, with the exception of the removal of the cartilage, which is removed in one piece with one cut of the swivel knife. Using a special mucosa knife devised by himself, Ballenger makes a curved incision in the septal mucosa about one inch in length, beginning near the floor of the nose and curving forward and upward as high as possible through the vestibule of the nose and about one-fourth inch posterior to the anterior margin of the cartilage. The incision is made on the left side of the septum, regardless of whether this be the convex or the concave surface, because it is convenient to use the knife with the right hand while the forefinger of the left is inserted into the right nostril. Having made the curvilinear incision through the muco-perichondrium, he resorts to the semi-sharp

elevator of Hajek to elevate the anterior portion of the muco-perichondrium from the septum, after which Hajek's blunt elevator should be used. With a bistoury the incision is carried through the cartilage to the perichondrium of the opposite side. The perichondrium is lifted from the cartilage and the prongs of the swivel knife are then introduced through the incision. The instrument is directed backward, parallel with the floor of the nose, until the posterior limit of the cartilage is reached, when it is directed upward and forward, following the outline of the anterior end of the perpendicular plate of the ethmoid to the bridge of the nose, when it is pulled downward, parallel with the bridge of the nose, to the upper extremity of the curvilinear incision. In this way almost the entire septum is removed, except the anterior tip which is to support the tip of the nose. The excised cartilage is removed with a pair of dressing forceps. This method is simple, is devoid of traumatism and shock, can be done in a few seconds, will not result in laceration or perforation of the muco-perichondrium, and the entire cartilage can be removed in one piece, being available for thorough inspection.

57. **Galvano-cautery in Nasal Affections.**—Anderson protests against the use of the galvanocautery as a routine measure in the treatment of nasal diseases. In cases where there is an engorgement of the turbinal, and where under cocain the tissue shrinks to a marked degree, submucous puncture is a simple and efficacious method of treatment. In true hypertrophy, when simple submucous puncture is not sufficient, the flap operation is most satisfactory. The use of the cautery for severing adhesions or false membranes can be discarded and better results obtained by making flaps of tissue to cover the denuded surface, thus preventing the formation of synechiæ. Rather than to cauterize the base of polypi, it is better to curette thoroughly. In cases of hemorrhage from the nose it is better to apply adrenalin, and then to pack the nose carefully with subnitrate of bismuth lint, than to use the cautery. In the treatment of hypersensitive areas in the nose in certain neuroses of nasal origin the cautery has a place, but even here it should be used carefully. The aim should be always to destroy as little mucous membrane as possible, to avoid the formation of adhesions, and the occurrence of ulceration.

63. **Safe Method for Opening Retropharyngeal Abscesses in Children.**—To overcome the time element and to make an adequate opening for free drainage, Meierhof recommends the use of a pair of dressing forceps of the length best suited to free manipulation and which are bent on the flat, with the beaks somewhat curved and moderately pointed. The child is seated in an upright position on the knee of an assistant, who places one hand on the child's forehead and encircles its arms and body with one arm. The moment the abscess is entered with the forceps the assistant throws the child's head and body forward; while in this position the forceps are withdrawn with the blades open, thus allowing the abscess to be thoroughly evacuated and good drainage established.

Therapeutic Gazette, Detroit, Mich.

June 15.

67 Use of Diphtheria Antitoxin in the Treatment of Cerebrospinal Meningitis. M. E. Pennington, Philadelphia.
68 *Use of Specific Products of Tubercle Bacilli in the Treatment of Tuberculosis. J. Sawyer, Asheville, N. C.
69 Intestinal Perforation in Typhoid Fever. F. C. Wright, Grove City, Ohio.
70 Cryptogenetic Septicopyemia. J. L. Salinger and G. Walters, Philadelphia.
70½ Treatment of Pneumonia. H. A. Hare, Philadelphia.

68. **Serum Therapy of Tuberculosis.**—Of eleven patients treated by Sawyer with the watery extract of tubercle bacilli for periods varying between 1 and 3 months, more or less marked improvement, local as well as general, was evident in each case, at times to such a degree that the patient believed himself justified in discontinuing the treatment. The degree of such improvement stood in relation to the time of treatment and the dose of the serum. Fourteen other patients, in whom the treatment was completed, made a satisfactory recovery. The tuberculin test was negative in each case after the treatment was stopped. There was no doubt about the diagnosis.

Southern California Practitioner, Los Angeles.

June.

71 Physician and Patient. G. Dock.
72 History of Medicine. J. P. Widney, Los Angeles.
73 *Treatment of Erysipelas by Streptolytic Serum. Wm. S. Smith, Prescott, Ariz.
74 Test of Public School Children—Imagery—Reaction Time—Memory Tests. G. L. Leslie, Los Angeles.
75 Diseases of Women and Children. W. A. Edwards.

73. **Streptolytic Serum in Erysipelas.**—Smith reports ten patients with erysipelas treated with streptolytic serum. In from twelve to twenty-four hours the temperature dropped to normal, the pulse became slower and the headache was relieved. The swelling subsided in from 24 to 48 hours. No other treatment was used.

Medical Recorder, Chicago.

July 15.

76 *Operative Treatment of Empyema of the Antrum of Highmore. O. T. Freer, Chicago.
77 Office Examination of Human and Cow's Milk. R. C. Whitman, Chicago
78 Newer Methods in Use in the Diagnosis of Ureteral and Renal Diseases. L. E. Schmidt, Chicago.
79 *Report of Five Cases of Tuberculosis of the Knee Joint. J. Ridlon, Chicago.
80 Syphilis of the Knee Joint. J. L. Porter, Chicago.
81 Pin Worms as a Cause of Appendicitis. D. F. Monash, Chicago.
82 Blood Analysis in Infections. C. Hill, Chicago.
83 Case of Raynaud's Disease with Rheumatoid Arthritis. J. Grinker, Chicago.
84 Technic of Mechanical Massage in the Treatment of the Throat, Nose and Ear. M. R. Brown, Chicago.

76. **Operative Treatment of Antral Empyema.**—After a brief review of the anatomy and pathology of the maxillary antrum, Freer discusses the reasons for the usual obstinacy of the disease, the Kuester, Caldwell-Luc and other operations for the relief of this operation. He says that the intranasal operations, both the one in the middle meatus in milder cases, and the radical one of Rethi removing all of the nasal floor of the antrum, in worse ones, are to be preferred in all but a minority of the most obstinate and severe cases to the Caldwell-Luc operation and its radical modifications. The Cooper-Meibom method of drilling into the antrum through the socket of a tooth is usually merely palliative and had better be abandoned for the intranasal operations described by the author.

79. **Tuberculosis of Knee Joint.**—Ridlon reports five cases to show what results can be had from patient, painstaking and prolonged treatment by immobilization without internal medication or iodoform injections or cutting operations. He is convinced that the treatment by iodoform injections is never a help and is usually a hindrance to a perfect functional result; that cutting operations for the removal of tuberculous foci and abscesses, while they may shorten the duration of the disease, give a less good functional result in the end than by leaving them alone; and that excisions should never be performed in growing children because of the resulting arrest of growth, which may amount to six or seven inches in the length of the limb, and that amputation should be done only as a life-saving measure.

Virginia Medical Semi-Monthly, Richmond.

June 23.

85 Relative Value of the Various Methods of Determining the Sanitary Quality of a Water Supply. E. C. Levy, Richmond, Va.
86 Injuries to the Brain and Nervous System from Alcoholic Medication. T. D. Crothers, Hartford, Conn.
87 Forcible Removal of Fœtus from Uterus: The History, Indications, and Means. M. J. Payne, Staunton, Va.
88 *Circumcision—Its Importance in the Treatment and Prevention of Certain Reflex Nervous Phenomena. M. H. O'Daniel, Bullards, Ga.
89 Tuberculosis in Children. St. G. T. Grinnan, Richmond, Va.
90 *Clinical Significance of the Aspect of the Tongue. A. A. Davidson, Augusta, Ga.
91 Result in One Case of Sarcoma of Throat Treated by Serum-therapy—After Ten Years. F. T. Chamberlin, Washington, D. C.
92 Principles of Surgery. S. McGuire, Richmond, Va.

88. **Circumcision and Nervous Phenomena.**—The object of O'Daniel's paper is to direct attention to the importance of investigating thoroughly the relationship between phimosis and certain nervous disturbances and to urge the importance of circumcision in the treatment and prevention of these conditions.

91. **Clinical Significance of Aspect of the Tongue.**—From a study of the clinical aspect of the tongue in other disorders, Davidson concludes that it is an aid to diagnosis, but of inconsistent value, and that its greatest value as a symptom is to indicate the progress in the given disease.

Archives of Ophthalmology, New Rochelle, N. Y.
July.

93 Fibrillary Edema of the Retina Following Contusion. P. Fridenberg, New York.
94 Total Congenital Detachment of the Retina in Two Brothers. J. S. Fernandez, Havana, Cuba.
95 Recurrent Paralysis of Ocular Muscles Associated with Pain. A. W. Stirling, Atlanta, Ga.
96 Glaucomatous Cloudiness of the Cornea. P. Silex, Berlin.
97 Papillo Retinitis from Iodoform Poisoning. M. Mohr, Budapest.
98 *Influence of Caffein on the Field of Vision in Quinin Amblyopia. G. Schwabe, Leipsic.
99 *Vernal Catarrh. M. Falta, Szeged, Hungary.
100 Suppuration of Cicatricially Degenerated Corneal Tissue and the Conditions Under which Micro-organisms Pass Through it into the Interior of the Eye. W. Dolganoff and M. Sokoloff.
101 Treatment of Congenital and Infantile Hydrophthalmus. C. Schoenemann, St. Johann-Saarbrücken.
102 Metastatic Carcinoma of Iris and Ciliary Body. G. W. Cutler, New York.

98. **Caffein in Quinin Amblyopia.**—The special interest in the case reported by Schwabe lies in the influence which may be exercised by caffein on the field of vision. The conclusions to be drawn from his observations are, in the first place, that amaurosis with a concentric contraction of the visual field persisting for over a year, hemeralopia, and great narrowing of the retinal arteries can be caused by a dose of quinin hitherto judged to be harmless (1.25 g.) in an apparently healthy person with a relaxed vascular system, whose power of resistance has been reduced by insufficient nourishment, and, in the second place, that in such a person caffein, also in small doses (0.1 g.), can temporarily induce a further contraction of the retinal vessels and of the peripheral field, without either influencing the central vision and color perception, or causing a permanent injury to the peripheral vision in spite of frequent repetition for a year.

99. **Vernal Catarrh.**—Falta directs attention to the possibility of mistaking vernal catarrh for trachoma, and describes the following forms of the disease: 1. The eye shows no change, except a slight ciliary injection. The patient has severe photophobia. It is the initial stage of the disease, but is usually of brief duration. The diagnosis is very difficult. 2. In this form the most typical and also the most common, there is observed degeneration of the tarsal conjunctiva of the upper lid, which presents the appearance of a stone pavement. Conjunctiva of the lower lid is catarrhal, or only hyperemic. This form is often mistaken for trachoma. 3. About the cornea are brownish nodules which sometimes cross the margin and invade the cornea itself. A network of conjunctival vessels is attached to each nodule. There is more or less photophobia, frequently hyperemia of the iris with ciliary injection and occasionally hyperemia of the palpebral conjunctiva. This form may be mistaken for phlyctenular keratitis or keratitis fasciculosa. 4. This form is characterized by flat, broad infiltrations of colloidal consistence in the ocular conjunctiva with dense vascular networks attached. It may be confounded with episcleritis. 5. A mixture of the second and third varieties. 6. A mixture of the second and fourth varieties. Although the diagnosis of vernal catarrh is usually easy, a great help in diagnosticating the condition is the fact that if the diseased eye is rubbed quickly and gently with the upper lid, or if, after eversion of the lid, the proliferations on the tarsal surface of the conjunctiva are rubbed with a little glass rod, the patient will complain of severe itching. This happens with no other disease. In the summer, he sends the patients to a cool mountain resort. For those who can not go to such a place he orders dark glasses and the constant application of cold compresses, which render the disease much more endurable during the warm months. In addition, every second or third day he everts the upper lid and massages the conjunctiva with yellow ointment on a small glass rod, and then massages the nodules and infiltrates by means of the lid itself.

American Journal of Urology, New York.
June.

103 American Urological Association. R. Guiteras, New York.
104. Present-day Status of Tuberculosis of Male Genital Organs. E. R. W. Frank, Berlin.
105 Constitutional Aspects of Gonorrhea. F. R. Sturgis, New York.
106 Cytodiagnostic Examinations of Gonorrheal Secretions. M. Joseph and M. E. Polano, Berlin.
107 New Model of the Catheterizing Cystoscope. W. Ayres, New York.
108 Prostatic Hypertrophy: Its Surgical Treatment: Conclusions Drawn from Twenty-five Operations. F. Cabot, New York.

Journal of Medicine and Science, Portland, Me.
June.

109 Pain as a Symptom in Urinary Diseases. C. G. Cumston, Boston, Mass.

Texas Medical News, Austin.
June.

110 Prevention of Tuberculosis. M. M. Pool, El Campo, Texas.
111 Practical Points on the Use of the Microscope. J. L. Denison, Corsicana, Texas.

Ophthalmic Record, Chicago.
June.

112 Various Methods Employed for Localizing Foreign Bodies in the Eye by Means of the Roentgen Rays. J. E. Weeks, New York.
113 Magnetic Properties of Steel Alloyed with Other Metals. W. M. Sweet, Philadelphia.
114 Shield for the Eye in Skiascopy. J. N. Rhoads, Philadelphia
115 Exophthalmos Caused by Disease of the Ethmoidal Cells and Frontal Sinus; Drainage; Recovery. R. H. Johnston, Baltimore.
116 Two Cases of Melanosarcoma of the Choroid. C. J. Kipp, Newark, N. J.
117 Sachs' Lamp for Transillumination of the Eye. E. S. Thomson, New York.

Northwest Medicine, Seattle, Wash.
June.

118 Primary Repair of Lacerations and Injuries of the Pelvic Floor. H. A. Castle, Pocatello, Idaho.
119 Tick Fever. R. M. Stith, Seattle, Wash.
120 Intestinal Paralysis. W. H. Axtell, Bellingham, Wash.
121 Rheumatism of Childhood. W. C. Hastings, Seattle, Wash.

American Practitioner and News, Louisville, Ky.
June.

122 Emergency Surgery. J. R. Wathen, Louisville.
123 Gynecologic Examination. O. H. Kelsall.
124 Study of Burns. T. K. Van Zandt.
125 Hernia, Its Complications and Treatment. L. G. Bowers, Richmond, Ind.
126 Fissure in Ano. E. O. Witherspoon.

Journal South Carolina Medical Association, Charleston.
June.

127 President's Address, South Carolina Medical Association. R. Wilson, Jr.
128 Fibroma Ovarii, with Twisted Pedicle and Marked Ascites. L. Peters, Columbia, S. C.
129 Intestinal Obstruction. F. L. Potts.
130 Physiologic Saline Solution; Its Uses and Abuses. L. C. Stennis, Greenville, S. C.

Fort Wayne Journal-Magazine.
June.

131 Note on Appendicitis. B. Robinson, Chicago.
132 Medicolegal Aspect of Insanity. W. P. Whery, Ft. Wayne, Ind.
133 Prophylaxis and Hygiene of the Exanthematous Diseases. C. A. Woodruff, Ligonier, Ind.

Brooklyn Medical Journal, New York.
June.

134 Cysts of the Breast. W. C. Wood, Brooklyn.
135 Observations on the Diagnosis of Carcinoma Ventriculi. H. G. Webster, Brooklyn.
136 Causes of Femoral Phlebitis. C. H. Goodrich, Brooklyn.
137 Uric Acid Diathesis in Children. R. T. Wheeler, Brooklyn.
138 Vesical Calculus. T. H. Dexter, Brooklyn.
139 Surgical Treatment of Purulent Salpingitis. H. C. Keenan, Brooklyn.
140 Nasal Occlusion in Its Etiologic Relation to General Diseases. A. C. Howe, Brooklyn.

Archives of Physiological Therapy, Boston.
June.

141 Is the Gulf Stream a Climatic Myth? J. K. Crook, New York.
142 Further Experiments with Electrostatic Machines. S. Sheldon, Boston.
143 High Frequency Oscillatory and Pulsatory Discharges. W. J. Jenks, and C. L. Clarke, Boston.
144 Use of Roentgen Rays in the Diagnosis of Foreign Bodies in the Cranium. K. C. Mead, Middletown, Conn.

Medical Age, Detroit, Mich.
June 10.

145 How Tuberculosis Will Be Eventually Eradicated. J. H. Adams, Paoli, Pa.
146 Parenchymatous Keratitis, Iridochoroidal Form with Loss of Both Eyes. C. H. Brobst, Peoria, Ill.
147 Surgical Treatment of Tubercular Spondylitis. A. E. Halstead, Chicago.

Journal of Experimental Medicine, New York.
June.

148 Questions Relating to the Virulence of Micro-organisms, with Particular Reference to Their Immunizing Power. R. P. Strong, Manila.
149 Method for Preparing a Permanent Nocht's Stain (Nocht-Jenner Stain). T. W. Hastings, New York City.
150 Effects of Intravenous Injections of Bile on Blood Pressure. S. J. Meltzer and Wm. Salant, New York.
151 Hexon Bases of Liver Tissue Under Normal and Certain Pathologic Conditions. A. J. Wakeman, New York.
152 Construction of a Thermostat Room. N. H. Harris, New York.
153 Enzymes and Auto-Enzymes of Inflammatory Exudates. E. L. Opie, New York.

Journal Michigan State Medical Society, Detroit.

July.

154 Instrumental Methods in the Study of Human Physiology and Their Relation to Experimental Medicine. W. P. Lombard, Ann Arbor.
155 Historical Sketch of the Radical Mastoid Operation. R. Connor, Detroit.
156 State Board Work. W. H. Sawyer, Hillsdale.
157 America's Part in the Progress of Surgery. B. R. Schenck, Detroit.
158 Case of Family Ataxia of the Hereditary-Cerebellar Form with Necropsy. I. H. Neff, Pontiac, Mich.

Western Medical Review, Lincoln, Neb.

June.

159 Ideals. M. L. Hildreth, Lyons, Neb.
160 Plea for Surgical Intervention in Suspected Malignant Disease of the Abdominal Cavity. B. B. Davis, Omaha, Neb.
161 Proper Management of Labor by the Country Doctor. A. E. Cook, Randolph, Neb.
162 Choice of Operations for the Restoration of the Pelvic Floor. J. W. Bullard, Pawnee City, Neb.
163 Chronic Metritis. E. Brown, Omaha, Neb.

Medical Fortnightly, St. Louis.

June 26.

164 Myasthenia Gravis. C. K. Mills, Philadelphia.
165 Anatomic Eponyms. R. S. Gregg, Chicago.

Vermont Medical Monthly, Burlington.

May.

166 Extrauterine Pregnancy. P. E. McSweeney, Burlington.
167 What Can Preventive Medicine Do to Safeguard the Middle Ear Against Acute and Chronic Infection? F. P. Emerson, Boston.
168 Amputations. T. H. Manley, Boston.
169 Diseases of Children. D. C. Hawley, Burlington.

Bulletin Johns Hopkins Hospital, Baltimore.

June.

170 Vaginal Cysts. T. S. Cullen, Baltimore.
171 Etiology and Pathogenesis of Pernicious Anemia. C. H. Bunting, Baltimore.
172 Recurring Phlebitis of Obscure Origin. J. B. Briggs, Washington, D. C.
173 Some Observations on Heart Block in Mammals. J. Erlanger, Baltimore.
174 Force of Contraction of the Gall Bladder and the Course of Its Motor and Inhibitory Nerve Fibers. J. A. Freese, Baltimore.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

July 15.

1 *Prospects and Vicissitudes of Appendicitis. C. A. Ballance.
2 Two Cases of Duodenal Uulcer Treated by Gastroenterostomy. F. Eve.
3 *Acute Salpingitis Caused by an Inflamed Appendix Bursting into the Mouth of the Fallopian Tube. J. Bland-Sutton.
4 Case of Cutaneous Anthrax Treated Without Excision with Sclavo's Antianthrax Serum; Recovery. William Mitchell.
5 Spoon Elevator for Raising the Pelvic Floor. J. L. Thomas.
6 Experimental Inquiry into the Infection of Operative Wounds from the Skin, the Breath and the Air. J. R. Collins
7. Keratosis Palmaris et Plantaris in Five Generations. F. H. Jacob and A. Fulton.
8 *Treatment of Serous Effusions by Injection of Adrenalin Chlorid. H. W. Plant and P. Steele.

1. **Prospects and Vicissitudes of Appendicitis.**—A review of statistics on the subject of appendicitis by Ballance gives the following results: 1. A certain proportion of cases recover without surgical intervention, and of these some remain for a considerable time, if not permanently, free from relapse. The proportion of such cases varies considerably in different series, even when treated by observers whose plan of treatment is identical 2. The mortality of late operations is high, and that when it is found necessary to operate after failure of other treatment the condition found is almost invariably such as would have been better and more easily dealt with by an earlier operation. 3. The rule to operate early in all cases leads to the recovery of a large proportion of the severe cases. 4. The appendix may be safely ablated, even when localized abscess is present. 5. The statistics of those adopting the opportunist rule seems always charged with at least a small number of cases in which it would seem probable that life might have been saved or an undesirable complication avoided by early intervention. 6. A large proportion of the bad cases with diffuse peritonitis are first attacks. He concludes, however, that: 1. Every diagnosable inflamed appendix with signs of increasing local or general peritonitis should be removed. 2. Every appendix which has given rise to inflammation or abscess should be removed. 3. In serious acute cases it is unwise to leave the appendix; as the primary site of infection is more likely to cause the continuance of constitutional symptoms than the spreading peritonitis around. Further, if left it requires another operation for its removal.

3. **Acute Salpingitis.**—Bland-Sutton refers to a case in which an inflamed appendix perforated, and the inflammatory products were discharged into the right Fallopian tube through its fimbriated extremity.

8. **Serous Effusions Treated by Injection of Adrenalin Chlorid Solution.**—In all the cases in which Plant and Steele have tried the effect of the injection of adrenalin, the following has been the method adopted: As much as possible of the fluid was withdrawn by a two-way trochar and cannula, and through the cannula, still *in situ*, a dram of adrenalin chlorid (1 in 1,000), diluted to ½ oz. with sterile water, was introduced by means of an exploring syringe. The cannula was then removed, the wound closed with wool and collodion, and, in abnormal cases, the abdomen was gently manipulated for five minutes and a binder firmly applied. The only cases of ascites, with one exception, in which adrenalin was tried were those due to cirrhosis of the liver, and without exception the treatment proved successful. Immediately after the injection in ascitic cases the patients often complained of sharp abdominal pain. In all cases there was a rise of from 0.5 degrees to 2 degrees of temperature, occurring usually within half an hour of the time of injection, also an immediate rise in the pulse tension was noticed lasting from a quarter to half an hour. In no case was the amount of urine altered.

The Lancet, London.

July 15.

9 *Tracheal Injection: Its Simplification and Its Use in Pulmonary Tuberculosis. Dr. Mendel.
10 Hours of Sleep at Public Schools, Based on an Inquiry into the Arrangements Existing in Forty of the Great Public Schools in England and Others in the United States of America. T. D. Acland.
11 *Influence of Fruit on the Precipitation of the Uric Acid of the Urine. W. J. Smith, Jerome.
12 Experiences of the Treatment of the Cancerous Cervix Uteri by the Abdominal Route, with Pelvic Dissection. A. J. Wallace.
13 Five Fatal Cases of Acute Mental Disorder, Probably Acute Delirium. E. Goodall.
14 *Duration of Life After the Appearance of Albuminuric Retinitis. S. Snell.
15 Chemical Mechanism of Gastric Secretion. J. S. Edkins.
16 Strangulated Hernia of the Small Intestine and Bladder. G. F. Barham.
17 Two Cases of Actinomycosis. D. D. Crawford.

9. **Tracheal Injection.**—Mendel attempts to show that the manipulations required for tracheal injection can be sufficiently simplified to be performed by any physician and without special training, and that the introduction of non-irritating liquids in the air passages never cause any reflex, coughing, or suffocation. One method, the medial, is as follows: If the tongue be protruded and held outside the mouth, the patient not swallowing, the pharynx forms a funnel in which the only inferior outlet is the glottis, the esophagus being closed, so that a small quantity of liquid projected against the posterior wall of the pharynx runs down into the air passages. The second is called the lateral method. In this method the liquid must be projected against the lateral wall of the pharynx with sufficient force to turn round this wall and thus reach the posterior wall, whence it falls into the larynx.

11. **Influence of Fruit on Precipitation of Uric Acid.**—Jerome concludes that pears, fresh figs, grapes, dates, and oranges may be taken not only with impunity but with distinct advantage by those who suffer from uric acid calculus and gravel. The beneficial effect, which will be in proportion to the amount taken, is due essentially, if not entirely, to the lessened acidity of the urine. Marmalade does not raise the precipitability of the uric acid, though in the quantity likely to be taken it fails to produce the opposite effect, probably because the amount of fruit pulp is insufficient for that purpose.

14. **Duration of Life After Appearance of Albuminuric Retinitis.**—Of 23 patients traced by Snell three are known to be living. Of these, one a man, aged 36, was first seen in July, 1904; the kidney affection had been previously recognized. Two were women and both had suffered during pregnancy. One, aged 35, seen in March, 1891, recovered vision partially, but became affected again in the next pregnancy, two years later, with resulting blindness. The other woman,

aged 45, seen after the birth of the first child, in January, 1897, made a good recovery. The remaining 20 were ascertained to have died as follows: two at the end of one month, two at 2 months, one after 3 months, two after 4 months, one after 5 months, one after 6 months, two after 9 months, one after 12 months, one after 15 months, one after 22 months, two after 24 months, one after 28 months, two after 32 months, and one after four and a half years. The average duration of life in these cases is 14½ months. Snell concludes that the appearance of changes in the retina is an indication of the systemic havoc wrought by the nephritis, and that it portends a fatal termination, which may occur in a few months, and is rarely delayed longer than two years.

Journal of Tropical Medicine, London.

July 15.

18 *Possible Mode of Communication of Leprosy. T. C. Mugliston, Penang.
19 Successful Application of Preventive Measures Against Beriberi. H. Wright.
20 Cerebrospinal Meningitis at Zungeru and Yola in Northern Nigeria.
21 *Obstinate Case of Obstruction of the Bowel—Treatment—Recovery. G. H. Fink, Benares.

18. **Communication of Leprosy.**—For many years Mugliston noted the almost universal occurrence of itch in lepers, and it occurred to him that the disease might be conveyed by the itch mite. On investigation he found that of 77 lepers, 44 had itch on admission; 11 more remembered having had itch, and 22 could not remember.

21. **Obstruction of Bowel.**—Fink cites a case of obstruction of the bowel due to impaction of scybalous masses which was relieved by the injection of 4 drams of glycerin, all other attempts to relieve the condition having failed.

Dublin Journal of Medical Science.

June.

22 *Clinical Report of the Rotunda Hospital. F. H. Tweedy, G. Fitzgibbon and A. Holmes.
23 Large White Kidney. G. Peacocke.
24 Two Cases of Endometritis, with Remarks on Treatment. R. D. Purefoy.
25 Treatment of Diphtheria. C. H. W. McCullagh.

22. **Clinical Report of Rotunda Hospital.**—Tweedy reports 1887 cases of labor in the hospital, with a mortality of 8.42 per cent. Thirteen women died throughout the year. Premature labor was induced five times. There were 13 cases of accidental hemorrhage, one ending fatally. Nine of these patients required no treatment; in the others, labor had not commenced, and in these, moist aseptic pellets of cotton wool were packed tightly round the cervix and promptly checked the hemorrhage. There were 4 cases of placenta prævia, with one death due to septic infection, which existed when the patient entered the hospital. Bi-polar version was performed in the remaining cases, and in one a living child was born. Twenty-nine cases of postpartum hemorrhage were treated successfully by massage, ergot, hot vaginal douches and plugging the uterus with sterile gauze. Manual removal of the placenta was performed 36 times. In 6 cases postpartum hemorrhage was the indication, while in 31, adherent placenta was present, and in 5, retention was due to spasms of the uterus. Eight patients developed eclampsia—five primipara, two II-para and one III-para. In two the convulsions occurred postpartum, and in two others they occurred both before and after delivery. Macerated children were born in four of the cases. Prolapse of the funis occurred in seven cases, as did also hydramnios. Hyperemesis gravidarum occurred once, a severe case, which was relieved by feeding the patient for three days per rectum and by administering numerous saline enemata. Mania of mild type developed in two cases, both primipara. Symphysiotomy was done once for short internal conjugate. Cesarean section was performed once, both mother and child surviving. Craniotomy was necessitated in the case of a dead child with prolapsed non-pulsating cord. There were 61 cases of abortion and immature delivery. In 31 of these the uterus was emptied of its contents by natural methods. In 6 bi-manual expression sufficed to remove the ovum, while in 12, fingers inserted into the uterus caused complete separation of retained contents, and these were subsequently expressed bi-manually or removed by ovum forceps. In 8 cases, the cervix being narrow, a flushing curette was employed to empty the cavity. In one, replacing a retroflexed uterus and flushing out its cavity caused the ovum to escape. In the remaining two cases the cervix was dilated by Bossi's dilator to extract immature fetuses. Three cases of hydatidiform mole occurred, one of them subsequently developing a chorioepithelioma. Of three cases of hematoma of the vulva, only one necessitated opening the tumor and turning out the clots. There were ten cases of podalic version, 392 cases of lacerated perineum, and 65 forceps cases. Among the infantile conditions were the following: Hydrocephalus, 5 cases; spina bifida, 6 cases; meningocele, 2 cases; imperforate anus, 4 cases; cleft palate, 2 cases; icterus, 9 cases; and anencephalia, 3 cases.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed page 225.

26 (XXIX, No. 25.) Mechanism of Birth. New Pelvimeter.—Zur Mechanik der Geburt. Einzelne Komponenten des Beckenbaues. Die Abhängigkeit der Conjugata vera vom unteren Symphysenwinkel. S. v. Gaszynski (Warsaw).
27 *Rapid Microscopic Diagnosis.—Zur mikr. Schnelldiagnose. Wederhake (Elberfeld).
28 (No. 26.) Noch einmal zur Entstehung des Chorioepithelioms und Epithelioma chorioektodermale aus congenitaler Anlage (congenital origin). L. Pick.
29 *Zur Desinfektion der Bauchdecken (of abdominal walls). R. Saniter.
30 Zur Ausschabung des Uterus (improved curette). K. E. Laubennurg (Remscheid).
31 (No. 27.) Report of XI German Congress of Gynecology, Keil, June 13-17. See page 251.
32 *Zur Pubiotomie. O. Bürger (Schauta's clinic, Vienna). Id. O. v. Küttner (St. Petersburg).

27. **Rapid Microscopic Diagnosis.**—Wederhake describes a technic which stains fresh specimens so rapidly that the diagnosis can be made in five minutes from the time the specimen is obtained. It can be used to stain the sediment of urine and other fluids. The technic is extremely simple and practicable, differentiating distinctly almost all kinds of cells, including plasma cells, giant cells, muscle cells, certain cocci and even fat on a larger exposure. If the results are not satisfactory, or to control them, the stain can be washed away with diluted ammonia and any other stain then used. The fresh frozen section is taken up, without rinsing, in tincture of iodin (2 to 5 drops in 20 c.c. of water). The section is then transferred, without rinsing, to a 20 per cent. dilution of a stain made by dissolving crocein scarlet 7 B in 10 c.c. of 700 per cent. alcohol until the alcohol will not dissolve any more. It does not take up much. After from one-half to three or five minutes in the stain, the specimen, still held on the spatula, is rinsed and soaked in water for a minute or two—five minutes would probably dissolve out all the stain. The specimen is then allowed to slide off the spatula into a drop of glycerin on the object glass, when it is ready for the microscope after being covered with a cover glass. If the specimen is already fixed, it has to be soaked for two hours in 40 per cent. formalin, and then rinsed in water for two hours, after which the technic is the same as for fresh specimens.

29. **Disinfection of Abdominal Walls.**—Saniter urges the adoption in Germany of the French method of inverting the umbilicus to disinfect it properly before a laparotomy. The center is seized with small forceps and drawn outward, which smooths out the folds and allows the dirt of decades to be readily washed away.

32. **Extramedian Symphyseotomy.**—Two cases treated by Gigli's lateral section of the pubis are related by Bürger and two more by Küttner, the latter the first in Russia. The subcutaneous technic, without drainage, is proving most satisfactory. The operation is so simple and the results so universally good, that both writers believe that pubiotomy is destined to supplant Cesarean section and to abolish perforation of a living child, and also to take the place of prophylactic version in some cases. The bone should be sawed on the smallest side of the pelvis or nearest the fetal occiput.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed page 142.

33 (LX, No. 2.) *Fall von chronischem perforierenden Magengeschwür im Kindesalter (gastric ulcer in child). Bechtold.
34 Thymus-Drüse und plötzliche Todesfälle im Kindesalter (sudden death of children). Zander und Keil.
36 *26 Weeks' Fetus Born and Lived.—Ueber eine selten kleine am Leben gebliebene Frühgeburt. Ein Beitrag zur Frage nach dem Eintritt der Lebensfähigkeit. Oberwarth.
37 Ueber congen. Agenesie einer Lunge. Id.
38 Bericht über 1,150 Fälle von Nervenkrankheiten im Kindesalter (nervous affections in children). Schiffer.

39 Zur Serum-Behandlung. Schoen-Ladnievsky.
40 (No. 3.) *Klinische Beobachtungen über die Muskulatur der Rhachitischen. Hagenbach.
41 Ueber die Ziegenmilch und ihre Verwendung bei kranken Säuglingen (goat's milk for sick infants). Brüning.
42 *Zum Wesen des "Drüsenfiebers" unter Berücksichtigung des Lymphsystems und der Bakteriologie (gland fever). Trautmann.
43 Bemerkungen zur Ziehkinderfürsorge (frequent weighing, etc., in care of foundlings). Effler.
44 Zur Frage des extrabukkalen Scharlachs (12 cases of "wound scarlet fever"). Rossiwahl.
45 Zur Diagnose der Persistenz des Ductus arteriosus Botalli. Dressler.

33. **Gastric Ulcer in Child.**—Bechtold's patient was a girl of 5. The gastric ulcer terminated in fatal perforation in about five months.

36. **Twenty-six Weeks' Infant.**—The infant born after twenty-six weeks of gestation weighed about 750 gm. (about 24½ ounces) when one month old and when nearly three months old it weighed 1,120 gm. (about 40½ ounces). It succumbed then to a purulent ear affection. It was fed by the bottle very effectively, and during the first seven hours after birth had been exposed to severe chilling.

40. **Muscular System in Rachitis.**—Hagenbach-Burckhardt regards the relaxation and atrophy of the muscles in rachitis as the primary cause instead of the results of the abnormal movability of the joints. When the muscles are strengthened, the flail joints recover normal functioning.

42. **"Gland Fever."**—Trautmann does not regard this disease as a separate morbid entity as some have affirmed.

Wiener Klinische Wochenschrift.

Last indexed page 362.

46 (XVII, No. 17.) Beiträge zu den primären Fibro-Myomen der breiten Mutterbänder (of broad ligaments). O. Burkard.
47 Aggressin-Immunität gegen Typhus-Bazillen und Cholera-Vibrionen. O. Bail.
48 Ueber die Aggressin-Immunität gegen den Shiga-Kruseschen Dysenterie-Bazillus. Y. Kikuchi.
49 Zur Frage des Aggressins. C. von Pirquet and B. Schick.
50 (No. 18.) Dural Infusion of Tetanus Antitoxin.—Zur Behandlung des Wundstarrkrampfes mit "Duralinfusion." F. Neugebauer.
51 Hemolytic Action of Tetanus Toxin.—Die hämolytische Wirkung des Tetanus-Giftes. L. Detre and J. Sellei.
52 Ueber das Stillen und die Uraschen des Nichtstillens (breast nursing). G. Nigris.
53 Can Iron Be Administered by Inunction?—Ist Eisen auf dem Wege der Inunktionskur dem menschlichen Organismus einverleibbar? H. Goldman.
53½ Ueber die nekrotisierende Wirkung normaler Seren (necrosis-producing action of normal sera). H. Pfeiffer.
54 (Nos. 19-20.) *Rhythmische pulsatorische Kopfbewegungen (das sogenannte Musset Sche Zeichen) bei Morbus Basedowii (rhythmic movements of head). J. Zeitner.
55 *Beitrag zur Aetiologie der Herzmuskelschwache (Myasthenia cordis). H. Favarger.
56 *Pseudo-Appendizitis und Ileocökal Schmerz. G. Singer.
57 Schillers Beziehungen zur Medizin (relations to medicine). M. Neuburger.
58 (No. 20.) *Ueber Radikal-Operationen bei tuberkulöser Koxitis. Mosetig-Moorhof.
59 Zur Narkose-Frage. F. Schopf.
60 Ueber akute primäre Kolitis. D. Kokoris.
61 (No. 21.) Erfahrungen über lumbale Analgesie mit Tropakokain. Phillip.
62 Zur Kasuistik und Therapie der Elephantiasis. H. Kuhn.
63 Ueber das "Aggressin des Tuberkel-Bazillus." O. Bail.
64 (No. 22.) Radiumwirkung von Heilquellen (radioactivity of mineral springs). A. J. Kalmann.
65 Ueber den Fussschlenreflex und das Babinski Phänomen bei 1,000 Kindern der ersten Lebensjahre (plantar reflex and Babinski sign in 1,000 infants). G. Engstler.
66 To Promote Breast Nursing.—Wie können wir das Stillen der Mütter fordern. F. Hamburger.
67 Topische Diagnostik der Mittelhirnerkrankungen (affections of mid-brain). O. Marburg.

54. **Rhythmic Movements of Head in Exophthalmic Goiter.**—The rhythmic movements of the head, known as Musset's sign, which have been observed in cases of aneurism, aortic insufficiency and arteriosclerosis, were noticed by Zeither in 4 cases of exophthalmic goiter.

55. **Myasthenia Cordis.**—In the hearts in 300 cadavers Favarger found fatty degeneration in 52 per cent., cloudy swelling in 41 per cent, and atrophy and heart weakness in 7 per cent. The heart was thus found affected in 300 out of 670 cadavers examined, exclusive of the cases of pronounced valvular defects. This remarkably large proportion of anatomic affections of the myocardium was a surprise to him. Comparing the anatomic findings with the clinical diagnosis, he found that the fatty degeneration had been diagnosed in only 14 per cent., the parenchymatous degeneration in only 7 per cent. and in all the other cases no traces of the heart affection had been detected during life or they had been interpreted erroneously. The diagnoses had been made by trained Viennese clinicians, and the conclusion is inevitable that in a large proportion of cases it is impossible to differentiate it. It is wiser to give up the attempt and to diagnose merely from the most prominent symptoms, the weakness of the heart muscle, myasthenia cordis. The cause of the myasthenia is either of an infectious or of a toxic nature, or due to anemia or to sclerosis. The clinical diagnosis of weakness of the heart muscle on the basis of the morbid process causing it, is sure to be correct, and it also directs attention to the necessity for strengthening the enfeebled heart musculature by rest and tonics.

56. **Pseudo-Appendicitis and Ileocecal Pain.**—Singer has had an extensive experience of cases of illness which simulated appendicitis but were in reality of other origin, and the appendix was found sound. In a certain number of cases, the operation for the supposed appendicitis banished all the symptoms although nothing was found in the appendix to explain them. In some instances it may be possible that slight malformation or displacement of the appendix or adjacent parts might entail disturbance in circulation, causing pain, but spontaneously righting themselves later or corrected by an operation. In other cases, fractional disturbances in the lower intestine simulated the picture of chronic appendicitis, but the spontaneous cure under change of air or hydrotherapy or other general measures cleared up the diagnosis. In other cases neuroses in the sexual sphere induced obstinate spastic contraction in the lower bowel with its train of symptoms, especially pain. When the latter is located in the ileocecal region the widespread dread of appendicitis at once locates the trouble at this point. In one of the cases he describes, McBurney's point was painful; the patient was a woman of 30, the rectum free. Examination revealed severe vaginismus, which was ascribed to masturbation. A course of cold hydrotherapy banished all the symptoms and there has been no sign of appendicitis since. Appendicitis may also be simulated by a kindly affection, as he has had occasion to observe in his practice several times. Intestinal parasites can also cause symptoms suggesting it.

58. **Radical Operation for Tuberculous Hip-Joint Disease.**—In the radical operation for a severe case of tuberculous coxitis Mosetig opens the field extensively by temporary resection of the greater trochanter, not disturbing the attachment of the transverse oblique abdominal muscles. After extirpation of the focus, he fills the resulting cavity with his iodoform filling, in which he implants the end of the femur. The legs are placed parallel and the abscess cavity is drained. The pseudoarthrosis which results is much better, he thinks, than ankylosis. His 4 patients thus treated are able to walk without trouble, merely requiring an insole 2.5 cm. thick. They can sit and stand without difficulty. In one case, a previous shortening of the limb of 3 cm. was half corrected by the operation. This method is applicable for the severer cases while that recommended by Lorenz, described recently in these columns, he thinks should be reserved for the milder cases. The Roentgen pictures show the extremely satisfactory anatomic result obtained.

Münchener medizinische Wochenschrift.

68 (LII, No. 22.) Beginn und Wachstum der Darmkrebse (growth of intestinal cancer). Marckwald.
69 *Behandlung der Leukämie mit Röntgen-Strahlen. O. Rosenbach.
70 Origin of Quinquaud's Sign.—Die Entstehung des Quinquaudschen Phänomens. M. Herz.
71 *Local Massage for Hay Fever.—Zur Behandlung der Heufieber-Konjunktivitis. O. Schwarz.
72 Zur Kasuistik des "hyperkeratotischen" gonorrhoischen Exanthemes. V. Roth.
73 Fall von Erblindung nach Atoxyl-Injektionen bei Lichen ruber planus (drug blindness). W. Bornemann.
74 Ein neuer Sperrhaken (clamp). Fuoss.
75 Apparat zur Gefrierpunktsbestimmung (for determination of freezing point). P. Roethlisberger.
76 *Lymphogene retrograde Tuberkulose einiger Bauchorgane (of certain abdominal viscera). Tendeloo. (Commenced in No. 21.)
77 (No. 23.) Kroenleins Orbital-Resektion zur Behandlung retrobulbarer Geschwülste und Entzündungen. Axenfeld.
78 Preservation of Milk with Hydrogen Dioxid.—Konservierung der Milch durch Wasserstoffsuperoxyd. E. Baumann.
79 Catalytic Influencing of Oxidation of Sugar.—Die katalytische Beeinflussung der Zuckerverbrennung. H. Schade.
80 After-Results, Especially Cramps, After Administration of Theophyllin (theocin).—Zur Frage der Folgeerscheinungen, namentlich der Krampfzustände nach Theophyllingebrauch. Hermann.

81 Hepatikus-Drainage bei Situs transversus. Resektion des Ductus choledochus wegen Narben-Striktur. H. Kehr.
82 Serum Behandlung des Milzbrandes (anthrax). Wilms.
83 2 Cases of Gland Fever.—Drüsenfieber. G. Trautmann.
84 Apparatus for Manifold Extension.—Apparate zur Herstellung jeder Art von Extension. F. Kuhn.
85 Children's Asylums in the Country.—Ueber Landerziehungsheime. G. Kieln.
86 Wage-earning for Children.—Kinderarbeit.

69. **Roentgen Treatment of Leukemia.**—Rosenbach regards the sudden suppression of an essential symptom—such as occurs in leukemia when the white cells are reduced in numbers by Roentgen treatment—as a questionable advantage for the organism. The sudden and excessive demands made on it are a serious matter, the same as the rapid rise of the temperature after transient reduction by purely symptomatic treatment of the hyperthemia. He thinks that in leukemia a certain number of the white blood cells—and probably also of the red—are destroyed by Roentgen treatment. Others are attracted to the skin by the local irritation of the rays. These processes alter the composition of the blood to a certain extent, and as the blood is the organ which supplies stimuli for the functional activity of the tissues, the production of leucocytes is inhibited to a certain extent. It is an open question whether the radiation is itself the inhibiting factor or the direct or local action of the rays on the blood, or whether the products of the destruction of the blood cells may not be the determining factor. The inhibiting influence exerted by the rays is probably only a temporary compensation of the actual morbid cause, just as the benefit of purely symptomatic measures to reduce fever is experienced only so long as these measures are kept up. He warns against accepting these temporary effects as removal of the cause. The history of Roentgen treatment of leukemia is passing through the same phases as that of tuberculin treatment of tuberculosis. Instead of the maximal stimulus, the aim now is to use the smallest possible amount, and to treat patients with the smallest possible amount of stimulation.

71. **Local Massage for Hay Fever.**—Urbantschitsch gives an illustrated description of a little electric apparatus with which he massages the mucosa of nose and throat.

76. **Lymphogenic Retrograde Tuberculosis of Certain Abdominal Organs.**—Tendeloo relates a number of cases of tuberculosis of kidneys, suprarenals, sexual organs, liver, spleen and peritoneum in which the location and distribution of the foci conflicted with the assumption of a hematogenic origin. On the other hand, everything harmonized with the assumption of a retrograde lymphogenic origin. The absence of any other tuberculosis foci in the intra-abdominal organs and tissues, while such existed in the lungs or pleura, was another argument in favor of this assumption, as also the finding of dust pigment in the abdominal foci, suggesting that the tubercle bacilli had migrated from some intrathoracic focus by way of the lymphatics. The liver is connected directly with the thorax by the lymphatics, that is, there are no interposed glands, he has found, and he thinks it probable that a similar direct connection exists between the suprarenals or kidneys and the thoracic cavity.

Gazetta degli Ospedali, Milan.

87 (XXVI, No. 46.) Valore della citodiagnosi. A. Rossi.
88 Cura dell' appendicite. G. Santoro.
89 *Immunizzazione per morfina. G. Argentina.
90 (No. 47.) *Eclampsia gravidica e paratiroidina. G. Vassale.
91 (No. 49.) *Sul significato clinico della formula bacillare tubercolare in genere, della streptococciforme in specie. S. Mircoli.
92 Caso di Pseudoleucemia curato col raggi Roentgen. C. Gennari.
93 (No. 52.) *Sulla interpretazione delle iperglobulie dei Tubercolosi e dell' eccitamento da tubercolina. S. Mircoli.
94 Le alterazioni secondarie del polmone nelle pleuriti essudative croniche (changes in lungs). E. Chilesotti.
95 Tumori del mediastino. E. Clerici.
96 *Importanza degli ascaridi nella chirurgia addominale. N. Soma.
97 (No. 55.) Sull' independenza funzionale ed anatomica dei lobi del fegato (of liver lobes). T. Silvestri.
98 *Di talune cirrosi epatiche e del loro trattamento. B. Schiassi.
99 *Esiste un serio pericolo nella conservazione di parte della of cervix) ? A. Gasparini.
100 (No. 58.) *La pallestesia (sensibility to tuning-fork applied to skin). E. Maragliano.
101 *Nuovo metodo per differenziare il bacillo di Eberth dai bacilli eberthiformi e dai coli. P. Trapani.
102 La corrente alternativa sinusoidale e la corrente pulsante nella cura della malattia di Basedow (electric treatment). G. Severino.
103 *Intravenous Injections of Sublimate in 4 Cases of Scarlet Fever.—Iniezioni endovenose e sottocutanee di sublimato in 4 casi di scariattina grave. L. M. d'Andrea.
104 Sopra 3 casi di anemia perniciosa progressiva ed 1 di anemia sintomatica grave. U. Zoppelli.
105 Eclampsia puerperale. O. Betti.

89. **Experimental Immunization to Morphin.**—Argentina experimented on rabbits, finding that very slow, gradual administration of morphin induced more active immunization than when large doses were given in a comparatively short time. The aqueous extract of the brains of animals, in suitable doses, thus treated was able to neutralize the minimal fatal dose of morphin, but less actively than the serum of the animals. Large doses of the brain emulsion proved toxic.

90. **Parathyroid Treatment of Eclampsia and Epilepsy.**—Vassale's previous communications have been summarized in these columns. He relates here that no change was noted in one case of epilepsy under treatment with extract of the parathyroid glands from beef cattle, but in two other epileptics the improvement was most striking. One was a young woman who had had epilepsy from childhood and severe psychic disturbances. No other treatment had been applied for several years. He has noticed that dogs show marked changes in character after extirpation of their parathyroid glands, with hallucinations, depression with constant whining, resembling human melancholia, and states of excitement amounting to actual mania. Such symptoms as these are not observed in any other experimental intoxication. Removal of the thyroid gland does not induce these acute psychic disturbances, but merely a slow and progressive mental torpor as symptoms of myxedema develop. He suggests that parathyroid treatment should be given a trial in mental affections. The benefit that has been noted under thyroid treatment in certain cases of mental affections may possibly have been due to scraps of the parathyroid inadvertently used along with the thyroid, and the cases of failure to the absence of such fragments. He is convinced that the parathyroid theory of the origin of eclampsia harmonizes with the clinical facts observed. Latent functional insufficiency of the parathyroid gland with pregnancy or the puerperium superposed, causes the outbreak of eclampsia; the other causes that have been assumed to be the source of the trouble are merely co-operating factors. The latter may act by the cumulative action of their influences and those of the pregnancy of puerperium and together induce functional insufficiency of the parathyroids or cause definite injury to them. The trouble may likewise be due to congenital defects in one or more of the parathyroids. The last assumption would explain the occurrence of eclampsia in sisters and in cases of myxedema. Special attention should be paid to the parathyroid glands in postmortem examination of women who have succumbed to eclampsia.

91. **The Bacillary Formula in Tuberculosis.**—Mircoli emphasises anew that when bacilli lengthen out it is a sign of diminished virulence. He reviews recent works on the bacillary formula, all confirming his previous assertions on the subject. The streptococcal form of the tubercle bacilli in the sputa, especially if comparatively long, indicates a mild course of the disease, as it is a sign that the organism is opposing a vigorous resistance. Sclerosis will develop or is already developed. The short, thick forms of the bacillus have an opposite significance. Even a large number of the streptococcal shapes in the field is less unfavorable than the finding of even a few of the short, pulpy shapes. When these shapes alternate, the prognosis depends on which seems to be getting the upper hand.

93. **Excess of Blood Corpuscles in Tuberculosis.**—Mircoli thinks that far too little attention has been paid to the hyperglobulia of the tuberculous. It may be the explanation for the so-called "florid" cases of tuberculosis, and also the benefit of small repeated withdrawals of blood in incipient tuberculosis which Sydenham reported. A "florid" aspect with hyperglobulia should not be regarded as against the assumption of tuberculosis in dubious cases. He further calls attention to the fact that injections of tuberculin, previous to an operation, have the power to increase the leucocytosis, and thus enhance the resisting forces of the peritoneum. Isaeff reported several years ago that tuberculin is able to reinforce

the resisting powers of the peritoneum against infection. This is not surprising when we reflect that the active principle of tuberculin is its nucleinic or thymic acid, and that the latter is composed in large part of phosphorus. This explains why tuberculin itself, in certain individuals and circumstances, can exert a stimulating action in the general biologic constitution and on the blood-forming organs in particular. The nucleinic acid present in the tubercle bacillus is a hundred times more toxic than that of its congener, the thymic acid in the thymus. But the fundamental law holds good, and tuberculin, like nucleinic acid, like dead tubercle bacilli, like the semen, the thymus or spleen and like phosphorus, has a true stimulating action on the organism in a given dosage, under certain conditions, and hence on its general immunity and on the formation of blood. A suggestive fact was related not long ago by Arloing. He found that after animals had been inoculated in the spleen with tuberculosis, if splenectomy was performed not long thereafter, the animals died much more rapidly than the other animals with their spleens left in place, although studded thick with tuberculous lesions. The abundance of nucleinic acid in the spleen possibly conferred greater resisting powers on the organism. A tuberculous spleen is frequently associated with enormous excess of blood corpuscles, and this may possibly explain the "florid" cases of unmistakable tuberculosis occasionally observed.

96. **Importance of Helminths in Abdominal Surgery.**—Soma reports a case in which the healing of an abdominal wound was delayed by an ascaris which had worked its way into the wound. D'Alessandro has witnessed four similar cases, in one of which the emergence of the helminth through the wound infected it, with a fatal result. He advises that when the surgeon can palpate helminths through the walls of the intestines he had better remove them when operating for abdominal traumatism, even if it be necessary to make a small incision in the intestine for the purpose. Soma thinks that this would be comparatively useless, and suggests the injection of some worm-killing fluid into the intestine through the open wound. This would render torpid the helminths in the vicinity and further measures for their evacuation could be applied later.

98. **Certain Forms of Cirrhosis of the Liver and their Treatment.**—Schiassi does not accept the classification of liver cirrhosis advocated by Chauffard and others. He recognizes five varieties, based on the anatomic findings, the venous, the arteriovenous, the biliary, the capsular and the mixed. The ascites may be due exclusively to obstruction in the portal circulation or exclusively to the peritonitis, or to both combined. When due exclusively to the portal obstruction, an early operation has every prospect of success. Numerous clinical and experimental data have established the fact that the portal circulation can be effectively restored by anastomosis even when obstruction is complete. When a patient with cirrhosis of the liver and ascites suffers from vague pains in the abdomen, with rise of temperature, right pleural effusion and sensitive liver, and when the ascitic fluid contains a large proportion of albuminoids and has the characters of an exudate, then the indications for surgical intervention should be formulated with extreme care. Tuberculous peritonitis accompanying cirrhosis of the liver may be cured by a laparotomy as also peritonitis from other causes. Parona has reported a case in which he opened the abdomen intending to suture the omentum in a Talma operation. The omentum was missing, and he therefore merely sutured the abdomen after evacuating the fluid. The patient recovered. Similar cases have been reported by others since, and the conclusion seems inevitable that the effusion in these cases is merely the expression of a readily curable inflammation. He adds that the inflammation is curable only when it is a comparatively mild, chronic inflammation. If the inflammation is not in this chronic phase, the operation might easily aggravate it. He is convinced that some of the deaths that have been known to occur soon after laparotomy for peritonitis were due to aggravation of the existing peritonitis. The surgeon should be guided by the rule that laparotomy is indicated at once on the diagnosis of ascites due exclusively to portal obstruction. The omentum should be transplanted and other measures taken according to individual indications. On the other hand, if the ascites be due, either wholly or in part, to inflammation of the peritoneal serosa it is unwise to attempt any surgical interference until the inflammation has passed into the chronic stage. If necessary, the patient can be tapped. The laparotomy should be postponed until four months at least after the appearance of the ascites. During the interval medical measures should be used, milk diet, calomel, possibly iodin subcutaneously, and liver extract or fresh livers might be given to advantage. He has only good results from this organotherapy.

99. **Is there Danger in Leaving Part of the Cervix.**—Gasparini tabulates the details of 51 cases since 1898, in which incomplete hysterectomy was done for various reasons. There were 3 deaths. The mortality after complete hysterectomy is higher than this, as he shows by comparative tables. He adds that no case of carcinomatous or sarcomatous degeneration of the stump occurred in his series.

101. **Differentiation of Typhoid Bacillus.**—Trapani asserted that the typhoid bacillus behaves differently from the pseudotyphoid and the colon bacillus in the presence of glycerin. He transfers a platinum loop of the culture to 1 c.c. of distilled water, and keeps the test tube in the thermostat for an hour at 30 C. Ten loops of the contents are then transferred to another test tube containing .5 c.c. of neutral, sterile glycerin. A fresh loop is taken each time to prevent mixture of the fluid with glycerin. The glycerin tubes are left undisturbed in the dark at room temperature for forty-eight hours. Agar plates are then inoculated with the glycerin bacilli. The pseudo-typhoid and colon bacilli proliferate undisturbed while the typhoid bacilli are unable to proliferate after their sojourn in the glycerin.

103. **Intravenous Injections of Corrosive Sublimate in Scarlet Fever.**—D'Andrea relates that there were no deaths in 52 cases of scarlet fever during a recent epidemic, but that the disease then assumed a more malignant form and 6 died out of the next series of 12. Alarmed by this mortality, he treated the next 4 patients by intravenous or subcutaneous injection of from 2 to 4 mg. of bichlorid of mercury. All were very severe cases, but recovery ensued in all. The improvement was so marked under this treatment that he has since treated 9 cases of severe typhoid and one of puerperal infection in the same way. He calls attention to the pronounced antithermic action of the bichlorid of mercury when used intravenously or subcutaneously. The temperature drops in from two to six hours.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Scientific Reports on the Investigations of the Imperial Cancer Research Fund. Under the direction of Royal College of Physicians of London and Royal College of Surgeons of England. E. F. Bashford, M.D. Part I. The Statistical Investigation of Cancer. Part II. The Growth of Cancer Under Natural and Experimental Conditions. Paper. Pp. 58 and 96. Price 2s. 6d. each part. London: Taylor & France, 1905.

First Aid in Illness and Injury, Comprised in a Series of Chapters on the Human Machine, Its Structure, Its Implements of Repair and the Accidents and Emergencies to which it is Liable. J. E. Pilcher, M.D., L.H.D., Ninth Edition; 208 illustrations. Leather. Pp. 356. Price, $2.00. New York: Charles Scribner's Sons. 1905.

Evolution of Man. A Popular Scientific Study. E. Haeckel. Vol. I. Human Embryology or Ontogeny. Vol. II. Human Stem-History of Phylogeny. Translated from the Fifth (enlarged) edition by Joseph McCabe. Cloth. Total pages 905. Price $10.00. New York: G. P. Putnam's Sons, 1905.

Text-Book of Physiology, Normal and Pathological, for Students and Practitioners of Medicine. W. S. Hall, Ph.D. Second edition, Revised and enlarged; 340 engravings and Three Colored Plates. Cloth. Pp. 795. Price, $4.00 net. Philadelphia: Lea Brothers & Co. 1905.

Color-Vision and Color-Blindness. A Practical Manual for Railroad Surgeons. J. E. Jennings, M.D., 27 illustrations and one colored plate. Cloth. Pp. 132. Price, $1.00 net. Philadelphia: F. A. Davis & Co., 1905.

Transactions of the Gynecological Society of Boston, reported by A. P. Clarke, A.M., M.D. Cloth. Pp. 178. Boston: David Clapp & Son, 1905.

First Aid for Persons Overcome by Gas. Cloth. Pp. 15; 15 illustrations. Philadelphia: United Gas Improvement Co.

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Addresses

STATUS OF MEDICAL AFFAIRS IN THE PHILIPPINE ISLANDS.*

JOHN R. McDILL, M.D.
MANILA, P. I.

The account of the first public and scientific meeting of the Philippine Islands Medical Association was read no doubt with considerable interest and some curiosity by many of the 40,000 readers of The Journal of the American Medical Association, with which Association we are affiliated. We introduce ourselves to them and to this community by rendering an account of our environment, who we are, of what has been done in medical channels, and also something of what we hope to accomplish.

History tells why we came to the Philippines, but the good friends at home who have never been here, do not understand why some of us remain.

The American medical men who first came to this archipelago and who laid the foundation of modern research medicine, wore the uniform of the United States army and volunteer surgeon. It is doubtful if one of us thought that here he might make a new home and find new fields of labor. For two years our life was that of the soldier, and medical affairs were the many and arduous duties of the army surgeon in field and garrison. At the end of active military service, those of us who knew anything at all of the art of living to begin with, learned to adapt ourselves to the new physical conditions and the exotic climate and were more than ever constantly impressed with the beauty and resources of the country. We have come to esteem to the utmost the climate which so effectually guards many of you against the too strenuous life and which is almost ideal eight months in the year, even in Manila. Our professional experience has proven that, excepting some intestinal disorders which we are rapidly preventing and curing and a limited amount of epidemic infectious diseases, there is nothing unusual about the kind or amount of disease encountered here, or its successful treatment when hospital care is available. The surgeons' work has fully demonstrated that ideal wound healing and convalescence after operation is as much the rule here as anywhere in the world. We physicians also know and appreciate that the dread diseases of childhood so prevalent at home are rare here and that of all the ills, particularly among women, from real bodily ailments to a poor complexion, for which the climate is invariably blamed, the great majority are hereditary or acquired, were brought here by the patient and often aggravated by careless and unhygienic living. For old people and children the climate is an earthly Elysium.

The complement to the climate is the beauty and charm of the mountainous nature of the islands which invite excursions where, among thrilling scenery and invigorating cold, one finds a hunter's paradise in woods full of deer and wild boar and in marshes teeming with feathered game, which have scarcely ever heard a gun. Those who need or prefer to take vacations abroad can have pleasant voyages among our southern islands or to the nearby and interesting countries of China and Japan, Java and the Straits Settlements, or further to India.

The greatest general interest at present is in the result of the Benguet experiment to alleviate the life of foreign residents. One hundred and thirty miles from Manila is a government reservation in the Benguet Hills, 6,000 feet above sea level, where there is an actual temperate climate and where amid inspiring views one inhales cool, invigorating and exhilarating mountain air, flavored with the breath of Norway pines, where trips on foot or horse can be enjoyed for miles on the plateaus and hills, where in the evening fires are necessary in the houses and three or four blankets essential for a comfortable night. This region is now open to the public by the completion of a colossal piece of road building and can be reached from Manila, when rails are laid, in a few hours. The successful completion of this much discussed and much abused road for the opening up of a summer residence in these hills will have more to do than anything else with solving the problem of how we and our families can exist, perhaps permanently in this tropical climate, outside of our proper racial zone and the peculiar environments, thought to be essential to our well-being and to our proper term of life.

With the improved and constantly improving conditions of living, we believe that almost all will agree that by observing the normal and moral life, healthy Americans can live about as long here and enjoy as good health and do as much good and hard work more than three-fourths of the year as we could in the homeland. And that is enough for anyone. Yet our friends at home persistently pity and commiserate us and wonder what keeps us here, but from now on, at least when we strike our balance between what we had in our former prospects and what we now have and expect in the glowing future, it is surely, remembering the fewness of our working years, a perfectly natural spirit that detains us here to work on in the hope of tilling to the utmost the unscratched fields of this virgin country that beckons the followers of almost every occupation and every profession. In our world of embarrassments we have always the restful feeling that we can rely absolutely on the friendship, power and activity of our home government.

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* President's address, delivered at the second annual session of the Philippine Islands Medical Association, Manila, P. I., March 1, 1905.

SOME INSULAR MEDICAL INSTITUTIONS.

Pride in the achievements of the Insular Board of Health, especially in its last three years' work under inconceivable difficulties, is shared by the medical profession and public alike. So valuable are the healthful conditions its intelligent and scientific labors have helped to create, that other government and commercial measures, no matter how vital or how earnestly attempted, could not have been so fully and successfully carried out. Manila is now a healthful and safe city and when in the near future the extensive public improvements now under way are completed, it will be not only the healthiest and handsomest, but the most prosperous city in the Orient.

Following the establishment of the Board of Health came the Government Laboratories and its scientific libraries, much criticised because of their supposed cost when other institutions were regarded by the public as entitled to precedence. From a scientific standpoint, however, they place the islands second only to Europe, America and Japan, and their economic value has already been inestimable through their work in combating disease in man and animals, in demonstrating the resources of the country and in saving crops from the ravages of pests.

These laboratory facilities, it should be remembered, are freely open to research workers from any part of the world; original investigations of far-reaching importance have already been given to mankind and original research work is constantly going on.

With the coming from the public schools of native candidates for general science and medical courses, these laboratories, with slight alterations, will provide at once the facilities for and teachers of the fundamental branches, or first two years of such courses which are now taught entirely by laboratory methods.

HOSPITALS.

An infectious disease hospital of permanent construction for 100 beds was opened in January, 1904. Temporary arrangements for the care of (75 male and 15 female) insane have just been completed. A venereal detention hospital has been in operation under government care for four years and there is a special hospital for civil employés. The Women's Hospital, founded by Mrs. Whitelaw Reid, after an existence of nearly two years, succumbed in 1902 to opposition, hard times and mismanagement. A leper colony has recently been established on one of the smaller islands, but a general hospital in which the medical profession and the laboratory scientists, with their unlimited facilities, could properly treat and investigate disease among the natives has not yet been established even on a temporary basis.

This country is overrun with untreated chronic diseases and would furnish enormous material for investigation. Full three precious years have been wasted in which work of greatest importance could have been accomplished. Board of Health statistics show that the mortality of infants in the first year is 60 per cent., and that even in Manila 52 per cent. of all deaths occur without medical attendance. Think of what could have been done by the study of 100 cases of infantile disease and 100 cases of dysentery and beriberi with any sort of hospital accommodations by our trained clinicians and investigators long here and yearning for the opportunity.

When a government general hospital does come, may the grave question of management be rightly decided, and may the management remember that in the treatment of disease the evils of ignorance and faith cure cults can be best combated only when medical science is put into close relationship with the highest moral and religious influences.

MEDICAL ORGANIZATIONS IN THE PHILIPPINES.

The history of medical organization since American occupation is brief. During the military times an army medical corps lyceum was established by Colonel Greenleaf and flourished for a few months. In 1901 a general medical organization for the islands was under way, but was discouraged by a request from the Civil Commission that for political reasons the project be abandoned, and it accordingly was.

July 4, 1902, a call to form the Manila Medical Society was signed by ten American and English physicians; organization was effected at once on the basis laid down for local societies by the American Medical Association. The purposes of the society, as stated in the preamble, are "to promote the science and art of medicine, the cultivation of fellowship, exchange of experience, the maintenance of ethical standards, and the promotion in general of the interests of the profession and the welfare of the public."

Monthly meetings are held and the character of the papers, many original, and the attendance and interest shown in the discussions give it a scientific importance that compares favorably with some of the best medical societies at home. It has been a great encouragement and benefit to its members.

At the annual session of the American Medical Association in New Orleans in 1903, a body of over 15,000 physicians, representing several hundred subsidiary societies, the affiliation of the Manila Medical Society was authorized on the basis of a state organization. This was effected in September, 1903, by organizing this association, the Manila Medical Society becoming its first component society, which preserves the integrity of future local or provincial societies. Thus the Manila and any future societies become, through this Philippine Islands Medical Association, the only avenue in this part of the world to membership in the great home body.

The councils of the local and provincial societies, like the houses of delegates of the state and national organizations, are representative bodies of picked men, which deliberate on and carefully dispose of many of the practical medico-social, medicolegal, medico-political and medico-material problems constantly puzzling us as a well-developed unit in the social order of the age. (Simmons.)

THE FILIPINO MEDICAL MAN AND HIS SCHOOLS.

Of greatest interest to us when we found time to make their acquaintance were our Filipino colleagues. We found them courteous and charming in manner, alert and devoted to the interests of their patients, apparently enthusiastic in medical affairs, good students of French and Spanish literature, and liberal purchasers of new instruments and remedies. They have two striking characteristics, an astonishing capacity to absorb and expound theory, and they have occupied an unique social position in that the abler members of the profession have always been foremost among the political leaders of their country.

An interesting feature of medical practice here was the custom, still somewhat in vogue, of charging enormous fees for even ordinary services, sometimes running up into the tens of thousands, and the fact that these delightful fees were often collected was probably due somewhat to the political importance of the profession. Their general education was in the schools of the religious orders, their professional training in the medical department of the University of Santo Tomás and in some instances supplemented by a course of study in Spain or France. Attracted by the personality of the better class of native doctors, earnest overtures have been made to fraternize and interest them in medical society work and making all due allowances for difference in language, customs and education, we are not able to satisfactorily explain the reason of our almost total failure to affiliate them. We are glad to say that a year ago a native and Spanish medico-pharmaceutical society was established and the American Principles of Medical Ethics adopted. We are about resigned to the belief that no close community of professional interests will be possible until the arrival of a new generation of native doctors educated in English and in the modern university schools, where they are actually educated instead of having some information imparted to them.

The existing Spanish institutions that interest us are three, the University of Santo Tomás, its Medical College of San José and the Hospital of San Juan de Dios.

The college of Santo Tomás was founded for the Filipino people in 1612 by the Dominican, Miguel de Benavides, the third archbishop of Manila. It was raised to the status of a university in 1645. From 1785 it has been styled the Royal and Pontifical University of Manila and is the only university authorized to issue diplomas in theology, law, medicine and pharmacy.

Graduates of the several church colleges, whose average age is about sixteen years, are admitted without examination. It has had 118,741 students, less than 3 per cent. of whom, or 3,434, have graduated. It has at at the present time 982 students in all departments.

By royal decree of 1876, reorganizing this university, the departments of medicine and pharmacy were created, with a provision that they be installed in the famous college of San José, which was lost to the Jesuit fathers by their expulsion in 1768. Medical instruction had begun, however, in 1871.

The affiliation of the Medical School of San José with the University of Santo Tomás, which issues the degrees, seems rather nominal as the school is quite autonomous, resembling in this respect the relation of many of our home proprietary medical schools to some universities.

The published list of the medical faculty shows 81 names, and of these about 20 are the active professors and teachers. To date, after 35 years of existence, diplomas have been granted to 10 doctors and to 247 licentiates of medicine. The difference between doctors and licentiates is an extra college year and 100 pésos ($50) more fees. The average age of graduates is 26 years. There is another class, called cirujanos ministrantes, who, after two years' instruction in college and hospital, are licensed to practice medicine only and where no doctor or licentiate is available.

The medical course lasts seven years; the fees for the entire course was 242 pésos ($121). The licentiate pays about 200 pésos for his title, and the doctorate degree costs 350 pésos and one more year's study. The present class numbers 135. The graduating class for 1905 consists of but 5 members.

The teaching, which is didactic and clinical and not graded, is mostly given in the Hospital of San Juan de Dios, founded in 1596 and conducted by the Sisters of St. Vincent of Paul. The hospital has now 27 Sisters, about 200 patients, 8 attending physicians, and 14 of the professors of the Medical College of San José give clinical instruction to medical students.

STATUS OF MEDICAL CONDITIONS AND NEED OF MEDICAL SCHOOLS.

To supply the medical and sanitary needs of this country, 2,000 or 3,000 native physicians and sanitarians should be educated here during the next 20 years.

The population of the islands is about 7,500,000 people, 6,000,000 of whom are said to be Christians. The statistics of the Manila Medical Society show that the total number of licensed physicians is only 360, and 217 of these are in the city of Manila. These figures mean that, although in Manila there is one physician to 1,013 inhabitants, in the provinces the proportion is but one to 51,786, or one physician to each 430 square miles.

In the policy of the government for the general improvement of the Filipinos, perhaps the greatest results are looked for from the Department of Education. With the coming of advanced students in June of next year and the necessity of professional schools for them, it is essential that these schools be established along the lines of the best modern thought, the university plan.

The present status of medical science as defined by Dr. Billings requires and demands a university medical college course. By a university medical college is meant a medical school which is directly connected with and a part of a university, the university fixing the requirements and controlling the admission of students to the medical department. For this ideal and practical scheme of medical education, all the fundamental sciences must be taught entirely by the laboratory method of individual instruction and by teachers who give their whole time to research work in connection with the instruction of students. This plan could be carried out now in the government laboratories, which have the men and facilities to instruct in anatomy, physiology, chemistry, pathology, bacteriology, etc.

The second two years of senior college work should be supplied with facilities of equal rank in clinical medicine, surgery and obstetrics by the endowment of research hospitals in which the instructors devote their entire time and energy to teaching and investigating disease. The cost of these hospitals, if ideally built, equipped and endowed in perpetuity, is stupendous, and in the United States two millions is thought to be about right for each of these hospitals.

No teaching hospitals, however costly, would serve their purpose without an abundance of cases to choose from, but the clinical material available here is practically unlimited. The government has set aside a centrally located site of 23 acres in the city of Manila, ostensibly for hospital purposes, and these two things alone should attract the attention of some man of large means looking for the right opportunity to benefit mankind and assist the Filipino people at the same time.

Untrammeled by traditions of a past or by proprietary medical schools and urged on by the necessity of supplying the country with sanitarians and physicians as fast as possible, a demand that can not be supplied in many years, there is here an unique opportunity for the establishment of the ideal university and affiliated professional schools. There will be no lack of candidates; the Filipinos are bright, earnest, capable students and especially inclined to the study of the learned professions.

This association is, of course, particularly interested in the medical department of a Philippine university, and we find our encouragement in the peculiar preference of the native for our profession; in his alert and inventive mind, coupled with a natural dignity of manner and a certain manual dexterity and accuracy and in the fact that the 140 students in the United States are showing marked aptitude and progress in their studies.

In conformity with the highest purposes of all medical organization, which are the extension of medical knowledge, the advancement of medical science, the elevation of the standard of medical education and the enactment and enforcement of just medical laws, this association, through its permanent Committee on Public Policy and Legislation, petitioned the governor-general in January of this year to appoint, without delay, a board of regents, provisional or otherwise, to report on a plan for the formation of professional schools as part of a university system. This action was taken after consultation with the superintendent of public education, who had already recommended steps looking to the establishment of a university, and who stated to us that by June, 1906, there will be between four and five hundred students who can take some of the branches of a preparatory university course.

It is also confidently believed by the normal school teachers that their schools will be on the plane of the American high school in another two years.

Our greatest hope for the future lies in the education of the people in sanitary matters and the enforcement of laws, and this can only be accomplished by a small army of native sanitarians. Preventive medicine has profited far more than curative medicine by the discoveries of recent years, hence a Philippine medical school should devote its first years to supplying this most pressing need by turning out as many sanitarians as possible. While always standing for the highest practicable requirements, in view of our distressing lack of this class of men, the requirements for admission and graduation should be minimized at the start; to balance this compromise, the first classes graduated can take postgraduate work later in their careers.

Billings estimates the cost of a complete modern medical education to be between $6,000 and $8,000. Keen has shown that the teaching force has increased 110 per cent., against an increase of fees paid by students of less than 100 per cent. It is clear that state aid or private endowment must be had.

Quoting from Dr. Dodson's address, we hear again that at present private beneficence holds out much the larger promise, and in the hope of such assistance there is every reason to feel the greatest encouragement. The recent gifts to medical institutions and for the promotion of research on a princely scale are conclusive evidence that men of affairs and of large capital, whose chief desire is to find a use for their money which shall be of the greatest service to mankind, have come to realize that in these medical channels, especially, large gifts are more likely to yield a certain speedy and bountiful return in good to the world. Since 1900 nearly 300 millions represent the amount of gifts and bequests for all purposes in the United States alone.

One year ago to-day Dr. W. W. Keen[1] made a ringing plea for increased endowments for medical instruction which will soon vitally concern us in what he supposes some would call "far-off, barbarous Manila." The main reason he advanced for generous endowments from the public is the sordid commercial value of the profession to the public. Dr. Keen was not talking of the value of health to anybody or of the desire for the health of those dear to us at home, nor of the kind father that may be lost to a young and dependent family, of the loving mother or of the dear child whose place can never be filled in our hearts or homes, but merely of the profession's value to the community in hard cash, dollars and cents.

The horrors of quarantine of a few years ago, he points out, have been almost abolished by reason of the research work of the medical profession. We no longer fear cholera, the plague, yellow fever or even typhoid fever, because we have killed the rat, we can quarantine or destroy the mosquito, we have barred out the fly and we are boiling and filtering our drinking water. All these things have been shown to be needful and efficient for the prevention of disease by the most patient scientific laboratory work.

A few years ago a single case of cholera or yellow fever in any great port would have meant the loss of millions of dollars to the merchants, but to-day these cases, even of plague, scarcely create a ripple of excitement, because the community knows that our able medical men have these diseases by the throat. Look at the epoch-making work of Dr. Walter Reed and his fellow-workers in Cuba. For the first time in 170 years Cuba has been made free and kept free from yellow fever, and the merchants from New Orleans to New York are reaping the benefit of this unselfish labor in hard dollars on the credit side of their accounts.

The horrible character of plague we scarcely appreciate. In the fourteenth century, twenty-five millions of human beings lost their lives in Europe alone, and even to-day in India, among the ignorant people, over two hundred thousand lives are lost every year from plague. Haffkine's inoculations have diminished the susceptibility of the people by 75 per cent., and the mortality in equal proportions, and the time is coming when the plague, like yellow fever and smallpox, will be practically wiped out.

Again, we must not forget what smallpox was in the past. In the eighteenth century sixty millions died from smallpox in Europe alone, and almost all the living were left with the marks of the disease on their persons. It was as uncommon in the streets of London to see a person not pockmarked, before that memorable day when Jenner inoculated young Phipps in 1796, as it is to-day to see one in New York who is pockmarked. Consider what these millions of saved lives mean in revenue to the state, to the family, in the prevention of pauperism, and the comfort of human beings; then, we must appreciate the value of the services of one man, the most magnificent benefactor of the human race that ever lived, Edward Jenner.

In 1890, Keen estimates that there were 157,000 unnecessary deaths in our large cities. The sanitary reform in 1895 saved in three years a total of 21,300 cases. As there is an average of twenty-eight cases of sickness for every death, sanitary reform in those three years prevented about 600,000 cases of sickness. And who were the reformers? The physicians. The hundreds of millions to be saved in fifty years in one large city alone would enrich the most avaricious of nations.

You all know what has been done in diphtheria in our day, and it has not been done by constant and fruitless trials of various supposed means of cure, but it has been done by exact laboratory work by quiet men working far away from the sick room, with not a single human patient under their care, men who are not practitioners of medicine, but pathologists and bacteriologists, experimenting on rabbits, guinea-pigs and mice instead of on men, women and, especially, dear little children, and thus working unobserved and unheralded and unseen they have given to the human race a boon second almost to that of Jenner. The mortality of diphtheria has fallen from 40 to 8.8 per cent., and in laryngeal cases before the serum treatment the mortality was 73 per cent., recoveries 27 per cent., and now precisely the reverse has become the case.

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[1] Address at the dinner to Dr. D. B. St. John Roosa, March 1, 1904, by Dr. W. W. Keen of Philadelphia. While elaborating a similar arrangement the reprint of this stirring address providentially arrived the day before our meeting and was in part appropriated bodily. It could not be better expressed.

Great epidemics of typhoid have been traced to one case contaminating the water supply of a city, which is preventable.

Malaria was formerly thought to come from marshes and decomposing vegetable matter; now, thanks to the investigations of medical men, you all know perfectly well that if you shut out the mosquito you shut out malaria, as well as yellow fever. When the United States digs the Panama canal, there will be seen a splendid object lesson in sanitation that will carry conviction to all of the money value of medical research in the saving of millions of dollars and thousands of lives.

We are on the verge of an equally beneficent improvement in the treatment of tuberculosis. In Germany the cure of even 10 per cent. adds two millions annually to the resources of the state, and human lives and human happiness can not be reckoned in dollars and cents.

In military hygiene and sanitation the money return is equally profitable. Witness the fearful losses of the British from preventable disease in South Africa, or, worse still, our own losses in the Spanish-American war, where the mortality from wounds was 1 per cent. and that from preventable disease 70 per cent. This could be now characterized as governmental murder through criminal neglect, since the Japanese have practically eliminated disease as a factor in war.

The Japanese determined that their only hope in the war with Russia was that every man who died should die on the field of battle, and in that way neutralize the superiority of two million Russians under insanitary conditions with half a million Japanese protected from disease by a capable medical corps backed up by their government with every authority and facility to prevent disease.

Translate all these facts into figures and the commercial value of modern surgery and of all the medical work done in diseases of animals, and who can tell us the money value of medical research work?

Dr. Pritchett, in McClure's magazine, well says that "The research habit, once thought so far removed from utilitarian ends, is to-day the greatest financial asset of Germany," and we Americans, whether at home or in her possessions, can acquire that "research habit" and teach it to our charges and make it our best and most valuable financial asset, but this takes money.

On account of the complexity and multitude of questions to be solved, such a board as suggested would hardly have a complete outline of plans in two years, and a further reason for its prompt creation lies in the fact that some such definite action is necessary in order to successfully invite private endowment, which must be secured in view of the enormous expense entailed by modern university school methods, particularly in the medical department; further, the appointment of regents would give the department of education the exact impetus it needs at the present time by opening up to its students the vista of higher education.

There is surely a rich man, or better still a rich woman, somewhere who can be found willing to contribute by his or her means to establish a Philippine University Medical School and perhaps temporarily to assist the present school of San José to increased production until it can be absorbed by the university.

The medical profession is but waiting to assist with all its power an earnest and active board to point out to donors the genuine and lasting pleasure that it gives to share in the great and lasting benefits given to humanity by the research workers in medical fields.

THE TEACHING OF PEDIATRICS.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON DISEASES OF CHILDREN, AT THE FIFTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, PORTLAND, ORE., JULY 11-14, 1905.

JOHN LOVETT MORSE, A.M., M.D.,
Instructor in Pediatrics, Harvard Medical School; Assistant Physician at the Children's Hospital and at the Infants' Hospital; Visiting Physician at the Floating Hospital.
BOSTON.

Harvard requires for admission to its medical school a degree in arts, literature, philosophy or science from a recognized college or scientific school, except that those who have acquired an equivalent education may be admitted by a special vote of the administrative board in each case. All candidates are required to satisfy the faculty that they have had a sufficient course in theoretical and descriptive (inorganic) chemistry and qualitative analysis or to pass an examination in the same.

The course of study required for the degree of M.D. is of four years' duration. The first three years are devoted to prescribed work and the fourth year entirely to elective courses. A minimum of 1,000 hours' work is required of each fourth-year student. Written examinations are given in the studies of the first three years. In the fourth year the nature of the examination is determined by each department, subject to the approval of the faculty. The whole of the first half of the first year is devoted to anatomy and histology; the whole of the second half to physiology and physiologic and pathologic chemistry. The first half of the second year is given to pathology and bacteriology. The second half of the second year is devoted to elementary medicine and surgery, with lectures on hygiene and pharmacology, and is preliminary to and preparatory for the third year. Two hours a day of this half year are devoted to section work, in which the students are given instruction in physical diagnosis, examination of the blood, urine, gastric contents and so on, in small sections in the hospital clinics.

The third year is devoted largely to medicine and surgery. Pediatrics, neurology, dermatology, obstetrics, gynecology, orthopedics, syphilis, psychiatry, therapeutics, laryngology and otology are also taught more or less in detail. The first two hours of each morning are devoted to clinics and clinical lectures for the whole class, and the second two hours to section teaching. Lectures to the whole class occupy two or three hours of every afternoon.

The present third class consists of about seventy men and is divided into thirty sections of two or three men each. These sections are assigned to work in groups varying from two to ten. This work consists of bedside instruction in the wards or out-patient departments of the various hospitals. Enough instructors are provided so that, if every student is present, no instructor has more than six students; usually he has but three or four. The students in this way receive almost individual instruction. Each exercise lasts from one and one-half to two hours. The exercises are so arranged that, as a rule, every section is busy somewhere. The following extracts from the tabular views of the two terms show much better than any description the arrangement of the section teaching.

The fourth year, beginning with this autumn, is elective. The subjects are divided into courses. Each course equals 125 hours. The student must take 1,000 hours, or eight courses. This is equivalent to one course a month for eight months. Courses are given all day for one month, or half a day for two months. All day means from 9 to 1 and from 2 to 6 every day. Half a day means from 9 to 1 or from 2 to 6 every day. The student must decide on his courses for the year at the beginning of the year. The students are divided among the different months by a special committee of the faculty. Each department decides what the work is to be in its courses. A man may take more than one course in a given subject if he desires, but can not devote the whole year to one subject without the consent of the head of the department. The courses are not graded.

The courses advised by the committee for men who intend to enter general practice include: Medicine, 3 courses; obstetrics, 1 course; surgery, 1 course; pediatrics, 1 course; neurology, dermatology or gynecology, 1 course; otology, hygiene, bacteriology, histology, physiology, chemistry or neuropathology, 1 course.

The elective fourth year enables the student to take a general course of study or to devote a part or all of his time to the subject or subjects in which he is most interested. The future alone can tell how it will work out. In all probability most of the students will select their courses with a view to entering general practice, while only a few will turn at once to the study of a specialty. The personal popularity of the instructors can not fail, however, to influence the students to a certain extent in their choice of courses. On the whole, I think that men who have studied hard for three years after having been through college can be trusted to choose wisely and to make the best of their opportunities.

The department of pediatrics consists of a professor, an assistant professor of contagious diseases, an instructor, a clinical instructor and two assistants. The department practically controls the medical wards of the Children's and the Infants' hospitals, as the nomination of the visiting physicians to these hospitals is in the hands of Harvard University. The visiting physician nominates his subordinates. These hospitals afford a large amount of clinical material for instruction both in the wards and in the out-patient departments. About 700 medical cases are treated annually in the wards of the Children's Hospital and about 200 cases at the Infants' Hospital, while about 3,000 medical cases, making 6,000 visits, come to the out-patient department of the Children's Hospital and about 2,000 cases, making 7,000 visits, to that of the Infants' Hospital. The surgical sides of these hospitals can also be utilized, if desired. The Infants' Hospital wards are limited to babies under 2 years, and the great majority of the out-patient cases are infants, although children as old as 12 years are treated. Both infants and children are treated in both the wards and out-patient department of the Children's Hospital, but the vast majority, especially of the ward cases, are over 2. The present assistant professor of contagious diseases is resident physician at the contagious department of the Boston City Hospital. About 2,000 cases are treated there annually, mostly of diphtheria and scarlet fever, but some of measles and chickenpox. Smallpox patients are not admitted.

Instruction in pediatrics in the third year is given to the whole class by lectures, clinical lectures, recitations and case teaching, and to sections in the wards. Thirty lectures, 24 clinical lectures, 10 recitations and 10 exercises in case teaching are given. The first lectures are on diphtheria and the exanthemata, preparatory to the section teaching at the hospital for contagious diseases. The theory of infant feeding is then taken up and is followed by 5 practical illustrated lectures on the preparation of modified milk in all its forms. The next lectures are devoted to the diseases of the gastrointestinal tract, and are immediately followed by a series of clinical lectures on these diseases. The topics of the rest of the lectures vary from year to year, but the diseases of nutrition and those of the heart and lungs are almost always taken up. The lectures continue until the first of May. The clinical lectures start at the beginning of the year and continue until April. The recitations begin in February and are designed to cover the more important of the subjects not touched on in the lectures. The case teaching closes the year. In this form of teaching each student is given a typewritten copy of the history and physical examination of an actual case. He is supposed to study this case carefully with his textbooks before the exercise, when it is taken up and discussed in detail. The exercise is conducted chiefly by questions, the object being to make the students think for themselves as far as possible. Particular attention is devoted to the details of treatment.

Each section has seven or eight visits at the hospital for contagious diseases and from 20 to 22 at the Children's and Infants' hospitals. At the hospital for contagious diseases the students have the opportunity to become intimately acquainted with the exanthemata and diphtheria. Intubation is at present taught entirely on the cadaver, but it is hoped that in the new elective fourth year it will be possible to teach it on the living as well. At the other hospitals the students see a considerable number and variety of cases. In this section work the time is devoted to the examination and discussion of the cases by the students themselves under the supervision of the instructors, as little time as possible being given to didactic teaching.

In the new elective fourth year the department of pediatrics offers a course each month. A course occupies the whole of each day during the month and counts for 125 hours. A student may take more than one course in pediatrics, if he desires, but can not devote the whole year to it without the consent of the professor of pediatrics. The courses are not graded. The students electing pediatrics are divided among the months by a special committee. The department of pediatrics decides what the work shall be in each course.

The character of the teaching has not yet been entirely decided and must, of course, depend a good deal on the number of students electing the subject and the number to be taught in each month. The general plan, however, is to have the students assist in the work of the hospitals, both in the out-patient departments and in the wards, and to study special cases or groups of cases under the supervision and with the assistance of the instructors in the department. They will be required to do considerable reading in connection with their cases and, if possible, to undertake more or less original investigation. Those who elect but one course can not, of course, go very far in the subject, but those who elect several courses or who devote the whole year to pediatrics will have the opportunity not only of getting a good comprehensive grasp of it, but also of following up special lines of work and of carrying out original researches.

Special courses for graduates have been given in the past throughout the winter months. In the future graduates will be admitted to the fourth year elective courses and the character of this instruction modified as far as possible to suit their individual needs. Summer courses, open to both graduates and undergraduates, are given in each of the summer months. In August and September they are arranged to occupy the whole of every morning. The opportunities for graduate instruction in pediatrics in Boston have not been generally known or appreciated as they should have been in the past. It is hoped that more advantage will be taken of them in the future.

DECEMBER			28	29	30	1	2	3
			Mo.	Tu.	We.	Th.	Fr.	Sa.
SURGERY, Major		M. G. H.	16-20	16-20	16-20			
		B. C. H.	11-15	11-15	11-15			
MEDICINE	Major	M. G. H.	6-10		6-10	16-20		16-20
		B. C. H.		1-5			11-15	
	Minor	M. G. H.	27-30			27-30		27-30
		B. C. H.	21-24			21-24		21-24
		B. D.	25-26			25-26		25-26
		Ho. G. S.						
PEDIATRICS		Children's	1-5	26-30	21-25		16-20	11-15
		So. Dept.				1-3	6-10	1-5
		Infants'				4-6	28-30	7-9

A dash between numbers on both tables includes the corresponding sections.

APRIL		27	28	29	30	31	1
		Mo	Tu	We	Th.	Fr	Sa
SURGERY		17-18	17-18	17-18	17-18	17-18	17-18
MEDICINE	M. G. H.						9-16
	B. C. H.		9-16		9-16	9-16	
PEDIATRICS	Children's	9-13	1-5	9-10 13 15-16			
	Infants'						1-3
LARYNGOLOGY	D. D.		29-30		24-30		24-30
	B. C. H.						
OTOLOGY, E. & E. I.							
SYPHILIS, B. D.				1-8		1-8	
DERMATOLOGY, M. G. H.		1-8			1-8		
GYNAECOLOGY	B. D.						
	B. C. H.		19-20		19-20		19-20

I have described the teaching of pediatrics at the Harvard Medical School in so much detail for several reasons, one of which is that as I am more familiar with it than with that in other schools I can take advantage of both its merits and defects in discussing the best methods of teaching pediatrics in our schools. Another reason is that, owing to the untiring energy and incessant effort of Dr. T. M. Rotch, the present professor of pediatrics, the department of pediatrics at Harvard has for many years been accorded more nearly the consideration which the importance of the subject deserves than has been granted in other schools. On this account the department has had the opportunity to work out many problems in methods of teaching and by actual experience to arrive at a comparatively high grade of efficiency. The department of pediatrics at Harvard is a department by itself and not a part of or subordinate to any other department. Pediatrics can never be satisfactorily taught unless it is a separate department. If it is made a part of the department of obstetrics or of gynecology, as in some schools, it is certain to be neglected and to be improperly taught. It is too important a subject even to form a part of the department of internal medicine. When it is in that department, as it is in some schools which in other ways are most progressive, it is sure to be insufficiently and imperfectly taught, as it is in them. No man is competent to appreciate how much there is to be known about pediatrics and how little there is known about it, even by the best men in other lines, except the man who makes it a specialty. If the faculties of our medical schools did appreciate these facts there would be an independent department of pediatrics in every medical school. No one who does not make a specialty of pediatrics is, moreover, competent to teach it as it should be taught.

While the time allotted to pediatrics in the third year at Harvard is, of course, entirely inadequate in which to teach the students all that they ought to know about the subject, it is, I think, about all that its relative importance justifies. Pediatrics is recommended, moreover, as one of the fourth year electives for those students who intend to go into general practice and opportunity for further study is also provided in the fourth year. This division of the work between the third and fourth year is, I think, fairly satisfactory when the studies of the fourth year are elective. If the course of study for all four years is prescribed, I feel sure that the greater part of the teaching of pediatrics should be given in the fourth year, when the students have a better knowledge of internal medicine and of physical diagnosis. In the third year, at any rate at the beginning, they are hardly competent to make the most of pediatrics, especially in its clinical aspects. On this account I feel that in schools in which the fourth year is elective the greater part of the clinical teaching of pediatrics in the third year should be given in the second half of the year. The first half of the year could then be devoted to preparatory lectures and to instruction in the anatomy, development, physiology and pathology of infancy and childhood, providing those subjects had not been taken up earlier in the course. In Harvard, at least, the students are taught little or nothing about these subjects at these ages and are consequently not properly prepared to take up the study of pediatrics. I believe that instruction in these subjects should form a part of the regular courses in anatomy, physiology and pathology. If these departments are not prepared to give such instruction, it should then be given under the direction of the department of pediatrics at whatever time these subjects are taught.

It is very difficult to decide as to the relative proportions of the various forms of teaching which will give the best results. Personally, I believe that there is still room for a moderate amount of didactic teaching in the form of lectures and clinical lectures (amphitheater clinics for a whole class). The reading of textbooks can never take the place of lectures, if they are given as they should be given. The right sort of a lecture can paint a picture of disease, bring out the cardinal points and leave an impression on the mind which no textbook can possibly do. Lectures which are merely a monotonous recital of the author's or someone else's textbook are, however, worse than useless. There are also certain cases with gross lesions which are suitable for demonstration in the amphitheater and which, when shown in this way, save an immense amount of time for the study of the far larger class of cases which require closer observation and individual examination. Recitations are, I think, practically useless. The same result is attained, with the additional advantage that the students are made to think for themselves, by the "case teaching" already described. This form of instruction should, I think, replace recitations and possibly a part of the lectures. It is more valuable toward the end than at the beginning of the course. In any case, the bulk of the instruction should be given in the form of section teaching in the hospitals. This is the only way in which pediatrics, or any other medical subject for that matter, can be satisfactorily taught. There can not be too much of it. In this way alone can the student really learn to know diseases and their manifestations and properly prepare himself to treat them intelligently. The most serious obstacle to this form of teaching is the large number of instructors required and the expense entailed thereby. While this is an obstacle which it is at times difficult to overcome, it does not in any way, however, militate against the value of section teaching and consequently must be overcome, whatever the cost.

In conclusion, the teaching of pediatrics, as of other kindred subjects, will never be ideal until the instructors, or at least the heads of departments, devote their entire time and energy to their teaching. They should not be allowed to see private cases except in consultation and then only after they have given a definite amount of time to their teaching and hospital work. Men can not afford to do this, of course, unless they are paid higher salaries than at present. Living salaries can only be paid, however, when the chairs are endowed. We must look to our wealthy and public-spirited citizens to do this.

Remedy for Furuncles.—Dr. A. G. E. Naylor states in the *Australasian Medical Gazette* that he has found compound tincture of benzoin a specific for all kinds of boils. It is applied freely, around and over the boil, within twenty-four hours of its appearance or before suppuration commences.

THE SPECIALTIES IN RELATION TO THE GENERAL PRACTITIONER.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON LARYNGOLOGY AND OTOLOGY, AT THE FIFTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, PORTLAND, ORE., JULY 11-14, 1905.

ROBERT CUNNINGHAM MYLES, M.D.,
NEW YORK CITY.

It is my privilege to open the Section on Laryngology and Otology of the American Medical Association—a highly appreciated privilege which you have conferred on me by electing me your chairman, and for which I desire to thank you. It is not only a privilege, but an honor which I have done little to deserve, but I will endeavor to show my appreciation by presenting a few suggestions in the course of the customary chairman's address, which I trust will be accepted in the spirit in which they are given, not only by this section, but by the profession at large.

There never was a truer saying than that "the more we learn, the more we recognize how little we know." If this truism holds good in the general philosophy of life, it is applicable with even greater force to any subdivision of human knowledge, and not with the least degree of emphasis to general and special pathology.

No one can justly pretend that twenty years ago the leaders of the medical profession, the lights of learning, were lamentably deficient in a clear perception of philosophic principles; no one will accuse them of purposely and wilfully thwarting the progress and development of the science to which they had devoted their lives; no one will seriously deny that they have honestly and faithfully endeavored to act in accordance with their best judgment, conviction and enlightenment, to the best advantage of the noble art whose interests had been entrusted to their care. The same may also be truly said of the guardians of medical prerogative of all ages, but I select for purposes of illustration the period of twenty years ago, because it is a time of personal recollection, a time of which we can judge by personal knowledge of the conditions and circumstances under which medical lore was dispensed and practiced. With that knowledge of circumstances and conditions before our mind's eye, let me ask you what position did the medical world of twenty years ago occupy toward those branches of the art which this section has adopted as worthy objects of special cultivation, teaching, care and practice. It was a position of utter indifference, and it mattered not an iota whether or not the medical student of that day had absolved the short and elective course in our specialties—the only one available—in order to stamp him a full-fledged physician. It is no use arguing that the time for specialism was not so ripe then as it is now, because we know that since time immemorial the medical profession has recognized the desirability and necessity of allotting the treatment of special ailments to specialists; but the ear, the nose, and the upper air tract were treated like step-children, and it is only in the enlightened days of a more recent past that we condescended to raise them to the dignity of legitimate members of the pathologic family. There would be neither explanation nor excuse for the attitude of former cycles but for the truism which I cited as the introductory remark of my address, that the more we learn, the more we recognize how little we know.

As our knowledge of nose, ear and throat affections increased, as we found that local pathologic conditions were frequently responsible for constitutional ailments, and that the latter in turn might produce local manifestations, we delved more deeply into special research work. The advent of the laryngoscope, rhinoscope and otoscope enabled us to carry research work and special treatment to hitherto undreamed of perfection; we learned, learned more, and recognized how little we knew; and that was the signal for the evolution of the specialist in laryngology, rhinology and otology.

Has the course of events justified his creation?

Although we, as members of this section, unhesitatingly and decidedly answer this question in the affirmative, there are reflex considerations which we, as members of the medical profession, would do well to heed.

It is unquestionably true that when a man concentrates his best powers, energy and knowledge, all that is in him, on the study and practice of one particular subject, his work will in all probability excel in this particular the work of another man who studies and practices a dozen different subjects simultaneously. It should never be forgotten, however, that constitutional disturbances may produce local manifestations, and that, however expert an otologist, for instance, may be in the pathology of the ear, he would be a poor physician if he resorted to a local operation for the removal of a symptom which the more broadly trained general practitioner would trace to constitutional causes. In other words, general and special pathology must go hand in hand, a fact which, it seems to me, has not been sufficiently recognized or acted on.

As medical specialism in the course of recent years gradually assumed the well-defined shape in which we see it to-day, the general and special practitioner have drifted more and more apart. Ever since the specialist devoted himself to the exclusive cultivation of one particular field, in which he established himself as the supreme authority, the general practitioner—whether he liked it or not—took a back seat in the treatment of special diseases.

This is a perfectly intelligible and reasonable standpoint, so far as large cities are concerned, and also among those physicians who are so situated that they will spend the rest of their lives in a large city, because in large cities neither patients nor physicians will suffer from the arrangement, there being a sufficient number of general patients to keep the general practitioner alive, and a sufficient number of specialists to care for those cases that require special treatment. The question, however, assumes a totally different aspect in small towns or in country districts remote from large centers, where there are no specialists, and where the general practitioner is expected to evince his prowess in every case—from prescribing a powder for a child to performing Cesarean section; and considering that, after all, there are more small towns than big cities, the importance is apparent of including in the training and education of the medical student a fair sprinkling of specialties.

In the present advanced state of general and special medical knowledge it is of course absolutely out of the question to acquire a thorough knowledge of everything, as this would absorb the best part of a lifetime. All that is essential in the various specialties should unquestionably be included in the up-to-date training of students, and it is one of the tasks of the teachers of special subjects to select just that amount of necessary detail which can be usefully imparted to the students without appreciably adding to the burden of their mental exertions. Students should be made familiar with that borderland where general and special pathology stand on common ground, for after all the same principles of medicine and surgery underlie both. While, for example, they should not be encouraged to perform operations for the removal of adenoids with forceps on account of the delicate technic of manipulation, they can be instructed in the safe handling of the Gottstein curette, in tamponing the naso-pharynx, in using the rhinoscopic, laryngoscopic and head mirrors, the tongue depressor, the nasal speculum, in inspecting the interior of the nose and larynx, and, above all, in differentiating healthy from pathologic conditions. They should be trained to know when it is necessary to remove parts of the turbinates and when not.

The student of general pathology should be shown—not merely told—how hemorrhage after rhinologic operations can be quickly arrested by application of firm pressure, and his attention should be called to the importance of using such pressure without loss of time before considerable hemorrhage has had an opportunity to occur. The method of applying such pressure, or of inserting a posterior tampon skillfully and dexterously, should be practiced on the cadaver and not relegated to didactic lectures. Ocular demonstration in the autopsy room or in the laboratory in the special course of instruction in nose, ear and throat affections, is in many cases far superior to mere oral teaching, although didactic lectures, of course, should also form part of the special training.

One of the great advantages to be derived from the inclusion of details such as these in the general curriculum would be that the general practitioner, when confronted with ear, nose and throat troubles, will be able correctly to diagnose the case and to determine whether it is within his sphere of knowledge and ability to treat the patient himself or whether it is necessary to refer the case to a specialist.

Far be it from me to advocate the creation of what has facetiously been termed a "general specialist," nor is it my desire to see a medical student overcrowded with subjects for which he has no practical use, but necessity demands something akin to a general specialist in the country districts. This would be a mistake which Professor Huxley already characterized as a grave offense at a period when the medical curriculum was not so diversified as it is at the present day. However, I do think that we are permitted to reckon with the "unearned increment" in the learning capacity of each successive generation, which means that the student of today is able to assimilate more knowledge than did his forefathers, partly from the increasing superiority of fundamental knowledge, partly from the improved and more systematic methods of communicating scientific subjects; and, while I strongly advocate the cause of the specialist in laryngology, rhinology and otology, with equal earnestness, I demand that the general practitioner familiarize himself with such necessary and uncomplicated details of our specialties as I have enumerated.

There is another branch of the profession in which a more intimate acquaintance with the latter would be a useful and highly commendable achievement. I refer to the military surgeon and the general army and navy physicians, on whom the well-being of the rank and file of the army and navy depends.

It may be necessary, when respiration is impeded, to perform laryngotomy, an operation which, under modern enlightenment, every surgeon, and especially every military surgeon, should be able satisfactorily to perform. Even the division of the cricoid cartilage may be safely combined with the operation in order to enlarge the opening, when necessary. The surgeon should be familiar with all new devices which have stood the test of practice. Thus, instead of blindly groping for the bullet or other foreign invader of the trachea, if properly trained, he would illuminate the trachea on modern principles, and thus contribute to the accuracy, speed and safety of the operation. His special training should include a knowledge of the fact that it is easier and safer to open the trachea above than below the thyroid gland, as in the former case he is less likely to come into collision with the large blood vessels.

Similarly, the experience gained from Japanese surgical successes on, or rather off the battlefield, may well be taken to heart. The Japanese perform no operation whatever on the firing line, except in cases of extreme emergency when there is imminent danger to life from hemorrhage or from other causes. After taking all the necessary aseptic and antiseptic precautions, they leave all bullet wounds severely alone, remove the wounded to the rear and have the satisfaction of knowing that in the vast majority of cases the wounds heal by first intention, without causing any inflammatory or other pathologic conditions.

Not being connected with the military branch of the profession, I do not wish to encroach on the domain of others more qualified, by stating in detail how my suggestion for securing the services of specialists for the benefit of the rank and file could be best carried out, but there is one possibility of facilitating improvements in the desired direction, to which I would like to call attention. It seems to me perfectly feasible, in our large cities, to have military medical specialists, who could be called in whenever expert treatment at the hands of a specialist is of importance. I refer, for instance, to mastoid operations, in which the success depends entirely on the degree of competence and thoroughness of the surgeon, and in which the differentiation between the acute and chronic stages decides the method of operation.

The principles I have laid down in this address are not supposed to apply in a one-sided way to general practitioners only. They hold good, only in reversed application, for the training of the specialist as well. It is a mistake to assume that once a specialist has acquired a thorough knowledge of ear, nose and throat diseases, and their treatment, there is no need for him to trouble about any of the ills of other parts of the body. As I have already pointed out, the affections of special organs stand in close relation to the general functional activity of the body, and by narrowing his views, thoughts and opinions strictly to the details of his specialty, the specialist will promptly lose the all-important, comprehensive view of cause and effect in the mechanism of the human body. Again, the general condition of the body often determines whether or not a certain operation should be performed, whether local or general anesthesia should be applied, and, in the latter case, the anesthetic and the method of administration. For this and other reasons it is absolutely necessary that the specialist should keep in close touch with his professional brethren who have adopted the practice of general medicine and surgery. Both, the general and special practitioner, should realize that they are not contestants for opposing favors, but friends and comrades in the furtherance of a mutual cause, and, in the interest of suffering mankind, they should work together in harmony toward their common goal.

It requires no seer to foretell that a large amount of needless suffering would be prevented and a great many lives saved, if the suggestions I have thrown out were to meet with general approval and adoption. At the same time, in the present state of professional feeling, I see the possibility of difficulties obstructing our path, but those difficulties can and should be removed, as the interest of our patients is the primary and decisive factor, before which everything else—avarice, ambition, and imaginary ethical considerations—ought to fade into nothingness and vanish like a blinding fog before the rays of the sun. The feeling of fraternity between country physician and city specialist is by no means too hearty, but all good and true men, who have the real interest of our profession at heart, should unite in this movement, and, working hand in hand, further their own interests and raise the ethical level of the profession to a higher and nobler plane.

Means should be found for the whole medical brotherhood to be in closer touch, and a bond of union should be established which will make us all feel akin, whether we are country or city physicians, specialists or general practitioners. On these lines the medical organization of this country should be overhauled. Every member of the profession ought to be imbued with the all-pervading idea that he has not got hold of one exclusive thing, but that he dispenses his knowledge and ability in the services of mankind just like any other of his professional brethren. Broad and liberal views and principles should underlie our every thought and action, and if the arguments I have advanced should pave ever so slightly the way for diffusing the salient features of special training among the vast body of general practitioners, and for inducing the specialist unselfishly to reciprocate the latter's attempt at increasing their usefulness, it will mark the dawn of a perfected, idealized, medical organization, and I shall have the satisfaction of knowing that I have contributed my share toward discharging my obligations as chairman of this special section.

Original Articles

A COMMON GROUND FOR MEDICINE AND DENTISTRY.*

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The recognition of dentistry as a specialty of medicine by the American Medical Association and the International Medical Congresses, marks one of the happiest epochs in the history of both professions, for it has opened the way for a mutual understanding of conditions and study of theories beneficial to both, and destined to promote in no small degree the health and happiness of the human race.

The goal of both professions is practically identical, embracing as it does, all honorable means for the relief of suffering and for the cure and prevention of disease.

Within comparatively few years, the medical profession has made giant strides in preventing epidemics of plague, cholera, yellow fever and malaria, and is to-day waging a relentless war, and one which will ultimately be successful, against the greatest of all scourges, tuberculosis.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

Dentistry is no unworthy member of the great medical family, and many of its best and brightest minds are striving with unremitting toil to find means for the prevention of dental disease, and as their efforts are crowned with one success after another they will have but moved further along the common highway traveled by all the healing arts.

The fact that medical science in its various branches is putting forth its latest, and perhaps its greatest, efforts in the direction of the prevention of disease is the very best evidence of the progress and utility of this branch of applied science.

That such effort is demanded and intelligently received by the public furnishes encouragement for renewed effort, and demonstrates the fact that humanity is gradually coming to believe that the prevention of disease is even a greater and more valuable scientific triumph than its alleviation and cure. Admission of the importance and truth of this growing belief leads at once to the consideration of the subject of this paper.

It is an unfortunate fact that the course of instruction in medical colleges, except in a few instances, does not embrace a fairly comprehensive study of dental pathology and hygiene, for they have a direct bearing on other systemic conditions and play a most important part in the health and development of the individual. It would be well also if more particular attention were paid to the diseases of the eye and ear, and the gastric and intestinal disturbances of infancy and later life, as related to diseased conditions of the teeth and oral cavity, in our dental colleges.

The possession of a more general knowledge of these subjects by the practitioners of medicine and dentistry, combined with a greater sense of the obligation of trained minds to impart some of their learning to those dependent on them and less well trained, would accomplish much toward combating disease and bettering the general condition of the human race.

Considering the fact that human beings have inhabited the earth for perhaps fifty thousand years or more, and also that they have been suffering from various conditions of dental disease ever since Adam cut his teeth, it is astonishing how little general knowledge prevails regarding these organs, so essential to the health, development and appearance of mankind. Scarcely one mother in a hundred knows how many teeth there should be in the temporary set, and still fewer know when they should erupt or when they should be lost; and few, few indeed, are the parents who know that the temporary teeth play perhaps a greater part in the development of body and mind than the permanent teeth, and should receive from the day the first one appears, the most painstaking care tending to their preservation.

That expression so common in dental offices, "Why, doctor, that's only a baby tooth, you don't think that ought to be filled?" should be eliminated from the vocabulary of every parent, and there should be heard in its stead, "Doctor, I want my baby's teeth taken care of, every one of them, just as long as he needs them."

How few people we know who have reached maturity without the loss of one or more teeth. It was "only one tooth" neglected until it ached, and then it was extracted. Only one tooth, but its loss eventually disturbed the arrangement and utility of half a set of teeth. This leads to half mastication and half digestion, and whole indigestion.

Parents of all classes, from the dirty and ignorant to the refined and educated, bring their babies two, three or four years of age to the dentist, with their teeth even at these early ages, in all stages of disease. Some have only a few simple cavities, others have scarcely a sound tooth left; with exposed pulps, putrescent pulps, and even a few alveolar abscesses, discharging perhaps a spoonful of pus a day into the oral cavity.

The mother wonders why the baby does not grow, why he does not digest his food, why he does not sleep nights. The wonder of it is that the baby lives at all, and many of them do not live very long, and the cause of death may be traced right back to the septic condition of the oral cavity, back to the mother's ignorance, back to the fact that no one ever told her to care for her baby's teeth, not even the family physician who was present when the child was born, who attended him when ill during the period of dentition, and who should have known, and who should have seen that the mother knew how to keep the little mouth and teeth clean, and should have taught the importance and necessity for doing so. It is undoubtedly a fact, that many of the diseases of childhood, other than those considered incident to dentition, have their origin in diseased conditions of the oral cavity; including of course, dental caries; and it is no less true that throughout life many neurotic and gastric disturbances may be traced directly to the ignorance and neglect of the sufferer in regard to the care and preservation of his teeth. People, as a rule, do not first demand dental services except for the immediate relief of pain; a few, it is true, have learned by previous sad experience that it is well to consult a dentist once or twice a year to have their teeth examined and treated if necessary; and these few, although they do not know it, have reached an unusually high degree of human intelligence. They are well along on the highway of knowledge leading to that remote but beautiful goal when people will understand that it is wiser to employ physicians to keep them well than to cure them when ill. Since we as professional men know these facts, realize their importance and see every day the sad results of ignorance and neglect, since we know that without good digestion there cannot be good assimilation, and without both, good health and good development, since we know that good digestion depends very largely on a proper supply of good, clean food, passed into the alimentary canal through an oral cavity free from septic conditions and provided with the proper organs for its mastication and insalivation, is it not a duty we owe to ourselves and to humanity to impart this knowledge to those who so sadly need it?

This is the duty first of the physician, for his relations with the family are necessarily more intimate and begin at an earlier period than those of the dentist, and second, of the dentist, for by timely advice he may often prevent a repetition of the trouble in regard to which he has been consulted.

It is on this common ground, the instruction of the public in regard to the value, care and preservation of the teeth, and the prevention of disease, that the professions of medicine and dentistry may join hands and work together for the good of humanity and the honor of themselves.

THE PHYSICIAN AS A DENTIST.*

CALVIN WILLIAM KNOWLES, M.D., DD.S.
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The physician has practiced his dental specialty for many years previous to the establishment of a dental college, which took place in about the year 1839. When conditions pertaining to the medical side of dentistry arose, in years gone by, it was customary for these cases to be referred to the medical specialist or general practitioner.

Dental colleges being organized and a more thorough medical knowledge being required, it was not so necessary for the opinion of a medical man in cases which involved the medical side of dentistry.

Dentistry is regarded by some as an art or science, rather than a specialty in medicine, for the average dentist is not a physician, has received no medical education whatever, and practically knows nothing about general medicine, or else has a very superficial knowledge of it. It will be useless for me to discuss or to dwell on this point, as it has been referred to and rehashed for a number of years, without really coming to any definite conclusion in the matter.

Dentistry as practiced by some men is a specialty in medicine. Dentistry ought to be on the same footing as medicine, that is to say—educational requirements, a four years' course and an M.D. Not until these are required, will a dentist be recognized on the same footing as a physician.

Physicians as a rule regard dentists as mere mechanics, or men who have received a smattering of medical education. Do you wonder why we are so looked on!

I am sure it was a great mistake when dentistry branched out for itself, and I am afraid the day is far distant when we are going to shake hands with our brother medicos and be licensed by a medical board, although I hope the day will soon come.

You ask the question: Why should a dentist be a physician? First, because he would have an accurate knowledge of medical science, and would be able to cope with many diseases, and recognize many conditions which he was ignorant of before. Second, when he sees his patient he will recognize his condition, note the condition of the heart, pulse, etc., or whether a contagious disease be present. Third, the benefits from the training he derives and the advantage his knowledge is to his patients.

The advantages of the physician-dentist, as I may term him, are as follows: Being an M.D., he is on a rank with all medical men, providing he is a graduate of a regular recognized medical college, and a licentiate of the state in which he practices.

The prestige which goes with the degree is of value not only in the medical profession but also in the dental. One's knowledge being superior, one's work and one's fees will be superior. People will willingly pay more for the services of one in whom they place much more confidence.

Are not these sufficient reasons for a broader medical education? I am sure that if dentists had the opportunity and could spare the time they would most certainly take a medical degree.

The word stomatologist takes the place of the word dentist in being a newer and more up-to-date one, the use of which has become quite common in the larger cities. By the word stomatologist, we understand one treating diseases of the mouth, and especially the teeth. It perhaps sounds a little more medical than the word dentist, and would fit the physician-dentist a little better than the ordinary word dentist.

In ancient medicine the physician practiced the dental specialty. In an old manuscript consisting of over 100 pages a most interesting account of the anatomy, physiology, medicine, materia medica and therapeutics is given. The following are examples of some of the aphorisms given in the manuscript:

> There are three bones in a man's body, which when fractured will never unite again, and neither of these exists when a man is born, namely, a tooth, the knee pan and the os frontis.
>
> To extract a tooth without pain. Take some newts, by some called lizards, and those nasty beetles which are found on ferns in the summer time. Calcine them in an iron pot, and make a powder thereof. Wet the forefinger of the right hand, and insert it in the powder, and apply it frequently to the tooth, refraining from spitting it off, when the tooth will fall away without pain, it is proven.

Bleeding and local applications, such as poultices and counter irritants, are frequently alluded to. The exact date of the manuscript is not known, but it was probably written about the end of the fifteenth century. So you see the early physician practiced this specialty also.

Dentistry is one of the oldest professions dating from the time when people were placed in front of the temples in order that they might gain relief. All down through the different ages literature has been contributed by the different observers.

Dental surgery has always been associated with education and scholarly men, and not with mere mechanics or tonsorial artists.

Our literature of the present century is elegantly written and illustrated with beautiful pictures, giving in detail the different oral deformities, and the modes of treatment by surgical or mechanical means. In our own United States there seems to have been in the last fifty years a very rapid growth and high degree of development in dental science, as compared with other countries. The percentage of qualified persons practicing dentistry is fully as large as those in other similar callings of life. It is stated that after five years only about 20 per cent. remain in practice, and that the qualified and successful are only about 5 per cent.

Dentistry as a science and art is a noble calling and is worthy of the best efforts and of the finest minds.

THE PHYSICIAN'S DUTY TO THE CHILD FROM A DENTAL STANDPOINT.*

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BOSTON.

The possibilities for usefulness of the dental profession suggested to our mental horizon make us sigh and wonder if the time will ever come when the laity may receive the proper instruction regarding the real value of the organs of mastication.

Comparatively few understand and appreciate all that the faithful dentist may be able to accomplish.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

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But too many either wholly neglect this important subject or, perhaps worse, make the best bargain counter contract possible with the man who guarantees "satisfaction or no money back" until the skillful esthetic dentist cries out, "hideous, all is hideous," "cleanliness next to Godliness" will not be in that mouth.

To whom shall we turn in this hour of doubt? To the vast army of educators, ministers, physicians, teachers of schools, and all public institutions.

But the public educator will tell us that the child must learn to keep his mouth clean at home. Then how are we to use all influence possible to reach that home, while the school officials are becoming educated to this crying need of the age? Many ways suggest themselves, but our nearest relative in the field is the family physician. He it is who welcomes the little stranger into the world, advises the mother on many subjects, and tells the father that such a boy will become a sturdy man. Let us ask our medical brother not to forget those protruding and receding jaws, or that those temporary teeth ought to do duty for a definite period, and that in order that they may accomplish this they should be cared for from the time that they appear as small white pearls above the pinkest of gums (let us hope that the gums are as pink as they should be) and that the loss of one single tooth means quite as much to the superstructure of that face as a sill from the side of a house. More than this, the teacher must present a clean, wholesome mouth else his instruction will be without effect. It is example as well as precept that tells.

We would also urge in their contact with other educators not to lose sight of the fact that the care of the mouth ought to be included with the hygiene of the body.

The many medical specialists owe a duty to the race. A case of gastritis treated without first cleansing the mouth and its contents, certainly not! The laryngologist in operating for adenoids must realize that often sufficient bacteria may be found in a single tooth cavity to infect a whole regiment of soldiers, providing an open wound is convenient as a culture medium.

Our friend the orthopedic surgeon has opportunities for good which are unexcelled; what an array of faces for beautifying! How much real good could be done! When, O when will all crooked faces become straight?

It would seem as if the physician in many instances needed more than a gentle reminder, for I find in looking over literature on diseases of children that the reference to teeth consists chiefly of the physiology of development and dentition, while the neglect of cleanliness and deformity caused by too early extraction is condemned in one instance only, and the very important item of correcting deformities from causes either traumatic or congenital is overlooked entirely.

Oppenheim speaks of the unsatisfactory information to be found in medical text books, but does not improve matters much. He emphasizes, however, the fact that it is unsatisfactory. Koplik points out the effect of malnutrition, syphilis and nervous irritation.

Doukin describes the pathologic conditions commonly supposed to be due to dentition. Rotch refers to development and dentition. Holt goes into the physiology and pathology from malnutrition. Jacobi speaks of the pathology of dentition and cautions against too early extraction, and Starr refers to development and dentition.

355 Boylston Street.

THE MEDICAL RELATIONS OF CERTAIN CONDITIONS OF THE MOUTH.*

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Although not specially occupied with disease of the mouth, I have such frequent occasion to inspect the buccal cavity in connection with dermatologic practice, that I have become very much interested in the subject. It also happens that many cases of disease of the tongue, gums, and buccal mucous membrane are sent to me, and many occur in my own practice.

The mouth occupies a very prominent place in the economy, as the point of entrance of food, and I need not, in this audience, dwell on the importance of having it, and all within it, in a proper condition. Few, among the laity at least, recognize fully the essential part which is played by the mouth and its appendages in the process of digestion, and consequently in the life and health of the individual. Mastication and proper insalivation are the first steps in digestion, and undoubtedly much ill health often results from the improper manner in which these are performed. I am convinced, from long observation, that hurried eating, imperfect mastication, soft food, and the taking of fluid while eatables are in the mouth, are fertile sources of trouble. This is a matter concerning which physicians and dentists should educate their patients. In this connection, of course, dentists render incalculable service, in placing the teeth, whether natural or artificial, in a condition suitable for their important work. As an illustration from the animal world, I may refer to the sometimes marvelous effects in poorly nourished horses, resulting from filing down the back teeth, as I have repeatedly observed in my own animals.

Incidentally, I would like also to mention the very great advantage of thorough mastication in sea-sickness. When other food will not remain in the stomach, one can often retain crackers or dry toast, thoroughly chewed and moistened only by the saliva, and it is a constant direction of mine to sea-going patients that these be so eaten while in bed; the mouth, though dry and parched, will in time moisten this food, and when thus thoroughly chewed the stomach seldom rejects it.

In considering the mouth, I have often been struck by the remarkable vitality of its tissues, which I think we hardly realize. Many times a day they may be subjected to repeated irritation from various foreign substances, or to mechanical damage, and yet how seldom are they permanently injured! The powers of healing of the buccal cavity sometimes seem to put all theories of surgical asepsis to naught. Bacteriologists tell us that a dozen or two different micro-organisms can always be found in the healthy mouth, and yet, somehow, none of them seem to exert a harmful influence in regard to the repair of injuries, even when pus, and presumably its coccus, is present. Witness the prompt healing after the extraction of a tooth, or even after the most serious surgical operation; and how rapidly a burn from hot food or drink, or from smoking, is healed. Surely nature has made wonderful provision to guard the portal through which the sustenance of the individual must pass, for many years.

The explanation for this is found, in part, in the character of the saliva, as it is proper to designate the combined secretion of the various glands opening into the buccal cavity, including those of the mucous membrane itself; of all of which we know far too little. Like all other animal secretions, the saliva undoubtedly varies materially under different circumstances. We all know well the excessive and watery secretion, induced by pilocarpin and occurring in mercurial salivation, and the diminished secretion caused by atropin. Nervous causes may also at one time produce a free flow of saliva and at another may almost arrest the secretion, and leave the mouth dry and parched, as may also febrile diseases. The effects of food are also well known and the expression "making the mouth water," is often used in regard to certain appetizing articles.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

How far or in what manner chronic disordered states of the system affect the saliva is not known with any degree of certainty, but that they do have some effect is beyond doubt; anyone who has had much to do with patients suffering from many minor or gross ailments, will testify to the constant mention made of the condition of the mouth. The saliva is often spoken of as thick, viscid, sticky, or pasty, and the taste as sweet, sour, bitter, or offensive, while the expression "a dark brown taste in the mouth" is very common in New York, at least.

Last year, Drs. Stern and Lederer[1] presented before this Section the results of some observations and studies on changes in the salivary secretion affected by systemic disease, which while perhaps not so accurate and complete as could be desired, are certainly a step in the right direction. Thus, in diabetes they found the saliva to be acid, in about one-third of the cases, and detected glucose in over one-half of them. In uricacidemia, the saliva was alkaline in nearly nine-tenths of the specimens, and uric acid was demonstrated in nearly one-third of them. In acute gastritis, the saliva was acid in 8 cases and alkaline in 20; in hyperchlorhydria the saliva was acid in nearly 40 per cent of the cases, alkaline in about 22 per cent., and amphoteric in over 35 per cent., and in hypochlorhydria the saliva was acid in 2 cases, alkaline in 15, and amphoteric in 6 cases. The acidity was found to be due to lactic acid, or to acetic acid.

While these studies do not by any means cover the whole ground, or even a very small part of it, they are, as just remarked, a step in the right direction, and should serve as a stimulus to others to corroborate or to add to them. Unfortunately, I cannot contribute any exact data in this direction. I have occasionally tested the secretions from the mouth in patients exhibiting marked acidity of the system, and have found them acid, sometimes neutral, or alkaline, but I have not kept records which can be utilized, so that I can speak only in a general way, hoping sincerely that those who have more time, or determination, will investigate the matter and give us scientific data to build on.

As already stated, the saliva undoubtedly varies in quantity and quality under different circumstances, and physiologists tell us that the total daily average secretion, in health, is from two to three pints. The solid ingredients vary according to different analyses, from 3.5 to 11.7 parts per thousand, and the salts from 1.03 to 2.2 parts per thousand. It is interesting to note, that while an analysis of the ash from saliva showed nearly 50 per cent. to be potash and nearly 10 per cent. soda, with a number of other ingredients, but no calcium, an analysis of the so-called tartar on the teeth showed that "the chief part of the inorganic constituents consists of calcium carbonate and phosphate," with some 20 per cent. of organic matter.[2]

All of us realize that different changes take place in the mouth at different times, but, so far as I know, no clear or definite knowledge exists as to the conditions causing them. Time and again decay in the teeth starts up suddenly, or the teeth are found unusually soft or eroded or tartar collects very rapidly, or a pyorrhea alveolaris occurs, etc., and no adequate cause can be determined with certainty. It is easy to ascribe these and other conditions to the action of micro-organisms, which undoubtedly have their share in the work, but we must remember that the buccal cavity is continually full of innumerable varieties of these, and more modern sciences, in various directions, teaching that microbes can not develop and become operative except in a suitable soil.

We must look, therefore, to the constitutional condition of the individual, as modifying the saliva, or soil in which the micro-organisms are bathed, and which in perfect health seems to possess such a marvellous power of protecting all within the buccal cavity from the inroads of bacterial life; even as the phagocytes in the blood guard the general system.

It is, of course, a common observation that debility or exhaustion of any kind often leaves its imprint on the structures within the mouth, as elsewhere. The less vital resistance there is in the tissues, the more readily do they yield to microbic invasion.

Dyspepsia is undoubtedly a fertile source of trouble in the mouth, as is constantly observed in the case of so-called "canker sores," and decay of the teeth may continually be found to vary with the condition of the stomach. In the studies referred to by Stern and Lederer,[1] in acidity of the stomach the saliva was found to be acid in nearly 40 per cent. of the cases.

The acid condition of the system associated with gout, rheumatism, and rheumatoid arthritis also has an effect on the teeth and gums, as I have witnessed time and again, in many cases of pyorrhea alveolaris, some of which I have watched for considerable periods of time. The disease has varied immensely at different times, according to the acidity of the system, often as indicated by the urine, and in many cases I have seen the very greatest benefit result to the condition of the teeth and sockets from a purely antacid treatment. We all recognize the value of alkalies locally in the mouth, and the injury from acids.

In the light of what has been said, should not the dentist, who is primarily responsible for the mouth, seek the aid of the physician in connection with many of the conditions about which he is consulted? Even as the physician recognizes the need of special skill in dental matters, and advises patients to seek it.

The subject of diseases of the mouth is a very large one, and can hardly be touched on now, but it is such an important matter, and dentists so often have the opportunity of seeing these affections early, when much can be done by proper treatment, that a few words may be of service.

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[1] Stern and Lederer: The Journal A. M. A., Dec. 10, 1904, p. 1765.

[2] Hammersten: Text-book of Physiological Chemistry, New York, 1898, p. 281.

Syphilis is, of course, the most frequent cause of lesions within the buccal cavity, for few patients with this disease escape, at one time or another, from having some affection of the mucous membranes occasioned thereby: For many reasons, therefore, it is very important that dentists should appreciate and be able to recognize the effects of the disease in this location. This, of itself, is a very large subject, on which I have twice addressed the dental profession,[3] and which cannot be fully considered now. I must earnestly utter the warning, however, that dentists should be extremely cautious, whenever there are sores, even though they be very superficial, on the lips, tongue, or buccal mucous membrane, and that if not quite certain as to their character, they should seek competent advice before exposing themselves or their other patients to the dangers of syphilitic inoculation. As I showed in the first paper alluded to, there are many instances on record where this has occurred, and, of course, multitudes which have never been reported in the journals.

Aside from canker sores, from disordered digestion, leukoplakia is probably the next most frequent condition of disease found in the mouth, chiefly in men, and principally in those who use tobacco. This is commonly a harmless affair, though it may be the starting of an epithelioma, especially if it has been injudiciously treated. It will sometimes give trouble by mildly unpleasant sensations, and often perplexes the physician from its resemblance to some of the lesions of syphilis. Many a patient has long been under antisyphilitic treatment uselessly because of the persistence of this relatively innocent local affection, leukoplakia, which has no connection whatever with syphilis.

Epithelioma is the most important disease of the region of the mouth, and elsewhere, and it is in connection with this often lamentable affection that dentists can frequently be of the most efficient service, in many ways.

In a considerable number of cases of epithelioma of the tongue, and sometimes in that of the inside of the cheeks, the disease has started and is often kept up by irritation from sharp, rough, and decayed teeth, and from amalgum fillings, and these should all be sedulously looked to and corrected. Also, when there is any process suspected to be epitheliomatous, the patient should be urged to seek competent medical advice; for we know that while this disease begins as a purely local process, by neglect or by continued irritation it becomes deeply seated, the glands become infected, and often it is well nigh incurable. Happily, the former custom of touching all such sores with nitrate of silver or some other caustic is no longer largely practiced, but I must again raise my voice earnestly against all such meddlesome practice; for in times past I have seen many epitheliomata which had been thus goaded on until their condition was very serious.

Lupus also sometimes affects the gums and palate, but this is a disease which is so very rare in this country that it is hardly to be considered. It commonly exists elsewhere, especially on the face, before attacking internal tissues.

Localized tuberculosis, however, is not so very infrequent in or about the cavity of the mouth, and it is not infrequently mistaken for a syphilitic manifestation. Patients should be warned against neglecting this.

There is one more aspect of the medical relations of certain conditions of the mouth which I would like to mention before closing, that is the effect on the general system, or on special portions of it, in a reflex manner or otherwise, from error or disease in the teeth or jaws.

We all recognize the harm done to digestion by bad or imperfect teeth and have seen the great benefit to the general health resulting from a proper repair and adjustment of the organs of mastication, so that this process can be perfectly performed. Numberless instances are on record, and we must all have seen cases, where some error in the teeth and jaws has caused reflex disorder, headache, neuralgia, etc., which have ceased when the trouble has been rectified. Hence, the physician has frequent need of the dentist, and should ever bear in mind the assistance which can be obtained in this direction, in obstinate cases.

Finally, purulent discharges in the mouth, as from abscesses or from pyorrhea alveolaris, etc., passing into the stomach, have a more or less disturbing influence on digestion and nutrition, and should be corrected for this reason, if for no other. The same is undoubtedly true in regard to the results of decomposition of food lodged between the teeth, and from mouths not perfectly cleansed, one or more times daily. We all know the dreadful condition into which the mouth sometimes gets in acute or febrile diseases, with sordes on the teeth, and it is a question if some of the unpleasant general symptoms occurring in these cases are not caused by the gastric or intestinal fermentation thus set up. It seems certain that some of the discomfort to the patient, and possibly even some serious complications could be avoided if more attention were paid to antisepsis in the mouth at these times, when it is notoriously neglected.

I have jotted down a few of the many thoughts which have come to me, from experience, in the hope that a discussion of some of the points suggested may result in a more careful and complete consideration of the medical relations of certain conditions of the mouth.

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DISCUSSION.

ON PAPERS BY DRS. PLATT, KNOWLES, STEEVES AND BULKLEY.

Dr. Vida A. Latham, Chicago, said that her experience in the last few years has been that the conditions of the mouth and teeth are based almost entirely on systemic conditions. One of the great objects of the work of this section is to try to show a relationship between the system and the teeth and adjoining structures. To her mind, syphilis has much to do with the condition of the mouth. She said that she has seen cases in her practice in which syphilis had been contracted, and in which the teeth before infection had been in splendid condition, and afterward discoloration, decay, erosion and abrasion have been marked, with interstitial gingivitis resulting in pyorrhea alveolaris and wasting of the alveolar processes. Dr. Latham said that saliva is a physiologic secretion, and it will remain for a specialist to work out the relationship between pathologic conditions of the saliva and constitutional diseases. In the last two years Dr. Latham has had two cases of gonorrheal infection of the mouth—the only two that she has ever seen. They were demonstrated by microscopic examination, and it was proved conclusively that they were due to infection from the fingers—uncleanliness—rather than from systemic cause. These cases were unusually peculiar. There was marked inflammation with much pain, the teeth became loose, there was a greenish, slimy condition of the gums, and there was slight fever.

Dr. M. I. Schamberg, Philadelphia, said that during the past year he had seen just such cases as Dr. Bulkley had mentioned. He saw one case of lupus, several cases of carcinoma of the mouth, and in one case the main interest lay in the early diagnosis. The dentist who referred the case to Dr. Schamberg did so because he was rather doubtful as to the condition. Microscopic examination of the growth, which was very slight at the time, showed it to be an epithelioma. It was treated by the *x*-ray, and an absolute cure took place. Several cases of syphilis of the mouth in various stages have come under Dr. Schamberg's care during the past year. The last case was an initial lesion immediately posterior to the superior central incisors. The case had gone on with a wrong diagnosis for three weeks, both the physician and the dentist failing to discover the cause of the lesion, and the condition was pretty bad. Dr. Schamberg questioned the patient as to possible inoculation, and also as to whether there was any eruption on his body; until he examined the body himself no thought of secondary eruption had been suggested, but he found a very pale, macular syphilid on the abdomen, which decided the case. The mouth lesion had been masked by the application of caustics and other forms of treatment. Such cases show the necessity for thorough insight into medicine generally, and also that the general practitioner is too frequently derelict so far as studies of the mouth are concerned.

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[3] Bulkley: Dangers Arising from Syphilis in the Practice of Dentistry, Internal. Dental Jour., August and September, 1890. Manifestations of Syphilis in the Mouth, Trans. New York Odontol. Soc., 1898, p. 11.

Dr. G. V. I. Brown, Milwaukee, said that the value of the dentist's work lies in being able to diagnose cases early. He referred to Dr. Bulkley's statement that the most frequent cause of lesions within the mouth is syphilis, and said that it is a difficult matter for those who deal with the lesions and do not treat syphilis in any sense except when forced to do so to decide whether or not the lesion is syphilitic. He is inclined to believe that syphilis as an etiologic factor *per se* is greatly over estimated. In some papers Dr. Brown thinks that too much emphasis has been laid on it. There are many cases in which a diagnosis of syphilis has not been made, and in which the one thing the patient needs is the proper treatment for syphilis, without which, of course, other measures would not only be useless, but would probably result in serious injury to the patient. On the other hand, Dr. Brown said that frequently time is wasted in endeavoring to overcome systemic conditions which do not exist, when simple, direct, prompt, surgical treatment is required.

Dr. M. L. Rhein, New York City, stated that he had occasion last year to take exception to the name of saliva as applied as being misleading. There are in the mouth the submaxillary glands, the sublingual glands and the parotid glands. It is true they are the salivary glands of the mouth, and that they give forth a large percentage of the fluid that circulates in the mouth, but added to these there are all the eliminative secretions of the mucous follicles, which add materially to this fluid. Up to the present, this portion of the fluid has had no recognition given to it as having any of the function that pertains to salivary glands, and it is for this reason, Dr. Rhein said, that exception should be taken to the use of that term. He declared that he knows that a great many workers take exception to this criticism, and prefer to use the word "saliva" as it has been used in the past. Dr. Rhein agreed with Dr. Bulkley in his explanation of some of the lesions of the mouth and said that the great trouble is that the majority of physicians have no knowledge regarding the normal physiologic condition of the mouth, and consequently when they examine an abnormal mouth they are at sea in regard to making a proper diagnosis either of what may be wrong, or as to whether it is even abnormal as distinguished from physiologic. He said that he has had most startling experiences of this kind, and finds that the medical text-books on this subject are almost of no value. In most instances, the conceit of the average medical teacher carries him past this important specialty. To illustrate the average medical man's idea of the mouth, Dr. Rhein told of a patient who presented himself last fall with lesions in his mouth that Dr. Rhein had no hesitancy in diagnosing as marked leukoplakia, and of such a nature that he thought there was strong suspicion of syphilitic etiology. He found that the physician under whose care the patient had been for a number of years had overlooked important facts; he seemed to have paid no attention to the patient's history of losing his hair about five years previously and to other symptoms. On the physician being requested to look into the mouth symptoms, he informed Dr. Rhein by telephone that it was simply an inflammatory condition, and that in a few weeks the patient would be perfectly well. Six weeks later the patient had not only not been cured, but the symptoms had increased in severity; there was an active pathologic condition present that was so apparent that Dr. Rhein refused to have any further connection with the case unless some attention was promptly given to the general condition, and when he again called the physician's attention to the patient he finally took him to another practitioner who at once confirmed the diagnosis of leukoplakia of syphilitic origin. The patient was placed on antisyphilitic treatment and the symptoms were decidedly ameliorated. Dr. Rhein believes that a large proportion of cases have a decided cause of this nature. The trained stomatologist has opportunities for the minute and careful observation of what he sees in the mouth that so educates his sense of perception between the various conditions that it places him in a peculiarly fortunate position as regards diagnoses. He believes that there is no gainsaying the fact that has made the value of the dental services to the public at large in this country of inestimable value as compared with what they have received in other parts of the world, and that is the absolute thoroughness of the work. Dr. Rhein said that there is no reason why the highest scientific utilization of research work of all that we can gain in medicine should not be put to advantage in what is apt to be described at times, and that is the handiwork of the dentist, and he protested against taking one iota of credit from the value of that handicraft.

Dr. Duncan Bulkley, referring to stomatology vs. dentistry, said that physicians do not have to do with the teeth entirely, but with a thousand other things as well. Stomatology, he said, is of very great advantage, and if that can be introduced everywhere I think it will be a step in advance. He agreed with Dr. Brown that one thing must not be praised to the disparagement of another. American dentistry is recognized all over the world. There are many cases of pyorrhea alveolaris which it would unquestionably be folly to send to a physician. In those cases which have been under his care he has used peroxid of hydrogen freely. Undoubtedly, the first item is proper surgical treatment and perfect dental cleanliness. On the other hand, he asked why a patient has this condition; it is not from the parasites in the mouth. In reference to the saliva, he said that nine-tenths of it is made from the three groups of glands, but the mucus must, of course, be counted. He did not agree with Dr. Rhein as to using the word "eliminative." There is no reason, he said, to believe that these glands of the mouth have any eliminative function; it is simply a moistening process. He called attention to the fact that some of the best dentists are studying and have studied medicine since they began practicing, and are now graduates in medicine. All branches of medicine should be co-ordinate.

Dr. Bulkley said that he still holds that almost everybody who has had syphilis, at some time or other, has had mucous patches; he has had some patients who have been infected from soiled instruments. He has seen chancre in almost every part of the mouth and tongue. He also stated that he has seen many cases of wasting of alveoli. In time gone by it was supposed that mercury did this, and it created a great furore against mercury. He asked how many physicians have reason to believe from their experience that mercury does salivate. Dr. Bulkley has not yet found cases in any number in which he thought the mercury was responsible. He has had cases with syphilitic alveolar trouble. He said that he does not know anything about the saliva in syphilis—whether or not it is modified, though he is sure that it is altered in syphilis. The saliva is not an excretion; it is a secretion, and that secretion can be altered by disease. He has never happened to come across any cases of gonorrhea of the mouth. He distinguishes between leukoplakia and syphilis. Legally, one does not speak of syphilitic leukoplakia any more than of syphilitic psoriasis. Leukoplakia is one thing and mucous patches of various degrees are another. There is a great deal of leukoplakia sometimes from smoking and from unknown causes, which he is sure is not syphilis. The diagnosis is often very difficult. He concluded by saying that we are just entering on the right aspect of what has been called dentistry.

EARLY DIAGNOSIS OF SURGICAL DISEASES OF THE URINARY TRACT.*

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For the purposes of this paper the urinary tract will be limited to the kidney, ureter, bladder and prostate. The prostate, although essentially a genital organ, when diseased, interferes more with the urinary function than with the genital function, and must not be left out of account in any discussion of the urinary tract.

That early recognition of diseased conditions in these organs makes the desired "cure without undue risk, delay or pain" more often possible needs no argument, and to the physician who uses his trained brain, fingers and eyes, especially if he has access to a good microscope, there is little difficulty in recognizing the indications for further careful investigation of the urinary tract by the most modern methods of special diagnosis.

Interesting as these special instruments are, and fascinating as is their use, this paper is to deal briefly and solely with the indications which should lead to the employment of one or more of them.

In order to obtain some idea of the frequency of diseases in these organs as compared with general surgical diseases, the annual reports of the Massachusetts General and Boston City Hospitals have been taken for the last five years. During this period there were over 35,000 cases in the surgical beds of the two institutions. More than 1,100 of these are said to have presented some lesion of these organs, being about 3.1 per cent. of the total surgical admissions. The prostatic diseases lead, with 427 cases; the kidney follows, with 373 cases; the bladder next, with 304 cases, and the ureter last, with 7 cases. The grouping in this table is my own and requires further evidence before it is fully accepted, though it is in accord with the more recent theories.

SYMPTOMS.

Most patients with disease in the urinary tract consult their physician on account of one or more of three conditions. First, localized pain; second, altered function; third, hematuria. When all three symptoms are present, there is hardly a doubt of the presence of some definite surgical condition in the urinary tract.

That there may be some condition outside which reflexly excites symptoms is indicated by a case recently seen with Dr. Mitchell of Portland, Maine. Dr. Mitchell had done a complete and satisfactory perineal prostatectomy a few days previously; the healing was perfect and urethra free, but the man continued to have pain referred to his bladder, and he urinated every half hour. Naturally, blood and some pus were present in his urine. Finding tenderness over the right kidney and along the ureter, I suggested exploration, but both kidney and ureter were found to be normal.

At autopsy two months later, a bony tumor of the bodies of the lumbar vertebræ was found, not causing direct pressure on either kidney or ureter, but presumably irritating the nerve supply of the bladder. This combination of conditions is so very rare that it may be disregarded in making a preliminary diagnosis.

When any two of these symptoms are found, I believe that all surgical conditions in the urinary tract should be ruled out before attention is directed to other organs, or the patient is left to Nature somewhat upset by the various so-called urinary antiseptics and sedatives.

SURGICAL DISEASES OF THE URINARY TRACT
In Boston City Hospital and Massachusetts General Hospital
from 1900 to 1905.

KIDNEY.		
Inflammatory::		
Pyelitis	13	
Pyonephrosis	33	
Perinephritic abscess	26	
Tuberculosis	46	
Calculus	73	
Total	191	= 51%
Mechanical:		
Hydronephrosis	27	
Movable	89	
Rupture	26	
Total	142	= 38%
New growth:		
Sarcoma	19	
Carcinoma	6	
Hypernephroma	7	
Adenoma	1	
Cystadenoma	1	
Neoplasm	1	
Total	35	= 9%
Other disease	5	
Grand total	373	
URETER.		
Inflammatory:		
Tuberculosis	1	
Abscess	1	
Ureteritis	1	
Total	3	
Mechanical:		
Stricture	2	
Calculus	2	
Total	4	
New growth	0	
Grand total	7	
BLADDER.		
Inflammatory:		
Cystitis	100	
Tuberculosis	24	
Total	124	= 41%
Mechanical:		
Calculus	98	= 32%
New growth:		
Carcinoma	29	
Papilloma	11	
Sarcoma	1	
Total	41	= 13%
Other disease	41	
Grand total	304	
PROSTATE.		
Inflammatory:		
Hypertrophy	329	
Prostatitis	40	
Abscess	20	
Tuberculosis	3	
Total	392	=91%
Mechanical	0	
New growth:		
Carcinoma	26	
Adenoma	4	
Sarcoma	3	
Total	33	= 8%
Other diseases	2	
Grand total	427	

"Other diseases" includes all cases with diagnosis of hemorrhage and others without definite diagnosis.

Of the single symptoms pain is of little value in directing attention to the urinary tract, and the great majority of pains without disturbance of function or blood in the urine will be found to be caused by some other organ or system.

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*Read before the Surgical Section of the Mass. Medical Society, June 13, 1905.

Disturbance of function is almost worthy of being called pathognomonic. The normal adult individual, under average conditions of heat, excitement and drinking, empties his bladder from four to seven times a day, and should be able to sleep seven or eight hours undisturbed. There should be no difficulty, discomfort or urgency about the act. Regular variations from these habits are the first of all symptoms to appear in several urinary diseases and must be inquired into carefully and regarded with grave suspicion when persistently present.

Hematuria always means something wrong in the urinary tract and when persistent or when recurring intermittently it should lead to careful study as to its source and cause, not because the loss of blood is always dangerous, although it may hasten the end in some conditions, but because it is almost invariably an indication of some serious and possibly curable condition.

It is possible for a patient to have some surgical disorder of the urinary tract in which none of these symptoms appear for months, but under continuous observation something will be found if these organs are kept in mind.

So far as I have been able to look up records, there is only one of these surgical conditions which may not be found at any age. Infants and children have been reported as having movable kidneys, calculi, malignant growths, and in fact all these diseases except prostatic hypertrophy.

Beyond the fact that most of the movable kidneys recorded are female and all the hypertrophied prostates male, either sex may suffer from any of these conditions.

Instead of discussing the symptoms of each disease separately, I have grouped the most important symptoms and attempted to show why they appear under different conditions.

PAIN.

Pain from disease of the kidney may be felt at the point of injury or may be referred to the opposite side or to some distant point. Any mechanical condition which interferes with the outflow of urine, such as a kink in the ureter, or stone, or clot, or swollen lining, or tumor pressure, or stricture, or ligature, which prevents the free flow of urine from the kidney, will cause pain varying in degree according to the location and character of the obstruction. The same sort of pain may be felt in certain infections of the kidney in which the bulk of tissue within the capsule is increased, or in which there is hemorrhage under the capsule, or after artificial distention of the pelvis.

As has been previously pointed out, there are some observations which go to show that the kidney is extremely tolerant of all conditions which do not stretch its capsule, and that simple slitting of this capsule for a time will relieve the pain of pelvic distention, even when caused by stone in the ureter. How much, if any, sensation is possessed by the kidney beyond its reaction to capsular stretching or to what is sometimes called internal pressure I do not know.

Many malignant growths cause no pain for a long time, especially in children. The same is true of some renal calculi, but just as soon as a blood clot or fragment of tissue, or bit of calculus plugs the ureter, the typical attack of pain begins.

Palpation of a normal kidney, even if considerable force be used, causes no pain; packing, washing out or removing drains in the pelvis causes no pain in an exposed but uninfected kidney. Possibly its only sensory nerves lie in the capsule or walls of the pelvis. Of this we ought to know more.

If there is any characteristic of pains arising in the kidney it is their radiating character. They may be referred to any point between the shoulder and ankle on the same side, to the region of the opposite kidney, to the pelvis, or to the abdomen generally, and all at the same time.

Pain in the ureter is produced by stretching or distention. Passing a ureteral catheter into a normal ureter, even if purulent urine is flowing through it, causes less pain than passing a soft rubber catheter into a urethra. Apparently there is little sensation except that of tension in any case, but this may become extreme pain when a concretion is being forced down by the peristaltic contractions.

There is no possibility of being sure whether a pain which a patient describes is due to a renal or to a ureteral condition without other evidence. The patient's sensations may be precisely the same in either case. The bladder is not sensitive unless inflamed, and then it tolerates catheters and drainage tubes which are not moved about. Most of us are aware of the location of the dull ache of an acutely distended bladder, yet many patients carry from a few ounces to some pints of urine constantly without being conscious of it. From one woman who was not suffering very greatly I drew six quarts and half a pint of urine within one-half hour, and this is much below the greatest record.

Some patients with tuberculosis and new growths in the bladder suffer very little during the early stages, when radical treatment may be expected to produce the best results. One of my patients with cancer of the bladder had pain only on urinating until the growth reached a size which mechanically obsbtructed the urethral orifice. Many patients with calculi are reported to have suffered little until the bladder mucosa became damaged and infected.

In prostatic cases the patients suffer pain like that in kidney disturbances caused by stretching of the capsule in acute inflammatory conditions and from the secondary changes which occur in the obstructed bladders. Pain from prostatic trouble alone is usually referred to the rectum, glans penis, or perineum. When the bladder is involved there is the local discomfort before referred to, and often the almost constant tenesmus due to irritation at the orifice of the bladder and in the prostatic urethra which may amount to pain.

Of the diseases presented in the cases from the two hospitals, those representing acute infections are most likely to cause constant pain, those representing or producing foreign bodies, such as calculi, or clots of blood or pus, or good-sized fragments of tissue almost always produce intermittent pain, while the new growths may be painless for years.

In a general way, pain is more likely to be referred to a point below its origin than above it, but disease of the lower part of the tract is so likely to lead to infection or to painful distention above it that there is always a possibility of being led astray.

ALTERED FUNCTION.

Somewhere I have read that the act of urination begins with a pull of the ureteral muscle fibers which bound the trigone and are continued into the verumontanum of the prostatic urethra or to a corresponding point in the female urethra.

This muscular pull opens the internal orifice and allows some fluid to trickle into the urethra. The voluntary sphincter may now contract and force the fluid back for a time or allow it to pass on. If this description be correct, and I know of no anatomic, experimental or personal reason for doubting it, it explains how the function may be altered by conditions remote from the bladder.

Frequency.—Frequency of micturition may be increased by any condition which diminishes the capacity of the bladder or causes irritation of these lower ureteral fibers.

In cystitis, therefore, when the capacity of the bladder may be reduced to a few cubic centimeters, in tumor and calculus cases in which there is constant irritation of the trigone, and especially in the occasional acute inflammations which accompany an enlarging median lobe of the prostate, and which directly affect these fibers, we may expect increased frequency of micturition. To explain its occurrence in renal and ureteral conditions, it is only necessary to recall the continuity of the ureteral fibers from the kidney pelvis to the verumontanum or the corresponding point in the female urethra.

We have all known the frequent dribbling overflow of a distended bladder to be mistaken and treated—or neglected—as an "inflammation of the bladder" or a little "kidney trouble." There is no excuse for a physician's making an error of this sort. He has no right to guess when he can find out.

Urgency.—Some individuals find it impossible to resist the impulse to urinate. If they attempt to prevent the flow, they leak. In every case there is an uncontrollable contraction of the bladder, due possibly to irritation of the lower ureteral fibers, to a calculus in the ureter or bladder, to a new growth in the bladder, to an enlarging median lobe of the prostate, to an inflamed condition of the urethra nearest the bladder outlet, or else to an incompetent voluntary sphincter, any of which conditions may disturb the normal relation between bladder capacity and contraction.

I have seen examples of all these conditions and doubtless there are others that will produce the same symptom. It is too suggestive to be neglected and must bear an intimate relation to

Incontinence.—Except in the overflow of distended bladders and as it may suggest search for and removal of all irritations wherever found, incontinence of urine has no surgical significance in this paper.

Difficulty in Urination.—This is perhaps as common a symptom as any and results from either mechanical obstruction or from some fault in the nerve supply. It occurs in conscious patients with paralysis of the abdominal muscles and competent sphincter, as well as in those who are in a comatose or delirious condition.

My observation has led me to believe that paralytic and comatose patients are quite as apt to be incontinent as to have retention, unless there is some obstacle which they had previously been able to overcome by voluntary abdominal pressure.

The mechanical obstruction of which we hear most to-day is the hypertrophied prostate, and while unable to discuss it as I should like, I would remind you that it is not a disease of advanced life exclusively. Several cases have been reported in the thirties, and between forty and forty-five the number of men whose prostate begins to produce some discomfort and residual urine is very considerable.

Anuria.—This may occur in the course of certain acute diseases, as a result of some forms of poisoning, after trauma to the urinary tract below the kidney, or to the kidney itself, from vaguely understood reflex disturbances outside the urinary tract, and from any condition which mechanically obstructs the flow of urine into the bladder. The last group of cases is not always easy of separation from the others. Fortunately patients usually go from two to five days before symptoms of uremia appear, and this allows sufficient time, if properly used, for decision and for operative measures if necessary. Absence of urine in the bladder during twelve consecutive hours, if proved by a catheter, may well arouse grave apprehensions, and twenty-four hours is a limit beyond which the responsibility lies very heavily on any single practitioner.

HEMATURIA.

Red blood may show in the urine in amounts recognizable to the naked eye, with or without clots, or in such quantity as only to be recognized by the aid of the microscope. In either case, it may be intermittent in appearance, but in the first case blood is likely to be found on microscopic search long after it has apparently disappeared.

While it may come from any part of the urinary tract and from several causes, persistent or recurring hematuria is so strongly suggestive of a new growth that, next to anuria, it is the gravest single symptom of all.

According to Albarran, hemorrhage was the first symptom in 78 per cent. of 140 malignant bladder tumors and was present at some period in nearly all. According to Israel, 70 per cent. of 66 malignant renal tumors were first indicated by hemorrhage, and 93 per cent. showed it at some period. Deneclara, in 168 cases of tumor of the kidney in the adult, found that hemorrhage was the first symptom in 69 per cent. Even under exceptionally favorable conditions the cause and source of the hemorrrhage may remain in doubt for years.

A patient of mine had hematuria for three years without renal symptoms or palpable tumor. There was no loss of weight or strength and he was particularly active physically. He had a slowly growing prostate with considerable swelling and redness of the median portion, as seen through a cystoscope, which was supposed by one of our most experienced men as well as by myself, to be the source of the hemorrhage. A third surgeon, seeing him six months later, found a distinct renal tumor and a hypernephroma at operation. This experience has taught me never to accept a probable cause of hematuria without ruling out other possible causes.

While hematuria may possibly be due to some harmless condition, its almost constant association with malignant disease and calculi, make it, to my mind, quite as grave, though not so urgent a symptom as anuria of a few hours' duration.

All writers agree that blood in the urine appearing without reference to any physical violence, exertion, or jarring, is very suggestive of new growths. When the hematuria follows such violence, even if slight, they consider it more probably due to the presence of a calculus. In either case it is a hematuria.

If there be also a pyuria, the diagnosis is complicated by an infection which may wholly account for the hematuria or which may be a secondary process grafted on to the original disease.

Continuous or Recurring Discomfort.—This brings us to the most frequent of all urinary conditions—continuous or recurring discomfort rather than pain, often poorly localized, little if any disturbance of function, little if any blood in the urine, but pus in the bladder, urine continuously in varying amounts. The majority of patients with these symptoms can be cared for by any man who will handle a catheter and his solutions in a cleanly way; many will recover if they will wash themselves out by drinking enough water, but the other sort who continue in about the same condition for months, swallowing everything from hexamethylenamine to various nostrums, are the patients who appear later with incurable tuberculosis, or inoperable cancer of bladder, ureter or kidney, with trabeculated and rotten bladders, with kidneys ruined by calculus obstruction, or honeycombed with pus, or transformed into that puzzle of the pathologist—amyloid. These are the cases which arouse regret in the mind of the surgeon, or of the pathologist.

If these symptoms will disappear at all under irrigation and monosyllabic or polysyllabic treatment, they will go within a few weeks at most. If they persist longer, either the infection is not reached by the bladder irrigation or controlled by the chemicals, there is an infection in the deeper tissues, or else the pus is masking some condition like a calculus or a new growth, which is entirely distinct from the infection, though it may be the predisposing cause.

This is the time to study the case by every available method until the condition is understood and proper measures and time for treatment are determined. A patient neglected at this stage may get well from a colon bacillus pyelitis or may pass a small calculus through the natural channels, or possibly make a spontaneous recovery from a tubercular infection, but who can tell which patient will do this and which get steadily worse.

Of pyelitis, Kelley of Baltimore says in substance: "It is of the utmost importance, but is rarely recognized in the earlier stages, or when found is often thought unworthy of attention because not immediately provocative of serious symptoms. The kidney is an organ more necessary than the uterus or Fallopian tubes, but there is a general indifference to mild cases of pyelitis, while the large pus kidneys are noticed. It is important to recognize any grade because the severe cases may result from the mild."

Pyelitis, pyelonephrosis, pyonephrosis, perinephritic abscess, all infective processes, cover one-fifth of all surgical kidney admissions to the two hospitals. If to these we add the cases of tubercular infection which may also show early purulent urine, we take in nearly one-third of the surgical kidneys.

If we follow modern theories and include the calculus cases as caused by an earlier inflammatory condition which might possibly have been recognized, we find that one-half of these surgical kidneys might have been suspected in an early stage from the presence of pus in the urine, and that the patients might possibly have been spared some suffering at least.

Inflammatory processes in the bladder are likely to be recognized earlier because of the alteration in function which nearly always accompanies them and because of the pain which also impresses the patient with the idea that something is wrong.

The inflammatory condition which persists longest without symptom is found in prostatic hypertrophy. Often nothing is noticed by the patient until he suddenly realizes that he has to rise one or more times at night to empty his bladder. This symptom in a man over 40 is always suggestive and characteristic of a bladder with residual urine.

General Symptoms.—Patients with surgical disease of one kidney are apt to sleep on the affected side; varicocele may develop on the same side as a kidney tumor; kidneys with acutely distended pelves and capsules are exquisitely tender, while some hydronephrotic kidneys and very large tumors may be little sensitive. Rectal or vaginal touch may discover tenderness over the lower end of one ureter indicating trouble higher up on that side; median obstruction in the prostate is not always to be felt by the rectum. A tender "Israel's point"—junction of twelfth rib with the outer border of erectorspinæ, is valuable in identifying the kidney as a source of vague abdominal pain. The normal kidney, ureter, bladder and prostate are not painful under reasonable pressure.

SUMMARY.

Localized pain, altered function, hematuria, with or without pus—these are the cardinal symptoms of surgical disease in the urinary tract. Tumor, tenderness and residual urine do not require complicated apparatus for their recognition, and their presence or absence can be determined by any physician who will take the trouble to examine his patients properly. These preliminary points are simple, sufficient for a correct diagnosis sometimes, and always trustworthy in indicating the urinary tract as a source of trouble. Nothing in surgery requires more concentrated attention, more accurate observation, or a finer technic, than a complete and correct preoperative diagnosis of the more obscure conditions in the urinary tract which stand between our patients and health.

LATERAL DISPLACEMENT OF TENDON INSERTIONS FOR THE CURE OF STRABISMUS.*

EDWARD JACKSON, M.D.,
DENVER.

The recti muscles act on the eyeball from a common origin. Their normal directions prolonged backward would pass practically to a common point in the outer, lower wall of the optic foramen. Their differences of action depend on differences of insertion. By lateral displacement of its insertion one rectus might be made to take up the function of either of the others. A displacement of not more than 15 mm. up or down, and out, would cause the internus to perform the function of the superior or the inferior rectus.

Some lateral displacement of the insertion of the recti tendons is possible; and any portion of such lateral displacement can bring about a corresponding change of function. Conceive a plane passed through the insertions of the recti muscles roughly perpendicular to the antero-posterior axis of the eyeball, intersecting the sclera in the circumference of a circle. Then the new function of the muscle, produced by the lateral displacement of its insertion, corresponds to the sine of the arc of that displacement.

Let Fig. 1 represent such a circumference with the internal superior, external and inferior recti insertions at A, B, C, D, respectively. If the insertion of the internus be removed from A to E, it will continue to turn the eye inward with a force measured by M O, the cosine of the angle A O E. But it will also tend to turn the eye upward with a force proportioned to M E, the sine of the angle A O E. As the angle A O E is increased, its sine increases, while its cosine diminishes. If the displacement were through 90 degrees, bringing the insertion of the internus to B, the cosine of the angle becoming zero and the sine equal to the radius, the full force of the internus would be exerted in turning the eye up.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

The eyeball and the recti muscles are not suspended freely in the orbit, so that neither rectus can have its insertion displaced laterally until it can replace in function one of the other recti muscles. Still, they are each capable of sufficient lateral displacement to give very important practical aid in the correction of strabismus. Each muscle lies embedded in tissue from its origin to its insertion. Its sheath is more or less closely connected with adjoining tissues throughout. Still, the tissues surrounding the muscles are comparatively soft and yielding, and the adhesions of its sheath have little more power to prevent its lateral displacement than to prevent its advancement or retraction. Moreover, the form of a rectus muscle is distinctly favorable to lateral displacement. Starting from a comparatively narrow tendon of origin, it broadens to a comparatively wide (8 to 12 mm.) tendon of insertion; and within the limits of this breadth of insertion it is capable of almost free lateral displacement.

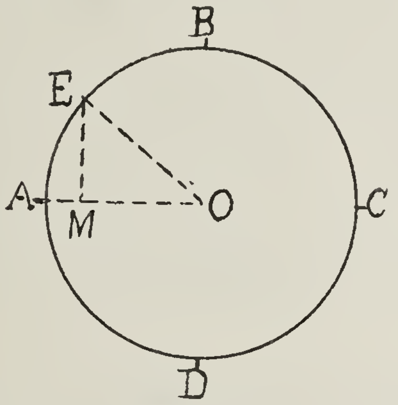

Figure 1.

Let Fig. 2 represent the origin of the rectus muscle and B C its insertion. In its normal condition we may regard the force of the muscle as exerted at the middle point D of the insertion. But if the whole insertion be divided except at the point B, and the tendon of the insertion gathered together so that the force of the muscle will be exerted at that point, the effect will be equivalent to that of a lateral displacement, by half of the width of the tendon of insertion. The form assumed by the muscle will be approximately that shown in Fig. 3.

The alteration of functions of the recti muscles by lateral displacements is favored by the fact that under normal conditions the function of each of the recti muscles varies with the direction in which the eyeball is turned. For instance, with the eye turned strongly inward, the superior and inferior recti come to the assistance of the internus and aid in convergence. With the eye turned strongly outward, they lose all tendency to turn the eye inward and may even aid divergence. Since the superior and inferior recti thus normally become adductors or abductors of the eyeball, it is possible to alter their function by lateral displacement without seriously disturbing muscular co-ordination and control.

The two ways in which I have accomplished lateral displacement of the tendon insertion are partial tenotomy and complete tenotomy, with suture of the tendon to the site of desired insertion. The latter will not be dwelt on here, as I have described[1] it at length in reporting two cases in which lateral displacement of the superior rectus was done for the relief of paresis of the superior oblique.

PARTIAL TENOTOMY.

The division of the tendon begins at one edge of the insertion and extends beyond the middle. To have very much effect, almost the whole breadth of the insertion must be divided. But sufficient tissue should be left to keep the uncut side of the tendon perfectly firm. Any giving of the undivided margin, either at the time of operation or subsequently under inflammatory changes, will diminish the lateral displacement and give somewhat the effect of a setting back of a tendon as by ordinary tenotomy. Therefore, in making this kind of a partial division of the tendon, the whole tendon should be raised on the strabismus hook and drawn on so that the operator will know just how far the firm tissue of the tendon extends.

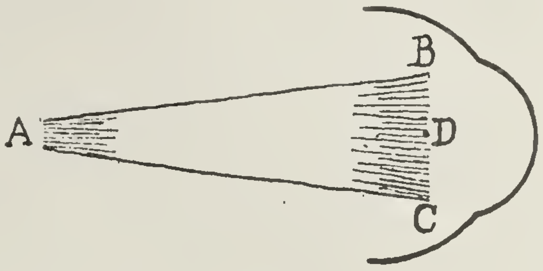

Figure 2.

I have practiced lateral displacement by a partial tenotomy on the superior and inferior recti muscles chiefly for the correction of excess of convergence. Partial tenotomy may be done as the sole operative procedure. For this purpose an incision is made over and parallel to the nasal margin of the superior rectus tendon, 5 or 6 mm. long and commencing 3 mm. back from the cornea. Through this incision a strabismus hook of medium size is to be introduced, passed beneath the tendon, and drawn on until the temporal margin of the tendon is well defined. Small, blunt-pointed tenotomy scissors are then introduced between the strabismus hook and the sclera, with one point behind and the other in front of the tendon, and so much of the insertion as may be desired is divided.

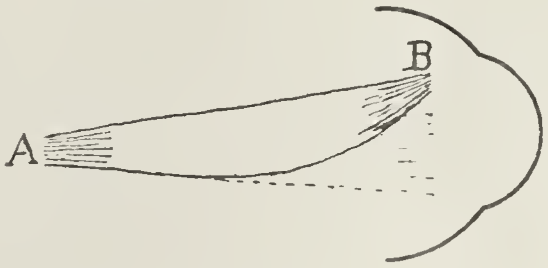

Figure 3.

The lateral displacement produced will be greater if the nasal margin of the tendon is "stripped" for 8 or 10 mm. back from its insertion. "Stripping" is done by passing the point of the strabismus hook backward from the insertion, alternately over and beneath the margin of the tendon; and by using the points of the scissors in a similar manner and snipping any adherent lateral bands.

A similar incision is then to be made along the nasal border of the inferior rectus tendon and the same operation repeated on it. Both the superior and the inferior tendons must be laterally displaced at the same operation; and generally to an equal extent, although for vertical strabismus or hyperphoria the displacement may be made unequal.

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[1] Ophthalmic Review, March, 1903.

This operation, successfully done, is followed by no diplopia, and by no more reaction than ordinary complete tenotomy. As with other muscle operations, the extent of the hemorrhage and the inconvenience it may cause vary and can not be exactly foreseen. My experience with this form of operation, done alone, is too small to estimate the extent of its influence. But it has proved a satisfactory adjunct to advancement of the opposing muscle.

EXTENDED TENOTOMY.

Lateral displacement of the tendon insertions of the superior and inferior recti in connection with tenotomy of the internus is an effective and reliable operation. The unsatisfactory results obtained by complete tenotomy for high degrees of convergent squint were early noted and commented on. One of the early operators, Phillips, beside dividing the tendon, separated the eyeball from all overlying tissue on both sides of the tendon, and thus undoubtedy encroached on the nasal margin of the superior and inferior tendons. It was said that he obtained satisfactory results in cases that other operators failed to relieve. Velpeau mentioned this practice, with approval based on his own experience. But it seems never to have secured general recognition as an established procedure. Phillips said he sometimes extended his incisions so as to include one-third of the surface of the eyeball. But this would probably involve only a minor part of the width of the superior and inferior tendons; and the lateral displacement thus secured would be but slight. However, the practice was attended by no disastrous results, such as followed repeated tenotomies or the division of the internus too far back.

The operation that I have practiced begins with a complete tenotomy of the internus. Ordinarily for tenotomy of the internus I make the conjunctival incision radiate from the center of the cornea. For this operation, however, I prefer a rather long incision, 10 mm., almost parallel to the corneal margin and slightly in front of the insertion of the internus. Through this the internus is divided at its insertion in the ordinary manner. A strabismus hook of moderate size is then entered at the upper angle of the conjunctival incision, and carried in close contact with the sclera and cornea backward and upward beneath the tendon of the superior rectus. The tendon being well raised on the hook and its temporal margin (that is, its margin of firm tissue) clearly recognized, the scissors are introduced and the nasal one-half to three-fourths of the tendon divided at its insertion. More than one-half of the tendon must be divided to get any decided effect, and the care before mentioned must be exercised to leave at least 2 mm. of the firm portion of the temporal edge of the tendon still attached. Before introducing the strabismus hook the points of the scissors may be used to divide the tissues about the nasal margin of the superior tendon; and before cutting that tendon the hook may be pressed back along the edge of the tendon, as before described, to free it from attachments. This "stripping" of the edge of the tendon may be carried back one-half inch or more from the insertion.

The making of the conjunctival incision approximately parallel to the corneal margin renders it comparatively easy to do conjunctivally the partial tenotomies of the superior and inferior recti from the upper and lower angles of the incision. To prevent falling of the caruncle after such an incision, however, it is well to dissect the overlying tissue rather freely from the tendon of the internus before cutting that tendon; and to complete the operation by bringing together the conjunctival wound by a suture. The after-treatment is similar to that of a simple advancement operation.

It will be noted that this operation produces not simply a lateral displacement of the tendon. As regards the contracted nasal margin of the muscle, it gives the backward displacement of the insertion such as is produced on the muscle as a whole by the ordinary tenotomy. The results to be obtained by this operation may be illustrated by a single case:

Mr. C. P., aged 27, gave the following history: His eyes began to get crossed when he was about 7 years old. At first it was entirely intermittent, but it became more frequent; and when he was 10 or 11 years old it became constant. He was going to school during that time. The strabismus continued slowly to increase until the age of 18 or 20. Since that time he thought there had been no change in it. He had never noticed diplopia.

The amount of squint varied from 80 to 100 centrads (45 to 60 degrees) or fully 10 mm. The inner margin of the cornea was concealed behind the folds at the inner canthus in both eyes at the same time. Either eye was used habitually, the right only to fix objects to the left of the median line, and the left only to fix objects to the right of the median line. The carrying of the object across the median line to the distance of 10 degrees, either way, invariably caused a change of fixation from one eye to the other. Still, by covering the other eye, either could be made to turn out beyond the median line. The vertical movements were fairly executed. There was constant moderate nystagmus. The eye-grounds were good. The correcting lenses and vision obtained with them were: Right eye + 2. $\asymp$ + 2.25 cyl. ax. 60° = 4/9 partly. Left eye + 1. $\asymp$ + 2.25 cyl. ax. 120° = 4/12 partly.

Under cocain, with the assistance of Dr. E. W. Stevens, I did the operation above described on the left eye, dividing the nasal two-thirds or three-fourths of each tendon (about 7 mm.) at its insertion. This was followed by notable increase in the freedom of outward rotation. The conjunctival opening was closed by two sutures.

At the end of 30 hours all dressings were discontinued. The convergence remaining amounted to 50 centrads (30 degrees). But there was marked increase in the range of movement for both eyes.

At four days the stitches were removed. They had caused no irritation. The convergence now remaining was 35 centrads (20 degrees). There was marked improvement in the fixation of both eyes, there being now quite a field in which either eye could fix, making it a true alternating strabismus.

On the twenty-sixth day it was possible to obtain binocular diplopia, and with prisms of 36 centrads bases out, the Maddox rod showed equilibrium. At this time the patient used the eye that had been tenotomized, almost to the exclusion of the other; although it had vision of only 4/12 partly and the other had vision of 4/9 partly. This was evidently due to the greater ease with which the left eye was moved. When he was required to fix something requiring his best vision he would by movements of the head bring the right eye into use.

The next day the right eye was operated on in a similar manner, dividing the full two-thirds of the tendons of the superior and inferior recti from the nasal side. The conjunctival stitches were removed on the second day, with over 20 centrads (12 degrees) of convergence still remaining. During the succeeding two weeks the convergence gradually lessened, and at the end of that time the eyes were mostly parallel for distant vision, although they still showed excess of convergence for near vision. By this time he was able to fix with either eye, and was beginning to show a preference for the right eye, which had the better vision.

The cure seems permanent, but full binocular vision has not been obtained. Although diplopia is readily excited, it seems to give him no annoyance when the visual axes are allowed to deviate inward during near vision.

At the close of the first operation of this kind it was entered in the case record: "The operation was not difficult and not much more painful than an ordinary free tenotomy. It was less serious than an advancement." This was held true equally of subsequent operations. The ensuing reaction and disturbance have not been greater than after the simplest advancement operations. This case was operated on in August, 1899. Five years later the result remained unchanged. In none of the few cases on which the operation has been done has there been any unfavorable result, either at the time of operation or subsequently.

It might be feared that such extensive division would be followed by protrusion of the eyeball. I have seen quite notable protrusion after what seemed to be a badly performed tenotomy, but nothing of the kind after the operation just described.

In September last I operated on Mrs. H. for convergence of 80 centrads and upward, reducing it to 10 or 15 centrads (6 or 8 degrees) by one operation. This included complete tenotomy of the internus, division of the nasal three-fourths of the superior and inferior recti tendons, and advancement of the externus. She was watched from day to day for protrusion of the eyeball; and neither immediately after the operation nor at any subsequent period was there a perceptible increase in the prominence of the operated eye. In every case the total mobility of the eyes has been increased by operation.

The number of cases in which I have advised and performed these operations is small. But I am certain that they constitute a valuable addition to our operative resources for the treatment of strabismus.

DISCUSSION.

Dr. G. C. Savage, Nashville, Tenn., considered Dr. Jackson incorrect in his statement that, when a muscle is displaced to the line of attachment of another muscle, the former will perform the function of the latter. Suppose the internus is made to take the place of the externus; when the convergence impulse is sent down, the left eye will turn in and the right will sweep out. Suppose, again, that the right externus is made to take the place of the right internus; the neuricity from the fourth conjugate center will cause the left eye to go toward the right and the right eye to go toward the left. The impulse determines which way the eye will turn.

There are two doors to the house of trouble. The first is labeled "a complete tenotomy." The other is marked "displaced attachment when there was no cyclophoria." Just as certain as one makes a marginal tenontomy, when there is not cyclophoria, the patient and the operator, said Dr. Savage, get into the house of trouble. When a muscle is displaced by advancement, unless there is cyclophoria, surgeon and patient get into trouble. When there is a cyclophoria it is a mistake not to do a marginal tenotomy. Dr. Savage said that in 1890 he pointed out the dangers of advancements, the danger of getting the attachment too high or too low and causing a cyclophoria. He said that the operation which Dr. Jackson described should be done in suitable cases, those cases have cyclophoria or cyclotropia. There are curable cases of squint that can not be cured by simple tenotomy; for these cases have cyclotropia. Until they are measured to determine which part of the tendon to divide and which not, the patient will not get well. There can be no question that in some cases marginal tenotomy is indicated and that in others it is not; some cases in which the weaker muscle may be advanced and its attachment displaced, and in others in which, if that is done, the patient is made a thousandfold worse.

Dr. Edward Jackson said that he does comparatively few muscle operations of any kind. The operation described has not been done on patients that possessed binocular vision or who have been capable of developing it. There has been absolutely no trouble from "rotation" of the eye ball. It is possible that this has been avoided by operating on both the superior and inferior muscles at the same time. In the cases alluded to, published in the *Ophthalmic Review*, there was, as part of the paresis of the superior oblique muscle, a distinct tendency to rotation which the operation corrected. Dr. Jackson remarked that the points that he wanted to make were that the internus is not the sole adductor and the externus is not the sole abductor. In cases of high convergent strabismus he believes that the inner portion, the nasal portion of the superior and inferior recti muscles, afford quite as great an obstacle to the proper turning of the eye as the internus itself. He has not only done this operation. but he knows of two instances in which Dr. Stevens of Denver has done it with complete satisfaction. He reported his first case in detail because it has now been six years; and five years after the operation the result was practically the same as shortly after it. He believes that the bad ultimate results from tenotomies, which we still see, are not due to the fact that complete tenotomy is not a proper operation, but to the fact that it is not applied properly, or is applied to cases that should not be subjected to it.

SYMPATHETIC INFLAMMATION FOLLOWING PANOPHTHALMITIS.*

WILLIAM ZENTMAYER, M.D.

PHILADELPHIA.

Until within a comparatively recent period in the history of sympathetic inflammation it had been held that eyes which had been the seat of purulent panophthalmitis did not excite sympathetic inflammation. In 1876, Alt, as a result of original observation and a survey of the literature of the subject, stated that panophthalmitis was among the conditions found in the exciting eye. Notwithstanding this, some authors, among them Fuchs, consider phthisical globes (sequel of panopthalmitis) harmless, and make a distinction between such eyes and atrophied globes (sequel of plastic uveitis).

Knapp states that after panophthalmitis "the eye shrinks, but will remain free from irritation without jeopardizing the integrity of the fellow eye." Treacher Collins says of the inflammation in the exciting eye that it is always of a seroplastic and not of a suppurative type.

Schirmer, in 1900, stated that he had found uveitis purulenta present in only two of twenty-one exciting eyes, and had collected nine instances in 100 exciting eyes. He says that he uses the term "uveitis purulenta" designedly, as the classical picture of panophthalmitis was present only in a minority of the reported cases, whereas the clinical diagnosis had been panophthalmitis. In his own cases the microscopic examination showed that the purulent inflammation was not of the severest type, as the retina and choroid were completely preserved in the posterior segment of the globe and showed changes such as we are accustomed to find in plastic uveitis. He further says that, while he could not assert that sympathetic ophthalmitis can not occur after severe panophthalmitis, it must, in all events, be of extraordinary rarity.

Ruge, as a result of laborious investigations undertaken to determine whether a difference in type exists between exciting and non-exciting idiopathic or traumatic uveitis, asserts the correctness of Schirmer's findings and concludes that true purulent panophthalmitis never induces sympathetic ophthalmitis.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

In 1904, Ahlström reported a case in which these conditions were associated and takes issue with both Schirmer and Ruge, as he thinks that in every panophthalmitic eye that is not enucleated within a short time of the beginning of the disease there is practically the same picture that these authors saw, and he believes it to be the expression of the termination of purulent panophthalmitis.

I have succeeded in finding the records of fifteen cases of panophthalmitis followed by sympathetic inflammation. In eight of these there is an anatomic description of the eye. In five there is also a report of the microscopic findings. In three the data are insufficient for a critical consideration.

In the first of Schirmer's cases, an insect had flown into the left eye, causing an inflammation which became progressively worse until, when seen by Schirmer two months from onset, panophthalmitis had developed. About three weeks subsequently the eye was enucleated. Eleven weeks later sympathetic inflammation occurred.

In the second case, the eye became inflamed as a complication of measles. Panophthalmitis followed a perforating ulcer of the cornea. Sympathetic inflammation took place four months later. In both cases the choroid and retina were well preserved in the posterior segment of the ball, whereas the iris and ciliary body were highly disorganized. The changes in the choroid were those of a plastic inflammation. It was greatly thickened and contained nests of mononuclear round cells within the stroma and relatively intact capillary walls.

In Gunn's first case, panophthalmitis occurred on the fourth day after the operation of cataract extraction, and sympathetic inflammation followed ten weeks later. The exciting globe was shrunken and there was a slightly vascular cicatrix corresponding to the operation wound. Above this there was a small, round, fleshy swelling in the conjunctiva. Anatomic examination revealed great thickening of the sclerotic and of the uveal structures. The retina was indistinguishable, and the center of the globe was occupied by tough fibrous tissue, in which was imbedded several calcareous particles. The microscopic description is that of a fibrino-plastic inflammation.

In a second case by Gunn, the operation for cataract extraction, one year previously, was followed by late panophthalmitis. The date of the onset of the sympathetic inflammation was unknown. The result of the cataract operation had been bad at the time. The exciting eye was panophthalmitic, with gaping wound through which the iris protruded. Pathologic examination of the excised eye showed great thickening of choroid and iris. A pea-sized cavity, probably formed by the detached retina, was filled with a red fluid containing shreds of a purulent appearance. There were purulent remnants of the vitreous body.

Three cases of suppurating iridocyclitis following cataract extraction, with sympathetic inflammation as a sequel, are reported by Millis. In but one of these is there a reasonable certainty that there was actual panophthalmitis. Sympathetic inflammation occurred seven weeks after the extraction. There are no pathologic data.

Bickerton's case was one of perforating wound in the ciliary region, followed in three days' time by panophthalmitis. Sympathetic inflammation occurred ninety-seven days after the injury, and there were four distinct attacks. The pathologic notes are that there was a small, shrunken stump about the size of a small marble.

In the case reported by Deutschmann (case of Weiland), sepsis and panophthalmitis followed a mastoid operation. There was phthisis bulbi without previous perforation of the globe. Eight months later sympathetic inflammation developed. The cornea and sclera were greatly and to an equal degree thickened. The choroid was atrophied and the ciliary body thickened. The retina was totally detached. The vitreous was dragged forward into the lenticular fossa. Microscopically the cornea was vascular but intact, and there was round-cell infiltration of the lamella. The anterior chamber contained fibrous exudate, mixed with round cells. Round-cell infiltration of the iris and ciliary body was present. There was atrophy of the choroidal body in various stages of degeneration. The folded lens capsule was attached anteriorly to the iris and ciliary body by an infiltrated fibrous tissue composed of the vitreous. The retina was attached, in part, to the vitreous mass by fibrous bands. The choroid was infiltrated by round cells. *Staphylococcus pyogenes* was present.

Scheffel's case resembled the above case. Following choroiditis metastatica postmeningitiden, the globe became shrunken one half. Scheffel states that, owing to the accepted view that, after panophthalmitis, sympathetic inflammation is scarcely to be feared, enucleation was not performed. Sympathetic ophthalmitis occurred two months from the onset of the inflammation.

In Ahlström's case there was an infected traumatic ulcer of the cornea. This was cauterized and a punctiform paracentesis performed. There resulted an adherent leucoma, possibly of a fistulous type. There was bilateral dacryocystitis, for which the sacs were enucleated. The eye did well for four months, when it became inflamed. When Ahlström again saw it there was a subsiding panophthalmitis, with two scleral perforations. The excised ball measured 18x19 mm. and its form was well retained. The inner coats of the eye were almost completely destroyed. There were remnants of the ciliary body and of the choroid. The latter for a short distance above the nerve head. A granulation polyp extended from the purulent vitreous to the perforation in the sclera, through which it projected. Microscopically the picture was one of a purulent destruction of the intraocular tunics. Numerous colonies of cocci, presumably staphylococci, were found in the vitreous abscess and in the choroid.

In 1876 Alt tabulated the anatomic findings in 110 cases in which sympathetic inflammation or sympathetic irritation had been excited, and in his conclusions states that purulent panophthalmitis was found to be an exciting cause, and further states that, in thirteen instances of panophthalmitis purulenta, iridochoroiditis was induced in the sympathizing eye. From a careful examination of the abstracts given in this exhaustive résumé, and where possible of the original records, it was found that of these thirteen instances in all but two (Justi and Packer) the inflammation was described as either of a plastic or a purulent type, or there were changes present which result from plastic inflammation.

In the oft-cited case of Lawson, the globe was shrunken one-third, the greater part of the cornea was occupied by a cicatrix. T.— =2. Sympathetic ophthalmia followed the wearing of an artificial eye. This was probably the remains of an eye once the seat of a mixed type of inflammation.

In Craig's case there was a history of a panophthalmitis five years previously, following a perforating ulcer of the cornea. The globe was phthisical. Vision in the fellow eye had been failing for one year. There was slight ciliary injection. Total posterior synechia; shallow anterior chamber and T=+1. The nerve was atrophic and showed pathologic cupping. Iridectomy was done. Two weeks later the eye was quiet and tension normal. From the symptoms and behavior of the eye under iridectomy this may be considered a doubtful case of sympathetic inflammation.

My own case is as follows:

M. K., aged 70, was first seen at St. Mary's Hospital on April 1, 1902, when an examination showed in the right eye an immature cataract in an otherwise apparently healthy eye. In the left eye there was an incipient cataract. The fundus showed no gross changes. The patient returned in September, 1904, with a mature cataract. The candle field was good. The patient was frail and poorly nourished. There was neither albumin nor sugar in the urine. The cataract was extracted October 1. An upward section with a small conjunctival flap was made with difficulty, owing to the globe being deep set. The lens could not be made to present and was removed by the wire loop. The eye was examined at the end of twenty-four hours, at which time there was undue corneal haze. On the sixth day the cornea had cleared except for the persistence of a striated keratitis. When again seen by me on the eighth day the cornea wound was infiltrated with pus. The lips of the wound were thoroughly cauterized with the actual cautery, and iced compresses and iodoform were used. These measures having failed to arrest the suppurative process by the end of forty-eight hours, all the involved tissues were again cauterized. Notwithstanding this panophthalmitis followed with only moderate proptosis and edema of the lids. Enucleation was again and again advised but refused, and after an eight week's stay in the hospital she was discharged with a shrunken, tender globe.

December 8 she returned to the hospital, stating that for the past five days the fellow eye had been annoying her, and that the sight had been growing dim. There was a marked uveitis with exudate in the pupillary space and adhesions of the iris to the capsule of the lens along the lower pupillary margin. She absolutely refused to have the shrunken ball removed or to have the inflamed eye treated. She was not seen again for one week's time, when she presented herself at my service at the Wills Eye Hospital, willing this time to submit to enucleation. The sympathizing eye was markedly congested, the pupil small and vision reduced to finger counting. The shrunken globe was at once enucleated and active measures instituted to control the inflammation in the left eye. Inunctions of mercury and salicylate of soda, after the method of Gifford, with milk punches, were employed. After three weeks of this treatment some improvement was noted, but the patient failed rapidly in strength and was very much depressed mentally. Relapses in the condition of the eye occurred and in the early part of January she suddenly became blind. She was removed from the hospital a few days later and died two weeks subsequently.

The pathologic study was made by Dr. Edward A. Shumway, whose report follows:

"The eyeball is in a state of well advanced phthisis bulbi, its antero-posterior diameter (in section) measuring only 16 mm. and its transverse diameter 20 mm. The globe is distorted and sclera thickened, and the cornea flattened. The lens is absent and the entire eyeball is filled with cellular exudate.

"Microscopically: The cornea is almost entirely replaced by connective tissue, which contains many blood vessels and much round cell infiltration. The surface epithelium is thickened and irregular, sending inshots of cells into the tissue beneath, and in places is absent over a considerable area. There has been a perforation at the center, and Descemet's membrane is curled up back of the cornea. There is no trace of the lens except for the capsule, which is imbedded in a thick mass of organizing exudate, which presses up against the posterior surface of the cornea. The iris and ciliary bodies are entirely destroyed and can be recognized only by the clumped masses of pigment with which the cellular mass is infiltrated which fills up the interior of the eyeball, and is being converted into organized tissue. To some extent this mass is composed of pus cells. These are particularly prominent on one side in the neighborhod of the ciliary body, and from here a purulent collection surrounds and infiltrates the processes. Elsewhere and in the position of the choroid, the inflammation has more of a plastic character, the cells being mononuclear in type; with them are many endothelial cells, and in certain localities, especially in the posterior half of the eyeball, a great many giant cells (Fig. 1). In the tissue there is no evidence of caseation and hence the process is not to be considered tubercular. These giant cells have been long known and well described, especially by Krause, Axenfeld, Schirmer and others. The cellular mass representing the choroid is separated from the sclera, as the result of the shrinking of the tissue in the interior of the eyeball, and the space thus left is filled with a moderately cellular exudate which is also being organized, and contains numerous fine capillaries. The retina is almost completely destroyed, only traces of it remaining. The vitreous is occupied also by an exudate which contains comparatively few cells but a large amount of fresh blood. It shows also well advanced organization, fine connective tissue processes running in every direction, accompanying newly formed capillaries. The older blood vessels throughout the eyeball show marked changes; their walls are thickened, the cells of the intima are proliferated, and many of the vessels in the choroid are completely obliterated. The ciliary nerves in the thickened sclera are surrounded by dense mantles of round cells, but outside of the sclera they do not show the condition to as marked a degree. The optic nerve is moderately infiltrated, but the chief excess of cells is in the intervaginal space, especially at their blind extremities within the sclera. Here there is a pronounced proliferation of the endothelial cells, and also many infiltrating round cells.

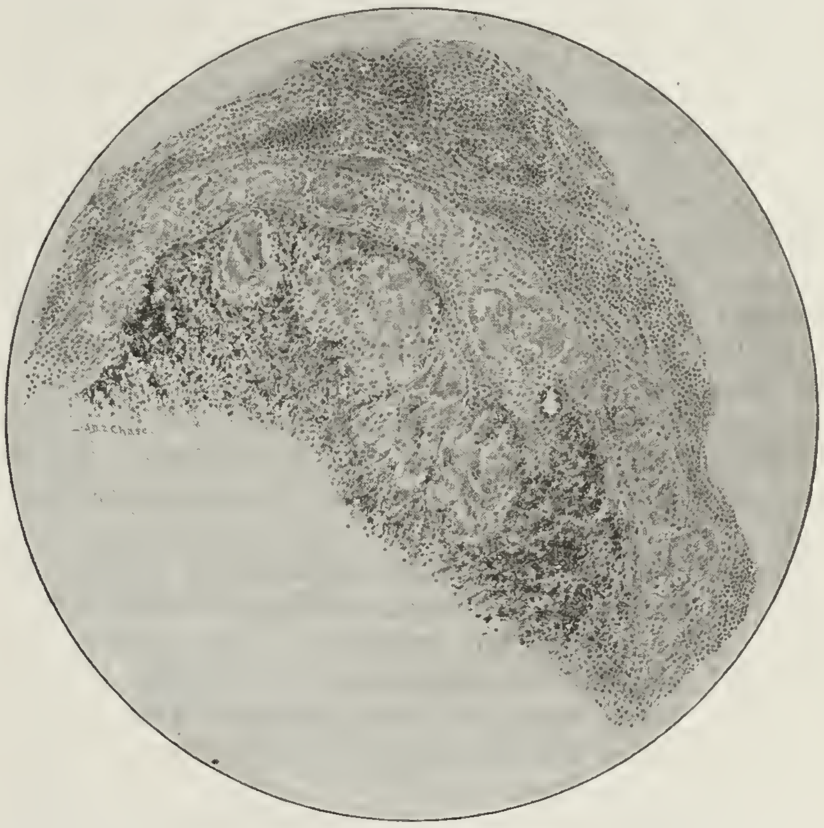

Fig. 1.—Giant cells occurring principally in posterior segment of eyeball.

"The examination, therefore, shows that the contents of the eyeball has been destroyed by a purulent inflammation (panophthalmitis), which has evidently spread from the anterior segment, from the perforated cornea, and has been succeeded by a plastic form of inflammation, with the production of many giant cells, and the proliferation of the endothelial cells of the tissue. This tissue is now going on to the formation of connective tissue, which is causing shrinking and distortion of the eyeball.

"There is a moderate neuritis, but a more marked perineuritis, and an infiltration of the ciliary nerves. This description is very like the usual findings in eyeballs which have been removed on account of sympathetic inflammation, and supports the view of Schirmer, that in cases of panophthalmitis which have caused sympathetic inflammation there is probably a mixed infection and a combination of plastic with the purulent inflammation."

I am indebted to Dr. Harold G. Goldberg, curator and pathologist to Wills Hospital, for the preparation of the specimens for microscopic study.

I believe that in some of these cases, i. e., Gunn's second case and Ahlström's case, where the original insult to the eye had been of the nature recognized as being prone to excite sympathetic inflammation and where the usual period of incubation had elapsed, it may safely be questioned whether the panophthalmitis should be held accountable. The absence of microscopic study in many of these cases makes it impossible to determine whether the cases were true instances of purulent panophthalmitis.

The microscopic findings in Schirmer's cases lead him to believe that in panophthalmitic eyes which excite sympathetic inflammation there is a mixed infection; that, besides the pus exciters, the bacteria of chronic fibrinous uveitis entered, survived, further developed, and then migrated to the other eye.

Ruge states that these cases present the evidence of a fibrinoplastic uveitis analogous to the findings in other exciting eyes, and that this chronic inflammation was the cause of the sympathetic inflammation.

Ahlström is not prepared to accept this explanation, as he believes that these changes are an expression of the termination of a purulent inflammation and is of the opinion that so long as our search for a specific microörganism of sympathetic ophthalmia is not crowned with success this question must remain unsettled.

Several theories have been advanced to explain the extreme rarity with which panophthalmitis and sympathetic inflammation are associated. The earliest was that of Leber and Deutschmann, who reasoned that the microörganisms were, in part, extruded with the pus when the globe perforates, and in a measure rendered harmless by the large quantities of pus. Gifford found in experimentally produced panophthalmitis, blocking of the lymphatics as the result of inflammation, and considered that this offered a mechanical obstruction to the migration of the organisms.

Schirmer's explanation is that it is due to the fact that panophthalmitic eyes contain only the microörganisms of suppuration, and that these are incapable of migration, and that where the mixed infection does occur the exciters of pus, being the more virulent, overcome and destroy the other organisms.

CONCLUSIONS.

1. While the occurrence is one of extreme rarity, eyes that present the clinical picture of panophthalmitis may excite sympathetic inflammation.

2. Such eyes, however, usually present microscopic changes analogous to those found in other exciting eyes.

3. With few exceptions in the cases in literature of sympathetic inflammation following phthisis bulbi, the eyes were of the class described by Fuchs as atrophied eyes.

4. Usually it is, clinically, the mild form of purulent uveitis which excites.

5. It is only after panophthalmitis of a virulent type that the resultant shrunken globe should be considered harmless.

6. Where from the nature of the infection the panophthalmitis has been of a low grade, or where as a result of treatment the inflammation has not assumed a virulent type, the eye should be considered a dangerous one and should be enucleated.

7. That in some cases where the purulent panophthalmitis has been considered the exciting cause the original injury or disease may have been responsible.

8. Whether the histologic findings in most panophthalmitic eyes are to be considered the terminal stage of the inflammation or the evidence of a mixed infection is still undecided, but the evidence points strongly to the correctness of the latter assumption.

9. Several factors contribute to render panophthalmitic eyes innoxious. When the globe perforates many of the microörganisms are extruded along with the pus, those retained within the globe becoming inactive through the enormous pus formation. This active pyogenesis, by blocking the posterior lymph spaces, serves to prevent migration of the toxic agents. Finally, the panophthalmitis may have been excited by organisms probably incapable of inducing sympathetic inflammation, such as staphylococci, streptococci and pneumococci.

DISCUSSION.

Dr. E. V. L. Brown, Chicago, said that Dr. Zentmayer did not make clear the significance of the giant cells; they are not supposed to have any relation to tuberculosis in sympathetic ophthalmia.

Dr. J. Hirschberg, Berlin, said that the giant cells are to be found in almost every clear case in which one eye has been perforated and there is sympathetic ophthalmia in the other. The nature of sympathetic ophthalmia is not known, but if we carefully examine the anatomic condition of the exciting eye we find a great similarity to tuberculosis, though not being tuberculosis; and if we carefully examine the ophthalmoscopic condition of the sympathized eye we find a very close resemblance to the syphilitic appearance, but it is not syphilitic.

Dr. William Zentmayer read Dr. Shumway's conclusions to show that the report speaks of the fact that the giant cells could not have been tuberculous because of other microscopic conditions associated with tuberculosis. As to Professor Hirschberg's remarks on the early signs of sympathetic trouble, Dr. Zentmayer said that they could not be determined in this case because the patient remained away from the hospital until an ophthalmoscopic examination was impossible.

ANAEROBIC CELLULITIS.*

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The various septic processes associated with the formation of gas in the tissues have always been of the greatest interest to surgeons, both on account of their comparative rarity and of the certainty and horrible rapidity with which, when untreated, they terminate life.

These morbid processes were observed and studied by even the oldest medical authors as Hippocrates and Ambrose Paré, but little was done toward the elucidation of their etiology or even the careful study of their symptomatology until the middle of the nineteenth century, when the French authors Chassaignac, Maisonneuve, Velpeau, and finally Salleron,[1] gave masterly descriptions, the latter's based on sixty-five cases observed during the Crimean War.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Arch. de Medic Milit, 1858, vol. xxi, p. 300.

Following this a certain amount of bacteriologic research was attempted, but nothing definite was accomplished until Pasteur,[2] in 1877, published his work, in which he described the *vibrion septique* and showed its relation to certain forms of septicemia in animals.

Next, in 1883, Trifaud[3] demonstrated a similar organism in some cases of fulminating gaseous gangrene, and in 1885 Chauveau and Arloing[4] established the identity of this germ with the *vibrion septique* of Pasteur.

Although Pasteur's *vibrion septique* has been shown to have been in all probability an impure culture of the bacillus of malignant edema, the majority of modern French authors still ascribe cases of gas infection to this germ, although A. Ricard[5] admits that other bacteria may cause the same clinical picture.

It remained for an American, William Welch, in 1891, to isolate the now generally accepted cause of gas infection, the *Bacillus aerogenes capsulatus,* or *Bacillus welchii* as it has been named in his honor. In 1892 Welch and Nuttall[6] reported a case in which Welch's bacillus was isolated from the body of a man dying from the rupture of an aortic aneurism.

E. Fraenkel[7] seems to have independently described the same bacillus and demonstrated its causal relation to gaseous septicemia.

In August, 1893, the first American case corresponding to the description of the French authors was reported by Graham, Steward and Baldwin,[8] in which, after an abortion, fatal emphysematous septicemia occurred, and the *Bacillus aerogenes capsulatus* was recovered in pure cultures from the blood after death.

In a later article by Welch and Flexner[9] twenty-three cases of various forms of infection by the gas bacillus were detailed, and since this time a rapidly increasing series of cases have been reported by various observers, quite a number of which have terminated in recovery under appropriate surgical treatment.

Bloodgood[10] gave a résumé of cases reported up to that date, omitting puerperal cases. From fourteen published cases and eight unpublished from Dr. Halsted's service at John's Hopkins he draws valuable conclusions as to diagnosis and treatment. Welch,[11] in a most complete article on morbid conditions caused by the *Bacillus aerogenes capsulatus,* discusses forty-six cases of gaseous cellulitis. Bloodgood[12] adds seven cases to those discussed in 1899.

To this list I am able to add six cases from literature and two from personal experience, making a total of sixty-one cases, not more than three of which can be questioned either as not being cellulitis, or because the bacteriologic findings are not sufficiently accurate.

I present here the cases which include all that I have been able to find in the literature at my command: Mann, [13] 1 case; Welch and Flexner,[9] 6; Martin, [14] 1; Bloodgood,[10] 6; Welch reports 2 cases of his own, unpublished, 1 unpublished of Flexner, and 3 unpublished of Carroll; E. Fraenkel,[7] 4; Passow,[15] 1; Dunham,[16] 5; Ferguson,[17] 1; Erdmann,[18] 1; Le Boutillier,[19] 1; Love and Cary,[20], 1; Norris,[21] 1; Hitschmann and Lindenthal,[22] 5; Thorndike,[23], 2; Muscatello,[24] 3; Guillemot,[25] 1; W. Southey Wright,[26] 1; Gildersleeve,[27] 1; B. F. Curtis,[28] 1; J. B. Roberts,[29] 1; George Heaton,[30] 1; L. M. Loeb,[31] 1; Jacobson,[32] 1; Cole,[33] 1; Gould,[34] 1; Rizzo,[35] 1; Sappington,[36] 2; Mann 1, quoted by Welch and Flexner,[9] p. 20 (not included in their 6).

Case 1.—Capt. W., aged 71, of Wayzata, Minn., came under my care March 16, 1903, for retention of urine due to stricture aggravated by exposure to cold.

History.—Before reaching Minneapolis, he had been relieved by the suprapubic aspiration of forty ounces of bloody urine. Perineal section was done and bladder drained. At the same time a small region of urinary extravasation around the suprapubic puncture was incised. In spite of this early incision an extensive spreading cellulitis of the abdominal wall was set up, which proved obstinate to the treatment instituted, of free incision and hot antiseptic packs. On the sixth day, a marked extension of the abdominal process toward the right side was noticed, and for the first time crepitation of the swollen tissues was observed. An incision was made five inches beyond the former ones, and a peculiar gelatinous condition of the subcutaneous tissues found, there being also considerable fluid and many bubbles of gas.

Bacteriologic Examination.—Cultures were taken at this time and site, which showed *Bacillus aerogenes capsulatus* in pure culture, while those from the older lesions showed also staphylococci.

Treatment.—Extensive parallel incisions were made through the whole swollen area and about two inches beyond in all directions down to the muscles. This striping was about two inches apart, and reached from the ninth rib above to below the line of the iliac crests below, and extended from the axillary line on the left to the backbone on the right. All these strips were separated as far as possible from underlying tissues, freely irrigated with H_2O_2 isolated by wet gauze strips and the whole covered by hot, wet, sterilized dressings.

Result.—Under this treatment, the septic process made no further progress, the sloughs gradually separated, leaving nothing between the bared muscles and the skin; and within six weeks the patient was practically well.

Remarks.—It may be of interest to note that there was no marked change in the patient's condition synchronous with the onset of the gas infection. His general condition at that time was extremely bad, with low delirium and a running pulse, while his temperature did not vary much from the 100 degree mark. The crepitation of the tissues at a point far distant from the extravasation cellulitis was the only diagnostic point. Apparently the gas infection began some days after the urinary extravasation and operation, as no gas was seen until the eighth day of disease, or the sixth day after the urethrotomy. The seat of gas cellulitis was quite distant from the urinary extravasation, and the gas bacillus was found there in pure culture, although the suprapubic cellulitis was undoubtedly an ordinary pus infection. The process certainly did not begin in the perineal urethrotomy wound, as this remained healthy throughout without swelling or sloughing.

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[32] Jacobson: Am. Med. Compend., Toledo, October, 1901, xvii, p. 603.
[33] Cole: Bull. Johns Hopkins Hosp., 1902, xiii,, p. 234.
[34] Gould: Annals of Surgery, October, 1903.
[35] Rizzo: Arch. Internat. de Chir., 1903, No. 2.
[36] Sappington: New York Med. Jour., 1904, p. 641.

Bacteriologic Report.—Cultures were made by Dr. S. M. White of the University of Minnesota, Pathological Department, with the following results: "Anaërobic cultures yield a short, thick bacillus, often with square ends, usually single, occasionally growing out into short chains, non-motile, retains stains by Gram, and stains by ordinary basic dyes. It does not form spores, at least not under ordinary conditions. It forms a heavy granular deposit in glucose broth within 24 hours, and grows in small round colonies in glucose agar shake preparations. Gas formed in one instance in glucose agar. Inoculated intravenously into rabbits which are then killed after 30 minutes and incubated 24 hours, an abundant formation of gas takes place, especially in the liver. Fifteen c.c. broth culture did not kill rabbits. No other bacteria are present in the cultures from new incisions. From older areas the gas bacillus was found mixed with staphylococci.

Case 2.—Mr. W., Jew, married, aged 27.

History.—While on duty as private watchman he was shot December 11, 1904, at 2 a. m., receiving a pistol wound in the left thigh. He was brought to the City Hospital at once, and the house surgeon thoroughly cleansed the wound and applied an antiseptic dressing. The patient rested well during the night, and when I first saw him on rounds in the morning he presented no disturbance of any sort. The first dressing was, therefore, left in place and the wound was not disturbed until the next morning, about 30 hours after the injury. At that time, he showed a rise of temperature to 100.5, with a pulse about 90, much restlessness and anxiety. He also stated that he had been unable to sleep during the night on account of pain about his wound. He was taken to the dressing room and the wound was examined. There was found a bullet wound about one inch below the center of Poupart's ligament, around which there was some slight swelling and dusky redness. A large sterile bullet probe was introduced and a few bubbles of gas escaped from the deeper part of the wound. He was at once ordered to the operating room, but as another operation was in progress, a delay of about two hours was necessary. During this time some of his friends removed him to a private hospital, where he passed into the hands of another surgeon, who later in the day operated, making simply a counter opening for drainage and removal of the bullet; there was no attempt at free incisions through the infiltrated area. After operation his temperature was 101 degrees, pulse 90, respiration 28, and he complained of thirst, severe pain in his hip and thigh, and was apparently unable to sleep. He was very pale and weak, too weak to be restless. On December 13, his condition became gradually worse. He became weaker, dying on December 15 at 2 a. m., seemingly in a state of profound toxemia.

Appearance of Body.—For an area of four inches around the wound of entrance the skin was brawny red, congested and tense, and from about five inches above Poupart's ligament all along down the leg and to the toes the subcutaneous tissue became emphysematous, gas being distinctly palpable, but there was no discoloration of the skin. From the incisions for drainage came a bloody serous discharge and much gas of a foul cooked blood and hydrogen disulphid odor. Streptococci were found in fresh smears and also an unknown bacillus.

Autopsy.—From the records of the Pathological Laboratory of the University of Minnesota, by the courtesy of Professor F. F. Wesbrook.

No postmortem was permitted, but we were allowed to obtain material for bacteriologic examination. The left leg was considerably swollen and emphysematous throughout, this emphysema extending for a distance of about three inches above Poupart's ligament. There were three openings. The first was situated on the anterior aspect of the limb about one inch below the center of Poupart's ligament, and was somewhat irregular, evidently the wound of entrance. The second was situated immediately over the region of the great trochanter. The third was situated on the outer surface of the thigh about the junction of the middle and lower thirds. The two latter were apparently for drainage. From all three, a serous fluid with bubbles of gas could be expressed. Fluid for bacteriologic examination was taken from three sources: (1) the wound of entrance; (2) the lower drainage opening; (3) an opening made in the anterior surface of the thigh about the center of the middle line.

Bacteriologic Findings.—(Material obtained nine hours after death.) Direct smears gave the following results:

1. From the wound of entrance a mixture of streptococci and a large bacillus, roundish ends, apparently with a capsule was taken.

2. From the lower drainage wound and opening made in anterior surface of thigh a pure culture of a bacillus resembling morphologically that found in wound of entrance was isolated.

Cultures.—Sowings were made into glucose broth, on glucose agar, blood serum and litmus lactose agar. These were grown both aërobically and anaërobically. These grown aërobically gave an apparently pure culture of streptococcus pyogenes from wound of entrance. Inoculations from the other two sources showed no growth. Those grown anaërobically showed a spore-bearing bacillus easily stained with simple anilin dyes and retaining the stain by Gram's. The organisms resemble to a certain extent *B. anthracis,* but are somewhat stouter and are more variable in length. Some appear as diplococci, others are chains of various lengths, as many as fifteen elements being observed in one chain. The ends are roundish, but in the chains they are more or less square. They produce a diffuse cloudiness with a slight sediment in broth. On slant agar, the colonies are difficult to describe, being scarcely visible to the naked eye. Glucose agar is fermented, the amount of gas being apparently great. Litmus lactose agar is also fermented and with an acid reaction. The organism killed a guinea pig in forty-eight hours. Two rabbits, animal experiments Nos 318 and 358, showed apparently no effect. A rabbit, animal experiment No. 357, inoculated intravenously and killed within five minutes, after being placed in incubator for eighteen hours, was greatly distended. Postmortem showed gas bubbles abundant in the subcutaneous tissue and muscles of the belly wall. The same phenomena were observed in the liver, spleen, kidney and heart wall, but were most pronounced in the liver. Smears from each of these organs and from the heart's blood showed the organism above described in great abundance. In smears of the heart's blood, capsules were demonstrable. Inoculations into sugar media with heart's blood gave the same results as those obtained from original material.

Bacteriologic Diagnosis.—*B. aerogenes capsulatus* (Welch).

Quoting largely from Welch and Bloodgood, and adding the eight new cases, the points of interest can be summarized as follows: The sex of the patients shows the usual preponderance of males in all diseases largely dependent on traumatism; 48 males to 11 females, with sex not given in two cases. In over 80 per cent. one of the extremities was the seat of the disease, and in all but seven, traumatism or surgery preceded the onset of the disease. The 61 injuries are itemized thus:

Compound fractures	23
Bullet and shot wounds	7
Infusion of salt solution	3
Hypodermic injections	2
Ligation of artery for aneurism	4
External urethrotomy	3
Submaxillary abscess	2
Traumatic rupture of rectum	1
Appendectomy	1

Prostatic abscess	1
Herniotomy	1
Nephrectomy	1
Severe lacerated wounds	2
Spontaneous gas gangrene	4
Spontaneous general emphysema	2
After erysipelas	1
Unexplained	3

The mortality in the 61 cases was a little over 55 per cent. Of 18 compound fractures 8 patients died and 10 recovered after amputation. Of 7 bullet and shot wounds 4 patients died and 3 recovered with and 2 without amputation. Of 3 patients after external urethrotomy 2 died and 1 recovered. This corresponds closely to the general mortality of the whole 61 cases and excluding several of Welch's patients dying of pus infection and tetanus after apparent recovery from gas infection, the average death rate in surgical cases would seem to be about 50 per cent.

ETIOLOGY.

In regard to the etiology of gas infection, Welch has shown that the bacillus is very widely distributed in nature, being especially common in soil, hospital dust and intestinal contents, hence its more frequent occurrence in compound fractures, dirty wounds and operations about the gut and perineum. Its occurrence after operations on the urinary tract, such as urethrotomy and nephrectomy, must be explained as due to accidental contamination by gut contents as the bacillus has not as yet been found in the urine before death. Welch and Bloodgood, however, both seem to favor the probability of the bacteria being carried to the seat of infection in some cases by the blood, as Gwyn[37] has demonstrated their presence in the blood of the living patient.

According to Welch, it is extremely improbable that clinical gas infection is due to other germs than the *Bacillus aerogenes capsulatus*. The bacillus of malignant edema has been reported as causing fatal infection in man, but without gas production. A few cases have been ascribed to the colon bacillus, as case reported by Rizzo.[35] and to the *Bacillus proteus;* but the reports do not show that either anaërobic methods of culture or the inoculation of animals were attempted, so the proof of diagnosis is insufficient, especially in view of Lanier's work. The latter has demonstrated an aërobic form of the gas bacillus which closely resembles the colon bacillus and might be easily mistaken for it.

Certain German workers have made extensive studies which tend to show that the gas bacillus is at least closely related to the bacillus of butyric acid fermentation, so it is probable that the last word has not been spoken in regard to the bacteriology of this class of diseases.

SYMPTOMATOLOGY.

Not much has been added to the descriptions of the older authors, of whom Maissonneuve and Pirogoff give especially full details. The latter,[38] in 1864, described two varieties of gaseous gangrene: First, cases in which gas forms within forty-eight hours and the tissues become gangrenous and melt away without local inflammatory reaction, while the patient becomes early collapsed, anxious, sweating and dies within a few days; and, second, cases in which the local reaction is marked, the course of the disease slower, and in which there is marked fever and the other ordinary symptoms of severe infection. The symptoms noted in the cases listed above have been quite varied and, on the whole, have not been striking, the one constant and diagnostic sign having been the presence of gas in the tissues or in the wound secretions, occurring from the eighth hour to the sixth day. Other symptoms noted have been rarely a chill, regularly a fever ranging from 100 to 104 degrees in the different cases, rapid running pulse, delirium in many cases; locally gas in the tissues surrounding the point of entrance, gas in wound secretions, fetid or stinking odor to discharge and incised tissues, frothy, brownish discharge of horrible odor, dusky redness of the skin followed in some cases by the ordinary color changes of gangrene; general emphysema of extensive areas, sometimes of whole body, explosive escape of gas from tissues when incised, and immense production of gas in all parts of the cadaver after death.

There seems to be much difference of opinion as to whether pure infection by the gas bacillus is more malignant than a mixed infection. Muscatello[24] and Gangitano believe that the mixed infections are the most virulent, and even claim that the gas bacillus is unable to exert any pathologic action on healthy tissues; while Hitschmann and Lindenthal take exactly the opposite view, stating that the pure infections are most virulent; and Welch, while admitting extreme virulence in certain cases of mixed as well as in pure infections, positively contradicts, from experimental experience, the statement that the gas bacillus can not attack healthy tissues. A study of some of the recent cases would suggest that, like tetanus, the relative virulence of this disease in any given case may be indicated by its early development, that is, that cases developing gas symptoms slowly should give the better prognosis.

DIAGNOSIS.

The one diagnostic sign is the presence of gas in the tissues and the presence of the bacillus in smear preparations from the wound, in fact, the latter should be given precedence, as one or two observations establish the fact that this germ may live for some time in a wound without producing gas.

All suspected wounds, therefore, should be subjected to this amount at least of bacteriologic study.

TREATMENT.

All contaminated wounds should be thoroughly cleansed and disinfected, best by carbolic acid, followed by alcohol; although this did not prevent gas infection in one case reported by Bloodgood. As soon as diagnosis is made, by microscope or clinically, the seat of infection should be laid widely open by multiple incisions, and then treated by continuous bath or by irrigation, hydrogen peroxid and wet dressings. When the lesion is confined to an extremity, the consensus of opinion seems to favor early amputation, although the results of conservative treatment seem to indicate that many limbs may be saved by its adoption. The recovery in my case of gas cellulitis in a not robust man of 71, the treatment being merely the very thorough carrying out of the ordinary treatment of any diffuse cellulitis, would suggest that the rather difficult treatment by continuous bath advocated by Blodgood may be dispensed with in some cases. How much the use of H_2O_2 can prevent the growth of an anaërobic bacterium is a matter for speculation; theoretically, it would be indicated locally in this disease, as in tetanus.

CONCLUSIONS.

1. Gas bacillus infection, while not a common disease, demands the attention of all surgeons because, while regularly fatal when untreated, its early diagnosis is

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[37] Bull. Johns Hopkins Hospital, 1889, p. 134.

[38] Pirogoff: Grundzuege de allgem. Kriegschirurgie, p. 867-1006, Leipzig.

easy and its successful treatment requires only the prompt and thorough application of well-established surgical principles.

2. Either removal of entire disease by amputation or thorough exposure of its site to air and drainage seem the essentials to be attained.

3. Free incisions, the continuous bath, or irrigation and wet dressings, have afforded the best results, and theoretically hydrogen peroxid is indicated.

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Special Article

IMMUNITY.

CHAPTER XXII (Concluded).

TYPHOID FEVER.

Proliferation of Endothelial Cells.

Mallory has given a histologic explanation of certain gross and microscopic changes which characterize typhoid fever, the essential feature of which is a massive endothelial proliferation in the lymphoid organs (Peyer's patches, solitary follicles, mesenteric lymph glands, spleen and bone marrow). It is thought that this process explains in part the enlargement of the lymphoid organs. The cells are phagocytic, and especially in the lymphoid tissue of the intestines and in the mesenteric lymph glands, englobe and destroy the lymphoid cells on a large scale. A similar proliferation of the endothelium of the perivascular lymph spaces and vessels occurs. The proliferated masses undergo necroses, the lymph vessels become occluded and the process, accompanied by fibrin formation, extends to adjacent blood vessels, causing thrombosis of the latter. The death and sloughing of the lymphoid patches is the direct result of this thrombosis, the process being aided by mixed infection with the intestinal bacteria.

Endothelial proliferation in the spleen and bone marrow is of a similar order, and in these organs the cells show their phagocytic properties by ingesting large numbers of erythrocytes. Emboli are formed in the hepatic lobules by the endothelial cells, which are carried from the spleen to the liver through to the portal circulation, a process which results in the small islands of necrosis (focal necrosis) so often found in typhoid livers (Mallory.) It seems probable that the endothelial proliferation which has been described is due to the rather mild but prolonged action of the dissolved toxic constituents of the typhoid bacillus; the condition is that of an inflammatory hyperplasia. The greatest changes take place in the organs (lymphoid) which contain the bacilli most constantly and in the greatest numbers. It is here that the toxic substance may be present in greatest concentration, as a consequence of the continual solution of the organisms. It has been suggested that the hypoleucocytosis of typhoid fever is due to the destruction of the lymphocytes in the lymphoid organs by the endothelial phagocytes.

Granular and fatty degenerations of the parenchymatous organs occur, but these changes are common to many infectious diseases, the mechanism by which they are produced being unknown.

Mixed Infections.

The conditions in the intestinal tract would seem to favor mixed infections, especially by the colon bacillus and streptococcus, and the primary infection probably decreases the resistance to secondary invasion. The rôle of the colon bacillus in typhoid fever is perhaps not definitely established, although it has been found in the circulation, in abscesses, and in the urine in cases of cystitis accompanying the disease. The typhoid and colon bacilli grow well together. A mixed general infection with the streptococcus causes a grave septic condition characterized by an irregular temperature curve. This condition may be discovered by blood cultures. It is thought that the streptococcus does not increase the toxicity of the typhoid bacillus, the result being rather a summation of the intoxication of the two infections. Post-typhoidal suppurations are often due to the streptococcus and in many of the metastatic complications (parotitis, pleurisy, peritonitis, meningitis, otitis media) streptococci and staphylococci have been found. Pneumococcus pneumonia not infrequently complicates typhoid fever. A combined infection of typhoid and malaria is said to occur in the tropics; the complication is grave. Typhoid and diphtheria may occur together, and typhoid may be superimposed on acute tuberculosis.

Immunity and Susceptibility.

The period of greatest susceptibility to typhoid is found from the fifteenth to the twenty-fifth years. The resistance of infants and children is not satisfactorily explained. A certain amount of resistance inherited from the mother may persist for some years after birth. It is known that antibodies may pass from the mother to the fetus through the placenta. In very early life the tissues may respond more energetically to incipient infection by the rapid formation of typhoid antibodies, or the phagocytic cells may be more active. The conditions which render older people less susceptible are no better understood. A loss of suitable receptors may have occurred so that the toxic constituents of the bacilli find no anchorage in the body, or the affinity between the receptors and the toxic constituents may have become less. The individual during the course of years may have been gradually immunized by the entrance of nonpathogenic quantities of the bacilli into the circulation. That resistance to typhoid infection is decreased by low nutrition and overwork is a long-known fact.

Natural and Acquired Immunity.

Natural immunity, to a certain degree, is dependent on the hydrochloric acid content of the gastric juice, and it is reasonable to believe that suppression or an insufficient amount of hydrochloric acid may favor the passage of living bacilli to the intestines. The typhoid bacillus is more resistant to the gastric secretion than the vibrio of cholera. Normal human serum is rather strongly bactericidal for the typhoid bacillus. Metchnikoff ascribes natural immunity to the action of the microphages.

The immunity which follows an attack of typhoid fever is generally of long duration, but second attacks occur with some frequency. It has been noted that limited communities which have experienced an epidemic may remain relatively free from the disease over a period of some years, although neighboring districts are attacked. All the susceptible persons having had the disease, a state of temporary regional immunity is created. Acquired immunity of this type is characterized by the appearance of bactericidal amboceptors, agglutinins and typhoid precipitins in the serum of the individual. It is commonly believed that recovery is due to the increase of the bactericidal power of the body fluids, which becomes most marked during the later period of the disease or during convalescence. It seems certain, however, that the new resistance persists beyond the time when the bactericidal power of the serum has returned to normal, which may take place in from one to several years. The bactericidal power sinks rapidly during and following convalescence. However, the general principle is well established that, although the antibodies may have disappeared entirely, they are formed anew much more readily as a consequence of an old infection. This phenomenon was demonstrated in one instance by Neisser and Shiga in relation to typhoid. The tissue cells have, so to say, been trained, and are stimulated by a few micro-organisms to produce such a quantity of bactericidal amboceptors, that the incipient infection is overcome. It is, of course, understood that the amboceptors require the aid of complement in killing the micro-organisms. A second attack of typhoid fever usually is mild.

Metchnikeff does not deny that the amboceptors (fixators) play an important part in acquired immunity, but claims that the new resistance depends chiefly on an increase in the phagocytic power of the microphages (polymorphnuclear leucocytes). This is not clear from the clinical standpoint because of the hypoleucocytosis which is somewhat characteristic of typhoid—a hypoleucocytosis caused chiefly by a disappearance of the microphages. It has been suggested that our conclusions as to hypoleucocytosis are based on examination of the peripheral blood, whereas the mesenteric vessels may show hyperleucocytosis. Mallory, however, found a striking absence of microphages even in the intestinal vessels. Concerning a theory that the hyperplasia of the lymphoid organs serves as a substitute for the hyperleucocytosis, we may recall the findings of Mallory that this hyperplasia is chiefly one of endothelial cells. The importance of these endothelial cells for the destruction of typhoid bacilli needs further investigation.

Prophylaxis.

Prophylaxis should begin with the thorough disinfection of the stools and urine of typhoid patients, and should continue until they no longer contain typhoid bacilli. Strictly speaking, it is not in conformity with good hygiene to discharge a patient until bacteriologic examination of stools and urine show them to be free from the organisms. It would be difficult to carry out this rigid precaution under all conditions of practice, but at all events the stools and urine may be disinfected for a reasonable period, say throughout convalescence. There is no sufficient reason for the neglect of the bacteriologic examination in hospital practice. There is a growing sentiment that typhoid patients in hospitals should be isolated in wards or rooms in which there is a fixed routine for the disposal of infectious materials—urine stools and sputum. Soiled linen, the bath water of typhoid patients, the remnants of food and drink, and the eating utensils should be disinfected before removal from the room. Nurses or attendants should not eat or drink in typhoid rooms.

Hexamethylenamine.

The value of hexamethylenamine in causing the disappearance of bacilli from the urine is now well known, and the advisability of using the drug as a routine measure for public safety is worthy of consideration. The room should be kept free from flies and eventually it should be disinfected, preferably by formalin. During an epidemic, in case the water supply of a community is susceptible to contamination, all water used for drinking, washing of vegetables and eating utensils should be boiled, and that used for general cleaning may be otherwise disinfected. The possibility of dust infection of a house should not be disregarded.

Vaccination.

There are two methods of specific prophylaxis against typhoid: 1, The injection of antityphoid immune serum; 2, preventive inoculation with killed cultures of the bacilli. Antityphoid serum confers a fairly strong and immediate immunity which, however, is of short duration, because of the rapid elimination of the serum. Its use as a general preventive, therefore, is not advocated.

Wright's Method and Results.

Wright has been the most influential factor in showing the utility of protective inoculations against typhoid. His first experimental work was published in 1896. Since that time the inoculations have been carried on extensively in British regiments in India and South Africa. In the statistics which have been collected the occurrence of typhoid among the individuals inoculated was one-half that among the uninoculated. The inoculations reduced the mortality of the disease by one-half. The protection, so far as known, lasts for two or more years, although in some instances infection has occurred in from three to six months after vaccination.

The Vaccine.

The methods of preparation of the vaccine are elaborate in order to insure sterility and standardization. Cultures of the bacillus are grown in nutrient broth for from twenty-four to forty-eight hours, and then sterilized at 60 C. The contents of several flasks are mixed in order to obtain a uniform distribution of organisms, and standardization is then accomplished by a convenient method of estimating the number of bacilli in a cubic centimeter of the vaccine. The purity of the vaccine is insured by bacteriologic tests, and for preservation carbolic acid or lysol is added.

Effects.

Wright has abandoned his original method of giving a single injection and now recommends two moderate doses, which are given from eight to fourteen days apart. The first dose includes a quantity of vaccine which contains from 750,000,000 to 1,000,000,000 of bacilli, the second 1,500,000,000 to 2,000,000,000. Wright finds that "the inoculation of these quanta induces an ample elaboration of antitropic substances (antibodies) without producing any severe constitutional reaction." We need not here enter into a consideration of Wright's nomenclature. The inoculations increase the bactericidal and agglutinating powers of the serum; it is concluded that an increased resistance to typhoid intoxication is established because the second injection causes milder symptoms than the first and the phagocytic powers of the leucocytes is raised, because of an increase in the "opsonic antitropins" (Chapter XVI). The curve of the antibodies is like that obtained in general by active immunization with bacteria, toxins or other substances. Immediately following the inoculation there is a decrease even of the normal antibodies in the individual's serum. This "negative phase" lasts for from one to several days and corresponds to a period of increased susceptibility. It is quickly followed by a positive phase in which the antibodies and correspondingly the resistance increase rapidly. When very small doses are administered the positive phase may be recognized after twenty-four hours (Wright). Large doses cause a prolonged negative phase and are to be avoided.

Local Reactions.

General Reaction.

Following injection, "the local symptoms first make themselves felt after an interval of two or three hours. The effects then seen are the development of a red blush and more or less serous exudation at the site of inoculation, followed by some lymphangitis along the lymphatics which lead, according as the vaccine has been inoculated above or below the middle line of the trunk, in the direction of the glands of the axillæ or of the groin. . . . Even severe inflammation has never led on to suppuration." The exudate is somewhat hemorrhagic, and the pain moderate to severe, but not of long duration. Pain is relieved by hot application or inunction with a carbolic acid ointment which contains ergot. With the technic as recommended at present, "the constitutional symptoms are limited to some headache and to two or three hours of real malaise. . . . The next day his temperature comes down to normal, and he feels comparatively well except in respect to pain at the seat of inoculation."

Conditions for Vaccination.

The statistics warrant the adoption of antityphoid inoculation or vaccination under certain conditions. Its utility in the army has been demonstrated, and probably will be carried out in future campaigns among educated nations. Typhoid never has been a world pest, hence the occasion for universal vaccination does not exist, but in the presence of epidemic so frequently seen in American cities it will be impossible to avoid the consideration of vaccination as a means of protecting the uninfected. The question may be worthy of consideration also in those cities in which typhoid is so extensive as to be called endemic. The procedure is absolutely safe and the results speak for a high grade of effectiveness.

Mixed Active and Passive Immunizations.

It has been suggested that the "negative phase" described above is a source of danger in the presence of an epidemic. The phase is of so short duration, however, that the danger is minimal. It seems probable that the practice of mixed active and passive immunization would eliminate it entirely. This is accomplished by the combined injection of antityphoid serum and vaccine. The serum assures a positive phase from the start, and before this has subsided, that induced by the vaccine is established. When specific serum is mixed with the vaccine the local action is said to be less severe.

The products of autodigestion of typhoid cultures have been suggested as suitable vaccine (Neisser and Shiga). The local reaction is said to be mild, and the body reacts by the formation of bactericidal amboceptors and agglutinins.

Therapy.
Serum

Bactericidal serums obtained by the immunization of horses with typhoid bacilli have not shown distinct curative properties. This subject was discussed in its theoretical aspects in Chapter XVIII. Chantemesse immunizes horses with a typhoid "toxin" which is prepared by growing the organism in a liquid culture which contains an emulsion of splenic tissue. One cubic centimeter of this toxin will kill a guinea-pig, a dose which in comparison with other bacterial toxins is very weak. Chantemesse has used his antitoxic serum in the treatment in more than 500 cases, reporting a mortality of about 6 per cent., whereas that among untreated patients was from 10 per cent. to 12 per cent. Although these figures indicate some value for the serum it has had little trial outside of France.

McFadyan and Rowland immunize horses with extracts of typhoid bacilli, which have been ground up while they were kept in a brittle state by the temperature of liquid air. Although antitoxic and bactericidal properties are claimed for the serum, there is no conclusive evidence that it differs from a bactericidal serum prepared in the ordinary way.

Preparation of Jez.

Jez produces a high degree of immunity in rabbits by artificial immunization with the typhoid bacillus, then prepares an extract from the spleen, bone marrow, brain, etc., of the immunized animals. The extract is administered by mouth. Jez justifies this method, from the fact that the lymphoid organs have been shown to form typhoid antibodies (Wasserman). From the clinic of Eichorst and some others favorable reports concerning the remedy have been published. It has had no extensive use. The preparation is made by the Serum Institute of Berne (Switzerland) and is expensive.

The suggestion made by Fraenkel, that typhoid patients be treated by subcutaneous injections of small quantities of killed typhoid bacilli in order to hasten the formation of antibodies has been kept alive through the "typhoin" of Petruschky, but is yet without much practical trial.

Agglutination.

The principles and technic of the agglutination test were described in Chapters X and XI. It is sufficiently well known at the present time that the test is a strong corroborative diagnostic sign of typhoid fever, to which there are, however, certain limitations and sources of error. The serum commonly becomes agglutinative on from the seventh to the tenth day, rarely as early as the second or third, and as late as from the twentieth to the fortieth day. The power is highest during convalescence, when it may agglutinate in dilutions as high as from 1 to 5,000 or higher, and from that time sinks gradually. An agglutinating power of from 1 to 160 has often been found at eight months, and of from 1 to 50 after from seven and one-half to eleven years; but the latter duration is not the rule. In performing the test a serum dilution of not less than 1 to 40, or 1 to 50 should be observed as previously set forth.

The following points are to be borne in mind: Typhoid fever occasionally runs its course without the formation of agglutinins; the reaction may mysteriously be absent one day to recur a few days later, from which the importance of repeated tests becomes manifest in case a first test was negative; rather high agglutinating power for the typhoid bacillus occasionally develops in other infections, as pneumonia, meningitis, icterus, Weil's disease, etc.; the possibility of group agglutination, for the positive elimination of which control tests with related organisms may be demanded.

In case negative results are obtained in a suspicious case the reactions should then be tried with the paratyphoid bacilli.

The test of the bactericidal powers of the serum has been recommended as a substitute for the agglutination reaction, but the technic is so much more complicated that the method will probably not come into general use.

For diagnosis previous to the formation of agglutinins blood cultures should be made as described in a preceding paragraph.

Clinical Reports

INTESTINAL INDIGESTION IN AN INFANT FROM HAM RIND.

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KALAMAZOO, MICH.

Patient.—A child, aged 2 years, a patient of Dr. Della Pierce, had complained of vomiting, abdominal pains and diarrhea for two days.

History.—There was a history of an intestinal indigestion and slight fever of several days' duration. The mother stated that during this time the child passed large pieces of "curd" in the stools.

Course.—The symptoms abated with treatment, and several days later the child passed what the mother called a long, green worm. Recovery was rapid. The so-called worm certainly resembled one on gross inspection. It measured 8 inches and was flat, one side presenting a white curd-like appearance; the other a dull, green, slimy appearance. On careful examination, aided by the microscope and KOH, this substance proved to be the rind of ham or bacon, only slightly attacked by the digestive juices. This is a good example of what is to be expected in babies who are allowed to eat everything.

A CASE OF HYDROCEPHALUS AND ACRANIA.

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The extreme rarity of the occurrence should justify the report of the following case of acrania:

History of Mother.—The mother, Mrs. H. G., aged 23, primipara, has never in her life been sick; she also enjoyed perfect health during the entire term of pregnancy. Delivery occurred on July 20, 1905, about a week later than expected. Fetal movements for the last week had been very feeble, if noticeable at all. On examination the day before labor, fetal heart sounds could not be heard, and palpation of the abdomen failed to elicit fetal movements. The patient, however, was in excellent health.

Labor.—Labor pains set in abruptly and were almost from the start continuous or with very brief intermissions. About three hours after beginning of labor the vagina was found to be filled by a "bag of waters" of unusually large size, through which the presenting part could not be palpated. Puncture of the bag effected during the height of a uterine contraction was followed by a discharge of a somewhat soft and anemic brain substance in considerable amount. This was followed by a very forcible expulsion of about a pint of serum. (The explosion was so forceful as to cause the liquid to spurt over my head and on to the wall behind me, a distance of several feet.) The fetus presented in L. O. A. position.

Description of Fetus.—The body and the face were perfectly developed. The anterior portion of the scalp was normal and thinly covered with hair. Posteriorly, from the level of the *foramen magnum* and continuous with the integument of the neck to the vertex of the skull, there extended, instead of integument, a thin, smooth, translucid and elastic membrane resembling a cyst sac. The occipital bone, both parietal bones and all of the vertical portion of the frontal bone, save an edge about three-eighths of an inch high, were lacking. In other words, the skull cap was entirely absent. The base of the skull was perfectly developed. An accumulation of serum had evidently occurred in the occipital region, behind the brain, and was covered in by the membrane, which, in this situation, was found to have taken the place of normal scalp tissue.

Remarks.—The etiology of this malformation is obscure. Delafield and Prudden[1] state it as probable that the accumulation of fluid is secondary to a primary partial anencephalia. Ziegler[2] quotes on the subject various and from each other widely differing opinions. By some acrania is regarded as due to an abnormal accumulation of fluid in the cerebral vesicles occurring before the fourth fetal month. Others oppose this view and believe the condition to be caused by a pressure from without exerted by the cephalic cap of the amnion, lying snugly against the cephalic bend and thus hindering the development of the cranium. Still another opinion looks for the cause in an abnormally sharp curvature of the body of the embryo, occurring where the cephalic end of the embryo has elongated abnormally, or the cephalic envelope has lagged behind in development. This sharp curvature would prevent the change of the medullary plate into the neural canal or cause the already formed canal to be destroyed. Ziegler remarks that many and various causes might very likely be in operation, and that in some instances the malformation must probably be ascribed to a primary agenesia already determined in the germ.

New Instrument

A NEW SEPTOTOME.*

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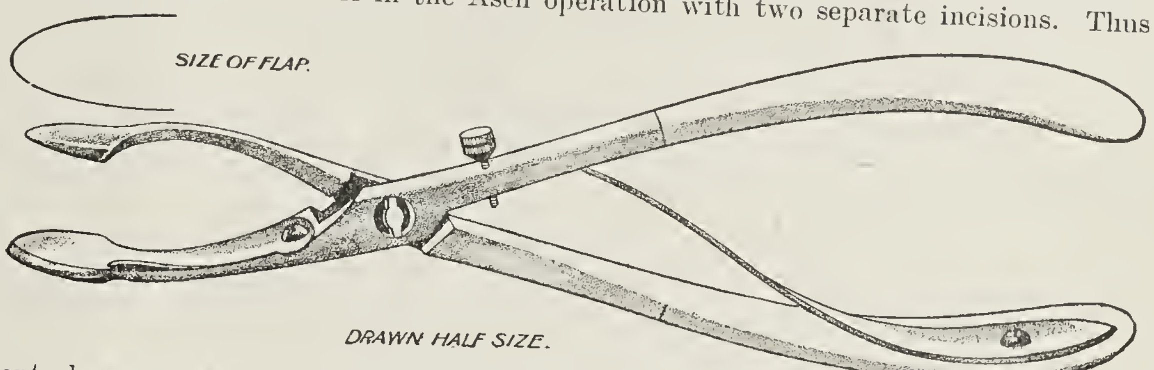
This instrument is designed to be used as a substitute for the knife or scissors in cases of uncomplicated deviation of the cartilaginous septum. It cuts out of the cartilaginous portion of the septum a more or less tongue-shaped flap, and it accomplishes with a single incision at least as much as is done in the Asch operation with two separate incisions. Thus is overcome the necessity of removing one set of scissors to substitute another, which may prove a serious drawback in case one is operating on a nervous patient under a local anesthetic.



In the Asch operation, the result of the incisions is to create four small, triangular segments with their points in apposition, which means that we have four possible points of sloughing. With the septotome but a single flap is cut, and that having what many rhinologists consider the ideal shape of the flap for this operation; the chances for sloughing, therefore, ought to be decidedly lessened.

By means of a screw, the tongue-shaped flap may be shortened to any desired length; and the instrument is so constructed that the flap, when cut, is bent well to the other side, thus converting the two stages of the Asch operation into one. Moreover, I think a decided advantage is gained over the Asch instrument as regards the introduction of my septotome. There is no sharp point to become engaged in the tissues, as it is being introduced. It has a large and a small jaw, the former for the free side and the latter for the side obstructed. Even though one side of the nose be completely obstructed, the shape and size of the smaller jaw is such that it may be wedged in without any laceration of the tissues.

The object of the flat band of steel, which is attached to the larger jaw of the instrument, is that it will act as a spring and force back into the median line the flap which has been cut out of the septum, a very important provision to prevent its being caught by the instrument as it is being withdrawn.

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[1] Pathological Anatomy and Histology, fourth edition.

* Presented at Eleventh Annual Meeting of the Laryngological, Rhinological and Otological Society, Boston, 1905.

[2] General Pathology, American edition.

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MEDICAL EDUCATION IN THE UNITED STATES.

The present issue of The Journal contains statistics regarding medical education in the United States for the year ending June 30, 1905. The data published herein were obtained directly from the college authorities, from the annual announcements, and from other sources, and especial care has been taken to insure correctness in every instance. We have had the co-operation of practically all the colleges in this work, and we take this opportunity of extending our thanks to those who assisted us in gathering the statistics.

A careful study of the tables will show that medical education has undergone many changes during the past year. The standards of preparation of study and of graduation have been raised considerably, showing that there is a disposition on the part of all concerned to elevate the standard of the profession by bringing into it men and women who are better prepared to practice medicine, and who will be a credit to the profession in every way. There has been a distinct gain in the entrance requirements during the past two or three years. This change for the better is due, in part, to a few individual colleges, but largely it is the result of concerted action on the part of several organizations which have it in their power to promulgate and enforce rules and regulations for the government of colleges. The state examining boards, in particular, have exercised a most wholesome influence by raising the requirements and by taking an active part in the regulation of preliminary or preparatory education.

Number of Medical Students.—The total number of medical students (matriculants) in the United States for the year ending June 30, 1905, was 26,147, a decrease of 1,995 below the year 1904. Of this number 24,119 were in attendance at the regular schools, 1,104 at the homeopathic, 578 at the eclectic, 114 at the physiomedical, and 232 at the nondescript (unclassifiable) school. The attendance at the regular schools shows a slight increase—457—over that of last year, and a decrease—801—below 1903, and also a decrease —759—below 1902. In the homeopathic schools, there was a decrease of 205 below the attendance of 1904, 394 below 1903. In fact, the attendance at the homeopathic schools has been diminishing steadily since 1900. It was less last year than it has ever been since 1880. Up to the present year, the eclectic schools showed an increase in attendance since 1900. This year, however, the attendance fell to 578, 436 less than for 1904, and the lowest attendance since 1880. The attendance at the physiomedical schools has also fallen off a trifle. In 1904 the attendance at these three schools was 129. In 1905 it was 114.

Table of Medical College Attendance.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med and Nondescript.	Total.
1880......	9,776	1,220	830	...	11,826
1890......	13,521	1,164	719	...	15,404
1900......	22,710	1,909	552	...	25,171
1901......	23,846	1,683	664	224	26,417
1902......	24,878	1,617	765	241	27,501
1903......	24,930	1,498	848	339	27,615
1904......	23,662	1,309	1,014	357	28,142
1905......	24,119	1,104	578	346	26,147

These figures tend to show that the attendance at the regular schools is increasing at the expense of that at the sectarian schools. It is evident that the raising of the entrance requirements has been a factor in the lessening of the number of matriculants.

Graduates.—The total number of graduates for the year ending June 30, 1905, was 5,606, a decrease of 141 below the preceding year and 92 below the year 1903. The lowest number of graduates since 1900 was 4,999, in 1902; the highest number was 5,747, in 1904. For the year just closed the percentage of graduates to matriculants was 21.4. For 1904 it was 30.3; for 1903 it was 22.8. The decrease in the number of graduates from the regular colleges in 1905 was 64; from the homeopathic colleges, 95. The number of graduates from the eclectic colleges is 7 greater than it was last year, and 9 in the case of the unclassified college. The graduates of 1905 from the homeopathic colleges have been fewer in number than in any year since 1880. The electic schools, on the other hand, graduated more students in 1905 than in any year since 1890.

Table of Medical College Graduates.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880......	2,673	380	188	..	3,241
1890......	3,853	380	221	..	4,454
1900......	4,715	413	86	..	5,214
1901......	4,879	387	148	..	5,444
1902......	4,498	336	138	27	4,999
1903......	5,088	420	149	41	5,698
1904......	5,190	371	146	40	5,747
1905......	5,126	276	153	51	5,606

Women in Medicine.—During the past year 1,073 women were engaged in the study of medicine—4.1 per cent of the total number of medical students, and 219 graduated—4 per cent. of the total number of graduates. In 1904 there were 1,129 women students, and 244 graduated. The proportion of female and male students was practically the same as last year. Of the total number of matriculants, only 221 (20.6 per cent.) were in attendance at the three colleges for women, and 54 (24.5 per cent.) graduated from them. The remaining number matriculated in and graduated from coeducational colleges.

Number of Colleges.—During the past year a number of colleges united, and several became extinct, so that at the present time there are 157 medical colleges in the United States (including the Philippine Islands). The medical department of the University of Porto Rico has not yet been organized and will not be for some time, but was included in our last year's statistics as an active college. Of the total number of colleges, 126 are regular, 18 homeopathic, 9 eclectic, 3 physiomedical, and 1 unclassified. During the year 2 homeopathic colleges united, and 1 eclectic college changed its faith and is now teaching regular medicine. Six of the regular colleges listed in our tables did not confer degrees, teaching only the first and second years of the medical course. Three colleges (two regular and one homeopathic) are exclusively for women; 63 for men; 91 are coeducational (66 regular, 13 homeopathic, 8 eclectic, 3 physiomedical, and 1 unclassified college). There are five schools to which only colored students are admitted, two less than last year, one having become extinct and the other now admitting both white and colored students. Three schools operate under the continuous course system, the year being divided into quarters, and the student being allowed to attend only a specified number of quarters or semesters in each calendar year. These three schools are located in Chicago. Sixty-eight regular colleges, 4 homeopathic and 1 eclectic college has a university or literary college connection or affiliation. Only two colleges (located in Chicago) impart instruction exclusively in the evening, and three colleges have both day and evening classes.

Comparative Table of Medical Colleges.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880......	72	12	6	..	90
1890......	93	14	9	..	116
1900......	121	22	8	..	151
1901......	124	21	10	4	159
1902......	121	20	10	4	155
1903......	121	19	10	4	154
1904......	133	19	10	4	166
1905......	126	18	7	4	157

Seventy regular colleges are members of the Association of American Medical Colleges; 14 belong to the Southern Medical College Association; all the homeopathic colleges are recognized as in good standing by the college committee of the American Institute of Homeopathy, and all the eclectic colleges are members of the National Confederation of Eclectic Medical Colleges.

The comparative table of medical colleges shows that the raising of entrance requirements has been effective, in a measure, in reducing the number of colleges. In many of the colleges the number of students in attendance was so small that the college authorities were confronted with the necessity of either effecting an amalgamation with some other college or of passing out of existence. The expense of conducting an up-to-date medical college is greater than the income from a small number of students; hence, stockholders are confronted by an assessment levy which they have no desire to meet. On the other hand, college authorities are recognizing more and more the desirability, for the sake of improving medical education, of having fewer and better medical colleges.

Length of Terms.—Here, too, the upward tendency of educational matters is noticeable. Last year 56.8 per cent. of the colleges had terms of less than eight months' duration, whereas this year only 39 per cent. were in this class. Last year the number of colleges having a six months' term was 27 (16.3 per cent.), whereas this year there were only 15 schools (9.4 per cent.) Last year only 19 colleges (11.6 per cent.) had a session of nine months' duration. This year there were 38 colleges (24 per cent.)

Table of College Terms.†

	Schools.		Per cent.	
6 months..................	(27)	15	(16.3)	9.4
7 months..................	(44)	35	(27.0)	22.0
7½ months..................	(22)	12	(13.5)	7.6
8 months..................	(34)	46	(20.8)	29.0
8½ months..................	(13)	10	(7.9)	6.1
9 months..................	(19)	38	(11.6)	24.0
*10 months..................	(4)	3	(2.4)	1.9

†Figures in brackets are for year 1904.
*Night schools.

Most of the colleges having six months' sessions are located in sections of the country where educators claim the educational facilities are such as to prohibit terms of longer duration. Most of the homeopathic and eclectic colleges have seven months' sessions. As we have pointed out before, the term "months" is exceedingly elastic. It always includes vacation periods. It is to be hoped that ere long this term will be discarded for "weeks." The college and state examining boards associations have substituted a requirement of thirty weeks, exclusive of holidays, for that of seven months. It is the equivalent of the old requirement of eight months. We have had no reason to change our opinion expressed last year that the ideal way of specifying the length of a college term is by requiring attendance in college for a definite number of hours in each subject taught.

Of the total number of matriculants, about 1.8 per cent. attended the night schools. About 24 per cent. attended colleges having sessions of nine months each. About 37.8 per cent. attended colleges having eight to eight and one-half months' sessions; 27.5 per cent. attended colleges having seven and seven and one-half months' sessions, while only 8.9 per cent. attended six months' sessions. Thus it will be seen that over one-half (61.8 per cent.) of the total number of students registered attended colleges whose sessions average from eight to nine months, whereas only 36.4 per cent. attended the short-term colleges. It is evident, therefore, that the length of the term does not sway the student in his selection of a college, because the majority of students attended the long-term colleges. Students are more and more taking into consideration the standing of the college and what it has to offer. Fees, entrance requirements and length of term are secondary considerations with the better class of students.

THE INFLUENCE OF THE PRIVATE PHYSICIAN ON MEDICAL EDUCATION.

The private practitioner, wherever located, is often likely to feel merely a remote interest in the great subject of medical education. He finished his own undergraduate medical education perhaps years ago, secured his license to practice, and, occupied each day with his own work, he begins to feel more or less instinctively that the circle of his immediate influence is getting to be well defined. More or less remote from the medical centers, he finds that there is little occasion for him to take any concern in the welfare and progress of the numerous institutions that are carrying on the actual work of training the coming generations of medical men. The methods and machinery of medical study even in his own college are now widely different from these in vogue when he "sat on the benches"; the requirements are different, the annual announcements, of which a number reach him each year, are couched in phrases that convey no definite meaning on cursory glance. Nevertheless, the physicians of the country can and do exercise a powerful influence on medical education, particularly in their close and often confidential relations to the young men in the community who want to study medicine. It is true that in these days of advancing entrance requirements when many students pass directly from the college to the medical school, the old time preceptor has lost prestige, but in spite of that physicians of standing everywhere frequently are called on to counsel young men in regard to the study of medicine; and there is much responsibility in the advisory capacity that physicians assume toward prospective medical students. In the first place, the physician must determine in his own mind whether the applicant for advice is by nature and training properly qualified in mind and morals to be encouraged in his often hastily conceived aspirations. Unquestionably, much disappointment and many disgraceful failures, early as well as late, may be avoided by firmly urging on the manifestly unfit the folly of an effort he can not sustain. Assuming, on the other hand, that there is no evident lack of fundamental qualifications, what are some of the general considerations that should guide the physician in his advice to a young man about to study medicine?

Preliminary Educational Requirements.—As yet there is great latitude on this point on the part of our medical colleges and of our state boards of health in the matter of preliminary educational requirements, but there is a general consensus of opinion that the minimum is a first class high school education; and it must be remembered that this does not suffice for admission to our best equipped schools, which require either part or all of the usual college course, with special attention to physics, biology and chemistry and to French and German. Hence, at the very outset, a serious problem must be settled without prejudice, if possible, to the fullest achievable success in medicine. The question the physician must determine in his own mind, after giving due regard to the individual peculiarities of each case, is which course is more likely to give the greater power, the higher ideals, the better service. We believe that if physicians will consider carefully this question the result will be to the advantage of the standing and efficiency of the profession in this country.

The Medical School.—What are the essential qualifications that a medical school must possess in order to merit the recommendation of the conscientious physician in his advice to the prospective medical student? In the first place, it is evident that it must fulfill the essential requirements of the various boards of state examiners, because it would be unjust to send a student to a school the graduates of which are not generally recognized by state boards. Such schools exist and their graduates consequently carry a most serious handicap when it comes to the selection of the scene of their life work. The following are some of the points that should be considered in the selection of the school:

1. *Equipment and Resources for Teaching the So-called Fundamental Branches, Anatomy, Physiology, and Physiologic Chemistry, Bacteriology, Pathology, Pharmacology.*—It is a recognized fact that a thorough grounding in the fundamental elements of these sciences is necessary in order that the medical student to-day may be properly prepared for the study of the practical or clinical branches. In order to teach properly to medical students the fundamental branches suitable, well-equipped, but not necessarily elaborate or ornate laboratories are essential. Each laboratory or department must be under the charge of a specially qualified man, who, as a rule, should give his whole time to teaching and investigation in his branches. Depending on the number of students and special circumstances there must be in each department a variable number of assistants. It is a recognized pedagogical principle that in elementary laboratory courses there should be at least one instructor for every 10 or 15 students. Anatomy and pathology require human material in order to give adequate instruction and in many of our schools there certainly is a lamentable lack of fresh pathologic material for the study of the gross changes of disease. Manifestly, large sums of money are necessary in order to do this work satisfactorily, money for permanent buildings and equipment, and for annual appropriations for salaries and current expenses. It should be realized that on account of the changes in the past fifteen years or so in the teaching of the fundamental branches, the income from the fees of students no longer suffices to pay for the running of a medical school on a satisfactory basis. Endowments and university connections are necessary.

2. *Equipment and Resources for Teaching the Clinical Branches.*—We are agreed that the day of slovenly dispensary teaching, of the routine clinical lecture, of the crowded amphitheatrical surgical and medical clinic is past. Small classes, individual instruction, bedside work, practical obstetric work, and work in the clinical laboratories are now considered essential in order that the student may become directly and personally familiar with the actual manifestations and methods of treatment of disease. In order to do this, the school must have undivided control of adequate dispensary and hos-

pital facilities and the various clinical departments must be thoroughly organized, so that proper co-ordination is attained. This is the largest weak spot in our medical schools, taken as a whole, and fortunate is the student who is wisely guided in this respect. Attention also may be called to the fact that progressive clinicians, for evident reasons, no longer are satisfied with having their laboratory work "farmed out," and as a consequence the well-equipped medical, surgical and gynecologic clinic each has its own laboratory.

3. *Library.*—In order that the student may secure some idea of the character of the literature of medicine in a broad sense, in order that he may be trained in the use of medical literature, in order that he may learn the necessity of following the main lines of development of medicine, if he wishes to grow and not to fossilize as soon as he leaves the medical school, and for other reasons, not the least of which are the needs of the faculties themselves, libraries are now an essential part of the equipment of the modern medical school. There has been a gratifying growth of interest in medical libraries in the United States during the last few years and several medical schools are now in possession of good libraries, from which students derive great inspiration and benefit. Unfortunately, however, the majority of our schools are not so favored and in numerous instances access can not be had to any medical library because there are large sections of the country that as yet are barren of library facilities. Here is a golden opportunity for physicians to influence medical education directly as well as indirectly, by joining hands in efforts to remedy this great need.

4. *Location.*—Other things being equal the location of a medical school is well worth consideration in the interest of the student. The majority of our schools are located in the larger cities, many of them in undesirable districts, in which vice in various forms flourishes rankly. The kind physician will hesitate in sending young men into the midst of such surroundings in preference to other places with a clearer, purer atmosphere. In this connection, it may not be out of order to ask what are the schools doing for the moral and physical welfare of the student? What about club rooms, gymnasiums, athletic fields, libraries and other influences for a healthy life?

Many other points must be omitted, such as the composition and the manner of appointment of the faculties, the arrangement of the curriculum, the records of the schools as to scientific investigation by the members of the faculties, the night school, etc.

The private physician has the power to influence medical education effectively by taking an interest in medical legislation in the various states. At every session of the state legislature questions of great moment to medical education and on which the members of the legislature need trusted and unselfish advice come up for discussion. Right here is an opportunity for effective influence that there is reason to fear physicians too often neglect. We see that both in his private as well as in his public relations the physician, wherever he may be, has placed on him certain responsibilities with reference to medical education which, if discharged conscientiously and high-mindedly, can not but have a far-reaching influence.

NATURAL RACE IMMUNITY..

Formerly it was believed that some human races possessed an absolute immunity to certain specific infectious diseases. Yellow fever, for instance, was supposed and is regarded even now as of little or no danger to negroes. The natives in yellow fever districts were said to escape the disease because they were "acclimatized." Livingstone declared that the native African was immune to syphilis, but unfortunately it has turned out that in this case the supposed immunity meant only this, that up to that time and for some time afterward syphilis had not been introduced into those parts of Africa traversed by the great explorer. So also has it been claimed that negroes are immune or but little susceptible to the malarial diseases. On the other hand, the colored race has been regarded as peculiarly susceptible to smallpox.

With the gradual growth of exact knowledge in regard to the spread of infectious diseases in all parts of the world, the belief that any human race possesses any absolute insusceptibility to the diseases just mentioned and to others of a similar character is gradually changing. What at first has seemed to be a natural, inborn immunity is, little by little, found to be in reality either a relatively high resistance, the consequence of acquired immunity, or the mistaken result of a prolonged absence of the opportunity for infection to develop.

The different behavior of the same infectious diseases among different races in the same country, as shown, for instance, by the relative infrequency of bubonic pest in Europeans in India and elsewhere as compared with its great frequency among the poorer classes of the natives, finds its true explanation not in any real insusceptibility on the part of the Europeans but in the different conditions that obtain as to cleanliness and general hygiene. The Europeans, in consequence of better hygiene, are not so exposed to infection, and, if exposed, perhaps better able to withstand it because of a greater general but non-specific resistance by virtue of better food and better care of the body in general. The same general observations may be made with reference to cholera. Knowing the sources of the disease, the intelligent civilized man is able to avoid it, while the poor native freely exposes himself to infection.

The Jews of western Europe have, relatively, little tuberculosis. This is not due to any true race immunity, as shown by the prevalence of the disease among the less favored members of this race in Poland, Russia, and in the ghettos of our own large cities.

The idea that the natives of South Africa were immune to malaria was shown to be without any basis in fact by R. Koch, who found that the disease is prevalent among the African children and that the small degree of susceptibility of the adults is due to a true acquired immunity. There is abundant reason to believe that an acquired immunity also explains the alleged natural insusceptibility to yellow fever on the part of the natives in districts in which this disease is endemic. It is to be borne in mind that a severe atttack is not necessary for the establishment of an acquired immunity. It is quite probable that children, possibly to some degree protected by an intrauterine transfer of antibodies, may pass through comparatively mild attacks that are hardly noticed.

We know, too, that infectious diseases that have existed for a long time in a given country gradually appear in less and less virulent form among the people. This is certainly true as regards measles and possibly also scarlet fever, which, when introduced on virgin soil, e. g., the Faro or Sandwich Islands, assume a virulent type.

The increased attention given to tropical diseases, the continued and augmented necessity to guard against the introduction of infectious diseases prevalent among the civilized races into countries occupied by races as yet but little advanced on the road to civilization, and *vice versa,* are going to give us more definite information in regard to this question of true race immunity, the existence of which at the present time appears to be exceedingly doubtful.

THE EPIDEMIC CONTINUES.

The number of cases of yellow fever in New Orleans has steadily increased. On August 15, the total of cases reported to that date was 1,122 and total deaths 184, a mortality of 16.4 per cent., showing decreasing death rate. Scientific medicine can not accomplish the impossible, and the conditions in New Orleans have made inevitable some extension of the epidemic. It is greatly to be regretted that some few physicians undoubtedly have shared in the concealment of patients at points which have thereby become new foci of infection before they were discovered. Other patients have gone without medical care rather than submit to preventive measures. From such patients a large number of mosquitoes have become infected and, of course, are spreading the disease. It must not be overlooked that New Orleans is not under military government, with a physician at the head of affairs, as was Havana when yellow fever was exterminated there. This difference in conditions is all-important. Many landlords and tenants have not complied with the new ordinance to screen cisterns and houses, and they are to be arrested and prosecuted. Even rich men in the best part of New Orleans have been offenders. Up to this time the cases in the American quarter of the city are few and scattered, while in the old quarter the infection has become pretty general. Dr. Berry, of the United States Public Health and Marine-Hospital Service, thought to be immune by reason of a former attack, has unfortunately suffered a severe infection of the fever, and scoffers at the mosquito etiology have made what they could of the alleged fact that he had been sleeping under a screen. Later and more accurate reports will, without doubt, clear up these features of the case. In view of the fact that the health authorities are not receiving quite unanimous public support, it is hopeless to expect an early cessation of the epidemic. The best that can come under such conditions is a reduction in the number of cases and restriction of the spread, though Louisiana, outside New Orleans, now reports many foci. The freedom of a republic is unfavorable to the extermination of an epidemic. By the time the people can express themselves and obtain the necessary laws the necessity for such has passed. Legal processes are too slow to effect prevention. The time may yet come when we shall find it advisable to give full and real military power to our health authorities during epidemics. Communities are now quite willing that boards of health shall have military power as against other communities, but domiciliary inspection and its accompanying restrictions and requirements is not received with general favor. Military enforcement of orders to screen, to clean up, to report suspicious illness, etc., is not desired, but we shall, perhaps, have to come to it if ordinary measures are not responded to more heartily. When this epidemic is over we shall have accumulated a fund of new and useful information obtained in the school of practical experience.

THE TABLE OF STATISTICS OF COLLEGES.

On pages 566 and 567 will be found a table, giving the states containing medical colleges, the name of each college, the population of the city in which the college is located, the number of men and women registered as students during the session of 1904-05, and also the graduates (men and women) of 1905, the total number of teachers in each college, and the number of weeks in the college year. The suffixes, R., H., E., Ph.M., stand for regular, homeopathic, eclectic and physiomedical. Much of the information to be derived from this table has been set forth in the editorial on Medical Education in the United States, page 536. On page 552 we present, in abstract form, essential facts of all medical colleges arranged by states, and on pages 565 and 566 will be found the requirements of the regular, homeopathic, and eclectic medical college associations, also a list of colleges holding membership in these organizations.

EPIDEMIOPHOBIA.

Medical men long have wondered at the inconsistencies of the popular dread of epidemics. People and newspapers became hysterical a few years ago over a score or two cases of Asiatic cholera on the seaboard, while around their offices and homes thousands suffered and died from tuberculosis, syphilis, gonorrhea and typhoid. The small but new enemy seemed infinitely more terrible than the great but familiar ones. The newspapers of August 11 presented a dramatic example of the same peculiar mode of thought. New Orleans reported a total to that date of 756 cases of yellow fever, with a total of 129 deaths, nearly all the mortality being among the Italians. New York reported up to August 5, 1,496 cases of typhoid, with 395 deaths, many of them among Americans of the better class. Think of the fright, brutality and migration inspired by the smaller figures as compared with the virtual indifference that meets the greater ones! Yet we know that, apart from popular apathy, it is easier wholly to prevent typhoid in the North than yellow fever in the South. Uncontaminated water and food insure freedom from epidemic typhoid, while the prevention of yellow fever necessitates the destruction of myriads of insects as well as the absolute isolation from the mosquitoes of every case of the disease during the first three days of fever. Verily man is yet an illogical animal.

DISTRIBUTION OF MEDICAL STUDENTS.

On pages 568 to 571 will be found a table showing the distribution of students of each college by states. The influence of the proximity of the medical school is seen in the fact that states which have medical colleges have more students in proportion to the population than those which have none. Only three states contributed over two thousand students: New York, 2,423; Illinois, 2,084; Pennsylvania, 2,022. Four states contributed over one thousand students, but less than two thousand: Missouri, 1,138; Ohio, 1,065; Massachusetts, 1,019; Texas, 1,012. Iowa contributed 916 students, and Indiana, 881. The fewest students (9) came from Arizona. Wyoming and Nevada each contributed 13 students; New Mexico, 19; Montana, 30; Idaho, 37; Delaware, 48; Utah, 68; North Dakota, 70, and South Dakota, 93. The states not mentioned contributed between 100 and 700 each. Several of the colleges failed to furnish the information necessary for this table, but, as most of them are small schools, the figures can be disregarded in summing up. Two of these schools are of some size, and, as the majority of their students come from Kentucky and Indiana, the totals of these two states would be increased considerably.

THE EVOLUTION OF INFECTION.

The editorial in The Journal, August 5, entitled "Declining Virulence and Advancing Parasitism" has caused a correspondent to call our attention to an article that appeared in The Journal, May 3, 1890, written by Bayard Holmes of Chicago, in which infectious parasitism is discussed from the same general point of view, i. e., the evolutionary, as in Theobald Smith's address. When Holmes wrote his article our knowledge of the finer mechanisms of the establishment and healing of bacterial infections was in its very beginning; the life history, the mechanisms of ingress and egress, the distribution of most of the pathogenic microbes were as yet largely unknown. Consequently it was only the grosser facts of parasitism and of infection that could be used to construct any theories as to the evolution of infection, and this it must be said that Holmes did with great skill and farsightedness. After reviewing certain of the general facts of parasitism and especially those that indicate that the obligate parasites of tuberculosis, syphilis, measles, scarlet fever, etc., must have occupied long periods of time to become adapted to their present very restricted modes of existence, Holmes asks how has it been possible for man to withstand the attacks of so many enemies for so long a time? He answers that the reason is that the parasites were not essentially destructive; had they been so, neither host nor parasite would have survived; for with the destruction of the host species occurs the destruction of the parasite. The diseases mentioned may become more or less destructive, however, by virtue of secondary mixed infections and other accessory factors, such as all that tend to weaken the body. In the case of facultative parasites, on the other hand, the chances, so Holmes argued, are more against the host in the conflict that ensues, because natural selection has not rendered us indurate to them. It will be seen that Smith's theory goes much farther than Holmes' in that the former includes under his law of declining virulence and advancing parasitism, not only obligate parasites, but also the facultative invasive microbes, i. e., those that appear to be slowly moving, through long periods of time, toward higher degrees of parasitism.

THE EDUCATION OF THE PUBLIC.

The opportunity for public lectures on the subject of hygiene and prevention of disease in connection with the summer assemblies held at various points throughout the country is worthy of cultivation. An example lies before us in the illustrated announcement of the Rockford (Ill.) Chautauqua Assembly. Included in the program, which touches on every subject that might interest the popular audience, are several lectures on the tuberculosis problem by two physicians who are fully competent to speak thereon. Other assemblies have similar lectures, and we believe that if the authorities knew whom they could secure to give lectures of this kind there would be a much greater demand. Any county medical society, we think, will be able to recommend such speakers. In view of the public interest in medical matters, it is the duty of physicians to enlighten the public so that persons of immature or erratic ideas will not need to pose as exponents of the medical profession, as sometimes occurs. But—and this is important if criticism is to be avoided—great care must be taken by those who do this work that the methods adopted are strictly ethical.

Medical News

ILLINOIS.

Hospital Site Selected.—It has been decided that the new Warner Hospital, Clinton, is to be erected on West White Street. The ground is already being cleared.

Personal.—Dr. Buxbaum, Chicago, has succeeded Dr. Edward Banker as home physician of the St. Charles Hospital.——Dr. Louise L. Culver, Sandwich, sailed for Europe last week.——Dr. Charles E. Crawford, Rockford, has been elected grand medical examiner of the Sons of St. George.——Dr. Robert W. McInnes, Belvidere, has been appointed a member of the Jamestown centennial exposition commission.——Dr. Byron C. Stolp, has returned from Europe.——Dr. and Mrs. James C. Gill, Chicago, returned from Europe last week.

Chicago.

Ground Lease Recorded.—Rosa A. Henderson has recorded a ground lease of the Lakeside Hospital site to A. Ralph

Johnstone for a term of ten years from Aug. 31, 1903, at an annual rental of $4,500, with privilege of purchase at any time for $60,000.

Physicians Play Golf.—The Physicians' Golf Association, of which Dr. Franklin H. Martin is president and Dr. Thomas J. Watkins, secretary and treasurer, held its annual tournament at the Midlothian links August 10 and 11. Dr. Allan T. Haight won in the first flight; Dr. Franklin H. Martin the second; Drs. William H. Wilder and Thomas J. Watkins divided the third; Dr. Charles F. Swan won the fourth, and Dr. C. S. Stevenson the fifth.

Deaths of the Week.—For the week ended August 12, 539 deaths were recorded, equivalent to an annual death rate of 14.11 per 1,000. This is a decrease from 14.85, the rate for the previous week, but an increase over 13.41, the rate for the corresponding week of last year. Acute intestinal diseases caused 200 deaths; 222 deaths were of children under 5; heart disease killed 37; consumption, 36; violence, 35; nephritis and pneumonia, each 30, and cancer, 21.

IOWA.

Physician's House Burned.—The residence of Dr. John F. McKittrick, Des Moines, was burned to the ground July 27. The loss is estimated at $8,000.

European Tourists.—Dr. John N. Warren, Sioux City, has gone to Germany.——Dr. and Mrs. James J. Ransom, Burlington, have returned after a year abroad.

Demands Sanitary Cars.—Iowa has started a crusade against insanitary passenger cars and the disease-breeding conditions that characterize many of the coaches on western railroads. This step has been taken by the state medical board and boards in other states will be asked to co-operate in carrying the crusade to a successful issue. It is proposed to secure the thorough cleansing of the passenger coaches at the terminus of every trip, as well as to secure the co-operation of the railroads in preventing the spread of disease through the medium of unsanitary coaches and sleeping cars.

Personal.—Dr. Robert E. Conniff, Sioux City, has been elected president of the State Board of Health, and first vice-president of the Iowa Anti-Tuberculosis Association.——Dr. and Mrs. Jacob W. Wells, Ossian, have been committed to the Iowa Hospital for the Insane, Mount Pleasant, on account of drug addiction.——Dr. Reginald H. Payne, Van Horner, has taken a trip to the West Indies.——Dr. Clarence Hetzel, Davenport, has been appointed assistant physician at the Orphans' Home in that city.——Dr. George P. Neal, Fort Madison, has been appointed a state delegate to the Trans-Mississippi Commercial Congress, which meets in Portland, Ore., August 16-19.——Dr. Paul H. Schaefer, Burlington, has been elected physician of Des Moines County.

KENTUCKY.

Acquitted.—Dr. Edward C. Courtney, Neave, who shot and killed his partner, Dr. W. M. Carney during a "misunderstanding," in December last, was acquitted July 14 on the ground of self-defense.

Personal.—Dr. William M. Hanna, Henderson, has had a cerebral hemorrhage.——Dr. Edward Alcorn, Hustonville, is ill and under treatment in St. Joseph's Hospital, Lexington.——Dr. G. Z. Horine, Graefenburg, fell over a chair, breaking five ribs.——Dr. Irvin Abell, Louisville, who was operated on for appendicitis last month, is making a satisfactory recovery.——Dr. Robert C. H. Rademaker, Louisville, was found unconscious and suffering from a wound in the head July 26.——Dr. Alfred G. Farmer, Louisville, sailed August 14 for Panama.——Dr. Oscar E. Bloch has been appointed lecturer on surgery in the University of Louisville Medical Department.——Dr. J. Mason Morris, Louisville, is seriously ill at Battle Creek, Mich.

MARYLAND.

Bequest.—The Hebrew Hospital, Baltimore, has received a bequest of $1,000.

Insane Asylum Journal.—The *Maryland Hospital News* is a monthly four-page paper which emanates from Spring Grove Asylum for the Insane. It is edited by a patient and is believed to be the only paper of the kind in existence. It was first issued in 1899.

Personal.—Dr. H. Burton Stevenson, Sherwood, Baltimore County, had his left ankle broken while out driving.——Dr. Hugh Warren Brent, Baltimore, is in Berlin and will later go to Denmark.——Dr. William J. Watson, who was operated on for appendicitis, has recovered and has gone to West Virginia for the rest of August.

MASSACHUSETTS.

Donation to Lowell Hospital.—Frederick Fanning Ayer has given $50,000 to Lowell General Hospital, the income of which is to be used for such purposes as the trustees may decide.

Senior Student Drowned.—Walter L. Bradbury, Roxbury, a senior student at Tufts Medical College, who was employed as emergency physician at Nantasket Beach, was drowned at that place while swimming, July 30, aged 30.

Relief Hospital at East Boston.—The City Council of Boston has voted $30,000 for a relief hospital in East Boston, to be conducted like that at Haymarket Square, as a branch of the City Hospital. To this has been added the $11,000 available for the same purpose from the estate of Anne Taggart.

Automobilist Fined.—At the District Court in Dedham, Dr. Howard A. Lothrop, Boston, was fined $5 for speeding his automobile beyond the legal limit of 12 miles an hour. The explanation that he was going to a patient 83 years old in imminent danger of death did not avail in the eye of the law.

Personal.—Dr. Charles P. Thayer, Boston, secretary of Tufts Medical College, has resigned and has been succeeded by Dr. Frederic M. Briggs.——Dr. Hibbert W. Hill has resigned as director of the bacteriologic laboratory of the Boston Board of Health, to become assistant professor of bacteriology in the University of Minnesota and assistant director of the Minnesota State Board of Health laboratory.

MICHIGAN.

Abroad.—Dr. and Mrs. James Cleland, Jr., Detroit, sailed for Europe August 5.——Dr. and Mrs. Theophil Klingman, Ann Arbor, have gone to Europe.——Dr. Cressy L. Wilbur, Lansing, has sailed for Paris.

Hospital Notes.—Frank W. Hubbard, Bad Axe, has given $10,000 to build a hospital at that place, which it is said will be the only one in the Thumb of Michigan.——The Flint council has accepted the bequest of James J. Hurley of $25,000 and a site for a hospital to be known as the Hurley Hospital.——Mrs. Delia Alma Hanmer, Detroit, left by her will $10,000 to endow a room to be known as the Hanmer School of Music Room.

National Guard Changes.—On account of the resignation of Dr. John L. Burkart as major-surgeon of the Fourth Infantry, M. N. G., Captain William T. Dodge, Big Rapids, has been made major and surgeon; Lieutenant Ralph C. Apted, Grand Rapids, captain and assistant surgeon, and Dr. Howard A. Grube, Coldwater, lieutenant and assistant surgeon. Major Burkart is still in the United States service in the Philippine Islands.

Personal.—Dr. G. T. Richards of the medical staff of the Michigan Asylum for the Insane, Kalamazoo, has resigned, and Dr. Bert C. Stripp has been added to the staff.——Dr. James Cummings has been made director of the Pasteur Institute at the University of Michigan, vice Dr. Thomas B. Cooley, resigned.——Dr. Albert P. Ohlmacher, formerly of Gallipolis, Ohio, has been appointed director of the biologic laboratory of Frederick Stearns & Co., Detroit.——Dr. Oliver A. La Crone, Kalamazoo, is critically ill with rheumatic arthritis.

NEW YORK.

Diphtheria in Rochester.—During July 114 cases of diphtheria were reported in Rochester, with 9 deaths.

Fraud Order Issued.—The postmaster general has issued a fraud order against the New York Institute of Physicians and Surgeons and Prof. Thomas E. Adkins of Rochester, N. Y., its president. Newspaper advertisements in the shape of seeming news told of the wonderful "vitaopathic" treatment.

Memorial to Young Trudeau.—A memorial window has been placed in St. John's in the Wilderness, Paul Smith's, in the Adirondacks, in memory of the late Dr. Edward L. Trudeau, Jr. The window was unveiled last week, and shows a figure of a young man in the garb of a traveler with a caduceus in his right hand. Under the window is the inscription: "I will look unto the hills from which cometh my help. This window is placed here in loving memory of Dr. E. L. Trudeau, Jr., by his friends."

New York City.

Off for Europe.—Dr. Eugene Fuller sailed on the *New York*, August 11.——Dr. J. B. Zabriskie sailed on the *Minnehaha*, August 11.——Dr. Albert Leffingwell of Aurora sailed on the *Bremen*, August 10.

Smallpox in Harlem.—Two cases of this disease were discovered in Harlem on August 2. A daily inspection of the block in which they lived has been made since finding these cases, but no more cases as yet have occurred.

Destroying Bad Milk.—The summer corps of the Health Department has made several very thorough examinations of the milk supply of the city, with the result that thousands of gallons have been thrown away. Whenever the temperature of the milk is above 50 F. it is destroyed. The sanitary condition of the shops and utensils used in handling the milk has been improved.

Typhoid Fever at Bath Beach and Bay Ridge.—There are at present 173 cases of typhoid fever in three Brooklyn hospitals—the Norwegian, Seney and Long Island College. So many were leaving the vicinity that a meeting of citizens was held to consider what could be done to check the epidemic. They claimed that the situation was by no means as alarming as had been represented. The Board of Health has prepared a circular letter entitled "How to Avoid the Contraction and to Prevent the Spread of Typhoid Fever," which will be put into the hands of the people living in infected houses.

New Brooklyn Hospitals.—For years East New York and Canarsie have felt the need of an institution with an ambulance service, as the nearest hospitals are from two to five miles distant. The contemplated institution is to take the place of the Bradford Street Hospital, which is an old building entirely inadequate in every respect. A site has been purchased facing Linton Park at a cost of $36,000. The Department of Charities has $50,000 available for the erection of this structure. The building to be erected now will only be a small part of what is designed to build later.——The charities department also has plans drawn for another hospital in Brooklyn, to be built on the Ocean Parkway between Avenue Y and Canal Avenue. This institution will be devoted largely to convalescent patients, will have a capacity of 75 beds and will cost about $100,000.

OHIO.

Joint Meeting and Outing.—The first joint meeting of the Lake and Ashtabula County medical societies was held at the Shore Club, August 7. Dr. H. N. Amidon, Painesville, greeted the guests, and Dr. William H. Leet, Conneaut, responded. Dr. Harris G. Sherman, Cleveland, acted as toastmaster.

Receiver Appointed for Hospital.—On petition of Dr. Robert C. Tarbell, and by consent of the parties concerned, Judge Dillon of the Common Pleas Court, on July 29 appointed Dwight Harrison, an attorney of Columbus, receiver of the new Columbus General Hospital Company, under bond of $10,000.

Wagar Likes West.—Dr. Charles P. Wagar, Toledo, who went to Los Angeles several months ago, has returned to Toledo for the summer. He expects to remain on the Pacific Slope and has commenced the publication of the *California Medical and Surgical Reporter* in addition to the *Toledo Medical and Surgical Reporter.*

Ill and Injured.—Dr. Jared E. Cone, Youngstown, is reported critically ill with heart disease.——Dr. Charles C. Knapp, Zanesville, is reported to be seriously ill from rhus poisoning at a hospital in Portland, Ore.——Dr. Hugh A. Baldwin, Columbus, is able to be out on crutches after an illness of 18 months.——Dr. D. Van Buren Burkett, Columbus, who had both hips broken and sustained internal injuries, July 7, by being crushed between two street cars, is improving.——Dr. J. W. Haverfield, Uhrichsville, fell from a tree, July 1, fracturing several ribs and the clavicle.

PENNSYLVANIA.

Philadelphia.

Bequest.—By the will of Henry Cramer, who died July 28, the German Hospital receives the sum of $500.

Births Exceed Deaths.—During July 2,582 deaths were reported and 2,902 births. The births, therefore, exceeded the deaths by 320.

Milk Inspection.—The number of inspections made in July were 4,928, and 122,665 quarts were inspected. Of this number 1,540 quarts were condemned; 1,332 chemical examinations were made, and 502 microscopic examinations.

Bacteriologic Laboratory Report.—The report of the bacteriologic laboratory for July shows that 1,526 specimens were examined for diphtheria; 416 examinations were made of typhoid fever blood; 474 examinations of milk, and 74 of sputum. The laboratory supplied 598 bottles of antitoxin.

To Fight Typhoid.—There being no sign of diminution in the spread of typhoid fever in this city, the Bureau of Health has prepared a circular containing valuable instructions in regard to preventing the disease. Copies will be distributed by the assistant medical inspectors in a house-to-house visitation throughout the city.

Medical Inspection.—The number of inspections made by the medical inspectors, excluding schools, during the month of July aggregated 14,477. They ordered 414 fumigations, and examined 28 cases for special diagnosis; 164 cultures were taken, 74 injections of antitoxin made, and 980 vaccinations performed.

Violation of Pure Food Laws.—By the action of Dairy and Food Commissioner Warren a number of dealers were held under $400 bail each for court, and two defendants were fined $57.50 each, charged with selling drinks adulterated with saccharin. Warrants have been issued for several dealers, and still others are being watched by the agents of the commission.

Suits Against Meat Dealers.—On August 9 the semi-official announcement was made at the State Dairy and Food Bureau that within the next thirty days fifty or more suits will be brought against meat dealers in central Pennsylvania for selling "doctored" meats. Among the offenders are several agents of western companies. These suits will be brought in about twenty-five counties.

To and from Europe.—Dr. and Mrs. George E. Levis sailed on the *Caronia* from New York, August 8.——Dr. Walter M. L. Ziegler has returned from Europe.——Dr. Robert C. Moon, vice-consul for Liberia, has returned from Europe.——Dr. and Mrs. William B. Van Lennep returned August 8 from abroad. ——Drs. V. S. Gaggin, William R. Gieser and M. P. O'Neill sailed on August 12 on the *Merion.*

Irreparable Fire Loss.—The Medical Hall of the University of Pennsylvania, Philadelphia, containing one of the most valuable anatomic collections in the world, was burned August 14. Very few of the specimens were saved. The loss on the building and exhibits is estimated at $150,000, but the anatomic collection can not be replaced. The fire occasioned a panic in the hospital adjoining the medical hall but no casualties occurred.

Hospital Reports.—During July there were admitted to St. Mary's Hospital 234 patients; remaining from last month, 90; discharged during July, 224; total number of patients in hospital, 100; charity patients, 288; pay patients, 36; ambulance calls, 62; brought by patrol, 45. Out-patient department—Brought by patrol, 84; new cases, 775; old cases, 1,659; *x*-ray treatments, 47; radiographs, 8; fluoroscope examinations, 9; total, 2,498.

River Pollution.—On August 9 the report of Chief Medical Inspector Cairns on the pollution of the Schuylkill River was made public by Director Martin. The river and its tributaries were recently inspected by Dr. Cairns and Dr. Seneca Egbert from Reading down to the Fairmount Park. A body of nuisance inspectors have been sent to Manayunk, where the conditions are especially bad. A copy of the report was sent to Dr. Samuel G. Dixon, state health commissioner, who finds much encouragement in the willingness exhibited by the different municipalities along the Schuylkill River to co-operate with the health department in improving the conditions that have been found a menace to public health.

Health Report.—The deaths from all causes during the week ended August 12 aggregated 438. This is a decrease of 45 as compared with last week and a decrease of 3 as compared with the corresponding week of last year. The principal causes of death were: Typhoid fever, 14; whooping cough, 5; diphtheria, 5; tuberculosis, 41; cancer, 14; apoplexy, 16; heart disease, 21; acute respiratory disease, 25; enteritis under 2 years, 83; Bright's disease, 30; premature birth, 11; congenital debility, 11; old age, 8; accidental injuries, 16, and marasmus, over 3 months, 17. There were 162 cases of contagious disease reported, with 19 deaths, as compared with 166 cases and 12 deaths reported the preceding week. There were 109 new cases of typhoid fever, an increase of 9 over last week.

GENERAL.

Missouri Valley Society to Meet.—The eighteenth annual meeting of the Medical Society of the Missouri Valley will be held at Council Bluffs, Iowa, August 24-25. The sessions will be held in the auditorium at Lake Manawa, a summer resort near the city. The president is Dr. S. G. Burnett, Kansas City, and the secretary, Dr. Charles Wood Fassett, St. Joseph, Mo.

American Surgeons Receive Degrees.—At the fourth centenary of the Royal College of Surgeons of Edinburgh, July 22, the honorary fellowship of the college was conferred on Drs. William S. Halsted, Baltimore; William W. Keen, Philadelphia; Howard A. Kelly, Baltimore; and *in absentia* Drs. William J. Mayo, Rochester, Minn.; Charles McBurney, New York, and John Collins Warren, Boston.

Death Rates in Large Cities.—The Bulletin of the Chicago Department of Health gives the following statistics of July mortality in cities of more than a half-million inhabitants:

Cities.	Population.	Deaths.	Rate.
New York	3,902,097	7,548	22.76
Chicago	1,990,750	2,280	13.48
Philadelphia	1,417,062	2,582	21.45
St. Louis	636,973	887	16.39
Boston	617,102	1,086	20.70
Baltimore	546,217	1,163	25.05

Chinese Immigration Frauds.—It is reported that Chinese immigrants are using solutions of adrenalin to conceal symptoms of trachoma. This practice is not original with the Chinese, as immigrants from Europe were found to be using this drug for the same purpose (The Journal, Dec, 17, 1904). It is reported that an American physician, engaged in private practice in Hong Kong, makes a specialty of putting Chinese into condition to pass the immigrant inspectors at San Francisco. The Public Health and Marine-Hospital Service is reported to have the matter under investigation.

THE YELLOW FEVER SITUATION.

INFECTION BELIEVED UNDER CONTROL—RELATIVELY LOW DEATH RATE—OUTSIDE COMMUNITIES STILL PANICKY.

Louisiana.

Steamer Held.—The Norwegian steamer *Saphir,* from Colon, is held at Quarantine, and two patients were taken off the ship and placed in the detention camp at the quarantine station.

Immune Attacked.—Surgeon Thomas D. Berry, United States Public Health and Marine-Hospital Service, one of the first to reach New Orleans, and considered to be immune, was stricken down with yellow fever August 10 and has been removed to the special yellow fever ward in Touro Infirmary.

Spread of the Fever.—Up to August 15, 1,122 cases have been reported in New Orleans, with 184 deaths, from 229 foci of infection. On August 15, 62 cases were reported, with 6 deaths, from 19 new foci. Outside of New Orleans there have been up to date 129 cases and 24 deaths.

Disinfection Day.—Next Sunday has been designated as a day of general disinfection for New Orleans, and appeals have been made to every householder, every boarding or lodging-house keeper, every hotel-keeper, every merchant and manufacturer, and every person having any enclosure of any nature, whether it be a stable or a room in an office building, to fumigate at 10 o'clock on that day, burning sulphur under direction of the Marine-Hospital officials, for at least two hours.

Failed to Screen Cisterns.—Hundreds of affidavits were filed in the courts August 15 against New Orleans property holders, under the new mosquito law, because they have failed to screen cisterns. The cases are disposed of promptly and without favor, each offender being fined $25 and costs.

Now Under Control.—Dr. Joseph H. White, United States Public Health and Marine-Hospital Service, declared on August 15, after revising the official record of the day, that "Yellow fever in New Orleans is now under control. In my judgment the disease will be stamped out with a fight to prevent the spread of infection. There will be other cases, but we now have the situation in hand."

Expert Arrives.—Dr. John Guiteras, the yellow fever expert, arrived in New Orleans August 15, and after a conference with Dr. White and inspections of the original infected district, he declares that the present methods will stamp fever out of New Orleans within forty days.

Would Force Relaxation of Quarantine.—The State Board of Health on August 8 decided to ask the governor to employ the national guard in enforcing some relaxation of the most drastic of the local quarantines in the state. Towns were ordered not to refuse admission to any person having a proper certificate of health not over twenty-four hours nor to any person having undergone six days' detention. Interference with trains and boats is forbidden, and mail, express and freight carried in fumigated cars must be admitted.

Baton Rouge has its local company of state militia acting as quarantine guards.——It is reported that a mass meeting of citizens has voted that there is no foundation for the conclusion that mosquitoes carry yellow fever, and that thereon the medical members of the board of health resigned.

Monroe.—The mayor of Monroe on August 15 called out a company of militia to support a shotgun quarantine established by citizens of Monroe, who objected to the order of the local health board, lightening the quarantine.

Shreveport has had six cases at its detention camp, but no deaths, and Texas has raised the quarantine against freight trains from Shreveport.——Shreveport has a new board of health, the old one having resigned. The new members are Drs. T. Edgar Schumpert, Milton F. Smith and Francis S. Furman, Mr. W. A. Mabry and Mr. Henry Bodenheimer.

St. John.—Quarantine guards at St. John are said to have beaten Judge J. L. Gaudet of that place when he wished to reenter on his return from Jefferson.——In the same place a woman and child are alleged to have been manacled and taken to an unfit camp.

Vinton.—The postoffice at Vinton has been closed until train service is resumed.

Outside Cases.—Two cases of yellow fever are officially reported at Tallulah.——On August 14 a case was found at Lutcher.——At Diamond and Goodhope plantations one suspicious and three positive cases were discovered.——Two more cases were discovered on the Wildwoods plantation in Jefferson Parish. Another case has developed at Port Barrow, Ascension Parish. Two cases have occurred in La Fourche Parish. Two cases and one death are reported at Porte Celeste, Plaquemine Parish.——A new focus of infection has been found at Lafayette.——At Patterson three new cases de-established.——A suspicious case was reported August 15 veloped, making 49 in all, and an emergency hospital has been from Algiers.——The one case at Alexandria has been succeeded by no more.

Other States.

Alabama.—A dissension has arisen between Dr. William H. Sanders, state health officer, Montgomery, and the governor of the state, in an attempt to fix the responsibility for the delay of four days which occurred before the executive approval of the quarantine order against Louisiana was secured.——A case of yellow fever appeared in Montgomery and, at the request of the Jefferson County Medical Society, Birmingham declared a quarantine against Montgomery, arousing active discussion. Dr. Sanders appeared before the Jefferson County Medical Society, Birmingham, and asked that the quarantine against Montgomery be lifted, as the one imported case there had been properly isolated and was recovering, and there were no other cases. By a vote of 39 to 13 it was ordered to recommend that the quarantine stand, because there was not absolute proof that the Montgomery case came from outside infection. The same meeting requested the city authorities to wage a war of extermination against mosquitoes.——The one yellow fever patient at Montgomery has recovered and without spread of infection.

Arkansas.—Legislative neglect is making trouble in the state, as the last legislature failed to appropriate anything for the State Board of Health, not even making any allowance for the salary of the secretary. Notwithstanding this the state has declared a complete quarantine against all infective places, leaving the execution of its orders to the national guard. No one who has left an infected point can be admitted to the state until five days thereafter. Tropical fruits and household goods from infected districts will not be admitted. These rules were formulated by the State Board of Health, of which Dr. George M. B. Cantrell, Little Rock, is president.——At rifle muzzle Helena refused a river boat permission to take on coal or lower a yawl.——Little Rock requires certificates of health from all who come from the South, and is engaged in oiling ponds and cleaning up the city.——Jonesboro has enforced its quarantine with the local company of national guard.

Georgia.—Savannah has declared a quarantine against persons and personal baggage coming from Louisiana. None from such points will be admitted until six days after departure therefrom.——Columbus has quarantined against all places where yellow fever exists or may exist, requiring those from infected points to undergo twenty days' detention.——Atlanta has in force a train inspection service to look for suspicious cases of illness and to learn where passengers have come from and their destination.

Kentucky.—Louisville has medical inspectors board all trains from the South looking for suspicious cases of illness. A screened ambulance and screened hospital ward are kept in readiness.——Kentucky, while open to refugees, requires transportation officials to report to the State Board of Health every case without a health certificate, thus enabling local supervision of every suspicious case. The board urged screening against mosquitoes and other disease-bearing insects, together with destruction of their breeding-places.——Fulton and Wickliffe have declared quarantines against infected points, but the State Board of Health ordered the quarantine raised, and advised the authorities at Paducah that its proposed quarantine would not be recognized, thus leading to the abandonment of the project. The state board said: "Local quarantines are worse than useless, giving rise to a false sense of security which interferes with the exercise of effectual precautions, and imposing unnecessary restrictions on travel and commerce. . . . No refugee is a source of danger unless he develops the disease, and not then if placed in a well-screened room and protected from mosquitoes." Paducah very sensibly set to work oiling stagnant water and cutting weeds that shelter mosquitoes.

Illinois.—It is reported from Cairo that the stegomyia fascia is more prevalent than last year.——The secretary of the State Board of Health believes extraordinary precautions will be necessary to prevent the fever from getting a foothold in southern Illinois. Past experience has shown that in previous epidemics the disease has remained almost dormant during the summer, but has broken out with fury in September and October.——Every passenger and freight train and boat coming from the South is carefully inspected at Cairo, Thebes or Brookport. Day and night watchmen are stationed on the railroad bridge at Cairo and the entire water front is patroled day and night. This rigidity of inspection will not be relaxed until the coming of frost.

Indiana.—It was reported August 15 that a mild case of yellow fever had appeared in Waterford, LaPorte County. The patient had recently returned from Louisiana, where she had helped to nurse two sisters who died from the disease——The health officer at Crawfordsville telegraphed August 15 to the State Board of Health that a case resembling yellow fever had developed there. The state health authorities have sent Dr. Alembert W. Brayton, Indianapolis, to investigate this case.

Mississippi.—Cases have been reported at Sumrall and Lumberton.——Laurel, Ormisburg, Pervis and Aberdeen "will not admit passengers or baggage from any point on the map."——Vicksburg has applied oil to all stagnant waters and lime to noisome spots.——Surgeon S. B. Young, United States Public Health and Marine-Hospital Service, addressed the city council and citizens of Jackson August 1, giving convincing arguments of the truth of the mosquito theory of transmission of yellow fever.——The health officer of Greenville, Dr. O. H. Stone, resigned on August 2, supposedly on account of friction with the city administration regarding quarantine.

New York.—One of the crew of the *Advance*, which arrived on August 3, died in quarantine of yellow fever. The record to date, out of more than 200 suspects, shows three genuine yellow fever cases, two of which were fatal. There were, on August 12, 19 members of ships' crews and passengers at Swinburne Island awaiting developments.

North Carolina.—Wilmington has the quarantine epidemic and refuses to admit persons or baggage from infected districts until they have undergone 15 days' detention.

Tennessee.—Chattanooga, Hamilton County and West Tennessee are quarantined against the infected region; Knoxville welcomes refugees.——Memphis, beginning August 7, enforced rigid quarantine against tropical fruits.——Coffeeville refuses to admit passengers or freight and express matter from infected districts.——At Memphis there has been a disagreement as to the limits of authority of the city and county boards of health that has caused suburban residents some inconveniences at inspection stations.——Dyersburg refuses admission to persons, animals and freight of every character and kind coming from infected districts, and has established a ten-day detention period.

Texas.—Orange, on August 3, reported in detention nearly 100 travelers, including some women and children, while it could not offer adequate accommodations for that many men.——The Gregg County health officer, Dr. W. D. Northcutt, on August 2 "declared quarantine in this county against all points."

General.

Mexico.—The Superior Board of Health of Mexico reports on August 2 only four cases of yellow fever in the entire republic—all at Vera Cruz.——Trains and boats from New Orleans and Panama are being watched.

FOREIGN.

Poisoning from Shellfish in Scotland.—Dr. A. K. Chalmers, medical officer of health for Glasgow, in a recent report to the town council, calls attention to the dangers of poisoning from shellfish. During past summers many cases of enteric fever have been traced to consumption of shellfish at seaside resorts. For example, in connection with the Lochgilphead cases of enteric fever of two years ago, the regular gatherers of shellfish at that place rejected such as were regarded by them as "sick" because they lay on the surface, while the visitors collected and ate these without hesitation, not knowing that the healthy mollusc of the species then implicated was to be found below the surface of the sand. Thus, while visitors sickened after consuming shellfish gathered on the spot, no cases were traceable among the consumers of those dispatched to Glasgow in the course of trade.

South African Medical Congress.—The seventh South African Medical Congress was held at Maritzburg, June 12-17. Over seventy medical men were present, a record attendance, as in the majority of cases as great sacrifice of time and money was involved as for physicians in this country to attend the Portland session of the American Medical Association. The address of welcome was delivered by the governor of Natal. The *Natal Mercury*, kindly sent us by Dr. W. A. Backenstoe, states that Dr. Hyslop, in his presidential address, laid emphasis on the necessity for uniformity in the compilation of vital statistics and for uniformity in medical laws throughout the various South African colonies. A discussion took place on the report of a committee appointed at the last congress to consider the subject of forming a South African Medical Guild as a center for medical organization for all matters other than scientific work. The principle of a guild was adopted, but later a proposal definitely to instruct the committee to carry the principle into effect was dropped and it is understood that those interested in the subject will move on their own responsibility. The feeling that some such organization is urgently needed is universal, and although a strong party maintains that the work could be done by the branches of the British Medical Association, an insuperable obstacle to this lies in the objection of the practitioners in the Transvaal and the Orange River Colony to establish branches; while unless an organization extends over all the colonies it would be of little use.

Correspondence

Compensation of Physicians as Expert Witnesses.

Chicago, Aug. 11, 1905.

To the Editor:—In The Journal, Aug. 5, 1905, page 420, reference is made to the Nebraska case of Main vs. Sherman County, where it was decided, as has often been done in similar cases, that "one testifying as an expert on a subject requiring special knowledge and skill, in the absence of a special contract is entitled only to the statutory fee." The details of this particular case are unknown to me, but I do know that often the physician's testimony and advice constitute the determining factor in many law suits. I know also, by personal experience, that only too often such assistance is forgotten as soon as a favorable decision is rendered, and that even a moderate compensation for his services is refused. In order that the profession may not continue to be ruthlessly mulcted and shamefully imposed on, I beg to direct attention to the decision of the Appellate Court of the First District of Illinois, filed Dec. 23, 1898, in my case against Emlen S. Blye, where the judgment of the Circuit Court is reversed and the cause remanded. The details of this case were presented by me to the Illinois State Medical Society at its Galesburg meeting, May 18, 1898, and are published in the official transaction of the society for that year, as well in the *Medical Record*, Aug. 27, 1898. The result of my contention, which extended over nine years, conserves to some extent the rights of expert witnesses. It determines that if a physician, at the request of a party to a suit, performs any extra service for such party in the prosecution of the suit, a contract for compensation for such services is a valid one, and a recovery can be had thereunder. The point as to the legality of contract for extra compensation beyond the statutory witness fee, for the mere giving of expert testimony, was not raised. It is possible the Dixon decision has definitely settled that question. As an expert always renders some service beyond that of merely testifying, in the way of counseling with attorneys, if not otherwise, the probability is that the effect of the Dixon decision is nullified. In any event, members of the profession are now protected against those who would accept the benefit of their services and then repudiate the contract under which these services are rendered, provided only the contract to be for more than the naked testimony.

When called as an expert witness, therefore, the physician in most instances may confess his inability to answer satisfactorily the hypothetical question without an examination of the patient, which must be paid for. As the court expressly said in the well-known Dixon case: "A physician can not be punished for a contempt for refusing to make a postmortem examination, unless paid therefor, nor can he be required to prepare himself in advance for testifying in court by making an examination, or performing an operation, or resorting to a certain amount of study, without being paid therefor." I am anxious that the rights of the physician in these cases should be understood. I received nothing in my case but my experience, for the patient went into bankruptcy about the time the decision was rendered in my favor. Nevertheless, it gives me much satisfaction to say that my legal fight of nine years established a principle which the profession is entitled to take advantage of and which, I trust, will tend to prevent further injustice and imposition.

Denslow Lewis.

Association News

Biographical Card Index and American Medical Directory.

In accordance with the decision of the House of Delegates at the Portland session, the American Medical Association is accumulating data for a biographical index of the medical profession of the United States, and also material for the American Medical Directory, which will shortly be issued. The assistance and co-operation of physicians is requested in this effort to publish a reliable directory of our profession without any suggestion of commercialism. In this connection we desire to call attention to advertising page 61. We hope that every reader of The Journal will give this matter his immediate attention.

Marriages

E. P. Brown, M.D., to Miss May Belle Hill, both of Bessemer, Ala.

Dickinson Gorsuch, M.D., to Miss Irene Evans, both of Baltimore, August 9.

J. Boyd Swonger, M.D., to Miss Mabel Broome, both of Voth, Texas, July 31.

W. E. Pugh, M.D., to Miss Austin, both of Miami, Fla., at DeLand, Fla., July 31.

William H. Lence, M.D., Jonesboro, Ill., to Miss Mary Alden of Anna, Ill., August 2.

Carl S. Wasseweiler, M.D., to Miss Edith Dunold, both of Milwaukee, in Chicago, July 17.

Ernest S. Mattox, M.D., Terre Haute, Ind., to Miss Emma Meseke of Seymour, Ind., August 3.

Hubert D. Brennan, M.D., Bristol, Conn., to Miss Celia Fanning of Hartford, Conn., August 2.

D. Nicola Golino, M.D., Providence, R. I., to Miss Carlotta Menente of Italy, at Boston, August 1.

John H. Doyle, M.D., Grafton, W. Va., to Annie C. Greany, M.D., of Fall River, Mass., August 10.

Homer F. Parr, M.D., Magdalena, Mexico, to Miss Maude Hitchcock of Wellington, Kan., June 28.

Hartzell Langstaff, M.D., Roberts, Ill., to Miss Martha J. Shute of Melvin, Ill., at Chicago, July 8.

James Cleland, M.D., Jr., to Miss Anna Estelle Siebert, both of Detroit, at New York City, July 31.

William Pitt Hall, M.D., Frankfort, N. Y., to Miss Susie Marie Douglass of Earlville, N. Y., July 26.

Bernard N. McLaffery, M.D., to Mayme Jeffries, M.D., both of Portland, Ore., at Ogden, Utah, July 26.

Frank R. Strong, M.D., Syracuse, N. Y., to Miss Hallie Gerdeane Morgan of Earlville, N. Y., August 2.

Richard J. Dowdall, M.D., to Miss Katherine Johnson, both of Crescent City, Cal., at San Francisco, August 3.

William Crozier Fawcett, M.D., Starkweather, N. D., to Miss Frances Edith Maywood of Toronto, August 1.

Luther Peck, M.D., Plymouth, Mich., to Miss Jeanne Thompson of Rochester, N. Y., at Union Lake, Mich.

Louis Smirnow, M.D., Bridgeport, Conn., to Miss Mabel A. Munn of Botsford, Conn., at New York City, February 17.

Walter Vernon Brem, M.D., Charlotte, N. C., to Miss Marion Wolcott Winkler of Milwaukee, at Pine Lake, Wis., August 3.

Deaths

L. J. Frazee, M.D. Medical Department of the University of Louisville, 1841, for many years a member of the faculty of his Alma Mater and of the Kentucky School of Medicine, and in his day one of the leading physicians, medical teachers and writers of his city, but for many years retired from practice and devoted to industrial and literary pursuits, died at his home in Louisville from senile debility, Aug. 12, 1905, aged 86.

Joseph Samuel Demaree, M.D. Memphis (Tenn.) Hospital Medical College, 1898, of Frankfort, Ky., a member of the state and county medical societies, died at the home of his father, near Bagdad, Ky., August 4, from typhoid fever, after an illness of five weeks, aged 38. At a meeting of the Franklin County Medical Society, August 5, resolutions of eulogy and regret were adopted.

Robert Fowler Beattie, M.D. McGill University Medical Department, Montreal, 1897, Brookline, Mass., a member of the Massachusetts Medical Society, was drowned off Phillips Beach, Swampscott, August 6, while taking his morning plunge, aged 35. For several years he served as ship's surgeon on the Cunard and Dominion lines.

Thomas J. Mitchell, M.D. University of Louisville (Ky.) Medical Department, 1848, surgeon of the One Hundred and Seventh Illinois Volunteer Infantry in the Civil War, and a prisoner in Libby Prison, died at his home in Bement, Ill., August 3, from dropsy, after an illness of more than a year, aged 82.

Horace Laidlaw, M.D. University of California Medical Department, San Francisco, 1880, chief surgeon of the Oceanic Steamship Company for five years, and surgeon to the Spreckels plantations at Maui, Hawaii, for three years, died at his home in San Francisco, August 2, after a long illness, aged 45.

Robert Edwin Jameson, M.D. Harvard University Medical School, Boston, Mass., 1861, assistant surgeon and surgeon to the Eleventh Massachusetts Volunteer Infantry during the Civil War, died at his home in Jamaica Plain, Boston, August 4, from acute gastritis, after an illness of three hours, aged 67.

Orange H. Adams, M.D. Dartmouth Medical School, Hanover, N. H., 1884, a member of the American Medical Association, prominent in the medical and municipal life of Vineland, N. J., died at his home in that place, from spinal paralysis, August 6, after an illness of one week, aged 49.

Frank B. Donnelly, M.D. New York University, New York City, 1893, ill with tuberculosis, and discharged from the Rhode Island Hospital as incurable, committed suicide by shooting himself, in his office in Providence, R. I., while despondent, August 3, aged 42.

Robert Maitland Petrie, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1869, in 1872 and 1874 city physician of Jersey City, N. J., died suddenly at his home in Jersey City, August 3, from heart disease, aged 54.

John Gilman Pike, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1847, one of the oldest practitioners of Strafford County, N. H., died at his home in Dover, July 31, after a long period of feeble health, aged 87.

Merritt E. Graham, M.D. Michigan, 1878, of Rochester, N. Y., for nine years coroner of Monroe County, died at the Graham Sanatorium, Rochester, August 3, from disease of the stomach, after an illness of three years, aged 49.

E. G. Martin, M.D. University of Louisville Medical Department, 1905, of Rocky Hill, Ky., died at Glasgow, Ky., July 21, from the effects of an overdose of morphin, taken, it is supposed, with suicidal intent.

John W. Morrow, M.D. Jefferson Medical College, Philadelphia, 1872, said to be the oldest practitioner in Forest County, Pa., died at his home in Tionesta, August 5, after an illness of several years, aged 68.

Dowdell Wood Allen, M.D. Medical Department of the University of Tennessee, Nashville, 1905, died at his home in Winona, Texas, May 25, from typhoid fever, after an illness of 32 days, aged 23.

Julius C. Bowen, M.D. Jefferson Medical College, Philadelphia, 1856, major-surgeon of the Second Iowa Volunteer Cavalry in the Civil War, died at his home in Rochester, N. Y., August 2, aged 74.

Seth D. Boggs, M.D. Bellevue Hospital Medical College, New York City, 1886, died suddenly while being carried into his house in Brooklyn, N. Y., August 10, from heart disease, aged 53.

William Ray Bramlett, M.D. University of Louisville (Ky.) Medical Department, 1881, died at his home in Florence, Ala., August 2, from septicemia, after an illness of two months, aged 43.

John C. Coats, M.D. Vanderbilt University Medical Department, Nashville, Tenn., 1878, died at his home in Huntsville, Ala., July 30, after an illness of only three days, from typhoid fever.

Frederick Brittin, M.D. College of Physicians and Surgeons of Chicago, 1904, of Divernon, Ill., died at the home of his parents in Springfield, Ill., from septicemia, July 31.

Orville A. Harding, M.D. Rush Medical College, Chicago, of Chicago, was drowned while hunting, in the Flambeau River, near Ladysmith, Wis., August 11, aged 35.

Joseph W. Kumpe, M.D. Medical College of Alabama, Mobile, 1873, died at his home in White Sulphur Springs, Mont., August 4, after a lingering illness, aged 58.

Daniel R. Crow, M.D. Memphis (Tenn.) Hospital Medical College, 1891, died at his home in Lay, Miss., August 2, from heart disease, after a long illness.

Louis A. Hortubise, M.D. Laval University Medical Department, Quebec, 1894, died at his home in Lowell, Mass., August 5, after a long illness, aged 33.

William R. Nevin, M.D. New York, 1887, died at his home in Jersey City, N. J., from cirrhosis of the liver, August 2, after a long illness, aged 45.

James Parker, M.D. Trinity Medical College, Toronto, Ont., 1871, died at his home in Ballard, Wash., August 2, from heart disease, aged 63.

David L. Deyo, M.D. Missouri, 1869, of Louisiana, Mo., died at St. Elizabeth's Hospital, Belleville, Ill,. August 1, aged 79.

Philip Fischer, M.D. University of Würzburg, Germany, 1868, died at his home in Cincinnati, August 9, aged 60.

Book Notice

The Pharmacopeia of the United States of America, By Authority of the United States Pharmacopeial Convention held at Washington, 1900. Eighth Decennial Revision. Revised by the Committee of Revision and published by the Board of Trustees. Official from Sept. 1, 1905. Cloth. Pp. 692. Price, $2.50. Philadelphia: P. Blakiston's Son & Co.

After five years' labor the revision of the Pharmacopeia of the United States has been effected and the work appears in a stately volume of 700 pages. Following precedent, 70 pages are devoted to a historical introduction, abstract of the proceedings of the national convention for revising the Pharmacopeia, with a list of the delegates from the various medical and pharmaceutical bodies and of the federal medical service represented, preface and introductory notices giving general directions for physical constants and standards, general processes and operations and a number of lists, i. e., of articles added, articles dismissed, changes in official Latin and English titles and comparative table showing the strength of the more important pharmacopeial substances and preparations in the preceding and the present Pharmacopeia. Then follows the text of the official articles, comprising over 500 pages, with the definitions in large, clear type and the tests in smaller print. While many new articles have been added, the number has not been increased, since an equal number of articles has been dismissed. The principal additions comprise twenty synthetical chemicals, an equal number of natural or synthetic principles representing the volatile oils, the suprarenal and thyroid glands, antidiphtheritic serum, a number of fluid extracts, several elixirs, emulsions, solutions, oleats, ointments, tinctures and effervescent salts. The dismissals are represented largely by drugs more or less obsolete and their respective extractive preparations, a number of pharmaceutical preparations superseded by more eligible and definite preparations and certain salts inorganic and organic now, but little used. The principal changes are represented by the change in titles of some chemicals, such as the acids of arsenic and chromium to arseni trioxidum and chromii trioxidum respectively, from carbolic acid to phenol, and chloral to chloral hydratum, the latter to conform to their chemical character. The chemical nomenclature has been retained in preference to that adopted by the American Association for Advancement of Science, in which the final "e" is deleted in the halogens and alkaloids. The pharmacopeial usage in distinguishing between alkaloids and glucosids by omitting the final "e" in the latter seems too popular to give way to the continental method adopted by the American Chemical Society. An innovation is the so-called purity rubric, which appears as a short definition at the head of all definite chemical compounds through which the minimum degree of purity of the articles is limited, thus: Potassium iodid KI 164.76. "It should contain not less than 99 per cent. of pure potassium iodid, and should be kept in well-stopped bottles." This allows not to exceed 1 per cent. unavoidable innocuous impurities, which are strictly limited in the nearly solid page of fine print giving tests and reactions, by which the merest trace of noxious impurities, heavy metals, etc., are absolutely excluded. In this respect the work is believed to be the most complete of any pharmacopeia and satisfactory from a pharmaceutical standpoint. While the changes in the strengths of articles, particularly galenicals, are not numerous, yet they are important, since the principles of standardizing drugs and their preparations has been extended to some sixteen drugs and many of their preparations. The most important change of all, however, at least from the physician's standpoint, is the change in the strength of some of the tinctures. In conformity with requirements of the International Conference for the Unification of Potent Medicines of 1902, the tinctures, except the compound ones, have been put in two groups: (1) Tincture of potent drugs to be 10 per cent. drug strength; and (2) of non-potent drugs 20 per cent. drug strength. Thus the 15 per cent. tinctures, including most of the so-called narcotic drugs, have been discarded for the 10 per cent. strength, and are, therefore, one-third weaker. The two largely used tinctures, aconite and veratrum viride, 35 and 40 per cent. drug strength respectively, have thus been reduced to the 10 per cent. strength. This is of the greatest importance to physicians and should have the widest publicity so that the fact may be generally recognized by September 1, when the new Pharmacopeia goes into effect—becomes official. Another innovation is the introduction of the average doses expressed in metric and customary weights and measures. This is not intended as a limitation on the physician, but simply an attempt to furnish some sort of official or authoritative standard for reference to pharmacists, especially as a guide in compounding and dispensing prescriptions. In order to avoid conflict with federal, and especially state, laws regulating standards for articles of food, it is especially announced in the preface that the standards of the United States Pharmacopeia are designed for and apply only to the articles for medicinal uses as distinguished from their employment as foods or in technical and industrial uses. The usual appendix of reagents and a valuable collection of tables for reference completes the volume, which, barring some minor deficiencies, is certainly the most elaborate pharmacopeia yet devised for any country.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

LIFE AND HABITS OF THE MOSQUITO.

Whitewright, Texas, Aug. 6, 1905.

To the Editor:—Please inform me where I can procure a recent work on the anatomy, habits and habitat of the various species of the mosquito S. H. Landrum, M.D.

Answer.—Our correspondent is one of many who ask the same question. "The Mosquito," by Howard, cloth, $1.50, is a good book.

An excellent article on the subject, by Dr. John R. Taylor, Havana, Cuba, was published in The Journal, July 8, 1905, page 90. The best information is to be had in the bulletins of the United States Public Health and Marine-Hospital Service, which may be had by addressing the surgeon general, Dr. Walter Wyman, Washington, D. C.

INTERNATIONAL MEDICAL CONGRESS.

McKeesport, Pa., Aug. 9, 1905.

To the Editor:—Will you kindly inform me of the date of the meeting of the International Medical Congress in Lisbon next year? T. L.

Answer.—The International Medical Congress will meet April 19 to 26, 1906. The date and the program are given in The Journal, July 29, p. 337. Other information is in July 22, p. 262 (report of American Committee), June 17, pp. 1941 (excursion announcement) and 1942, and in Vol. xliv, pp. 139, 881, 1046, 1129 and 1140.

PHYSICIANS' CARDS IN NEWSPAPERS.

Dr. L. sends us the cards of some physicians from local newspapers, and asks us if they are strictly ethical. In addition to the name, address and telephone numbers, one of these cards states that the advertiser is "Surgeon to —— hospital, Surgeon to —— railway. United States examining surgeon, etc." The other gives similar facts, and in addition states: "Glasses accurately fitted. Surgery, and diseases of women."

Answer.—The profession generally regards as reprehensible the advertisement in newspapers by physicians of anything more than name, address, office telephone numbers, and special branches to which practice is limited. The details of the interpretation of this general rule, however, are to be handled by the local county medical society. Our correspondent and others will be interested in referring back to what we have already said on this subject in The Journal, Aug. 13, 1904, p. 485; Oct. 3, 1904, p. 1073; and May 20, 1905, p. 1631.

DETERIORATION OF APOMORPHIN HYDROCHLORATE.

Columbus, Ga., Aug. 3, 1905.

To the Editor:—What chemical change takes place when apomorphin hydrochlorate changes color from age? Is this a deterioration, and is the resulting compound poisonous? M. C.

Answer.—This is so unstable a compound that the U. S. Pharmacopeia (1905) directs that it should be kept in small, dark, amber-colored vials which have been previously rinsed with diluted hydrochloric acid and dried. The compound of this alkaloid prepared artificially from morphin with HCl is so delicate that on exposure to light and air it acquires a greenish tint, showing decomposition. The exact nature of the chemical change is obscure. When discolored the article should not be used.

GERMAN MEDICAL JOURNALS AND DICTIONARIES.

Detroit, Mich., Aug. 5, 1905.

To the Editor:—The physicians, Drs. Chassell and Bush, who inquired for German-English dictionaries, etc., would undoubtedly appreciate the German and English dictionary edited by Frederick Treves and Hugo Lang, published by J. & A. Churchill, 11 Burlington Street, London, England. L. Breisacher.

State Boards of Registration

COMING EXAMINATIONS.

Wyoming State Board of Medical Examiners, State Capitol, Cheyenne, Wyo., September 6. Secretary, S. B. Miller, Laramie.

Massachusetts Board of Registration in Medicine, State House, Boston, September 12-13. Secretary, E. B. Harvey, Boston.

Index to State Board Reports.—Reports of other state board examinations which have been held this year have been published in The Journal as follows: February 11, page 488, Arizona January report. February 18, page 566, District of Columbia and Oregon January reports. February 25, page 646, Indiana, North Dakota, Rhode Island and South Dakota January reports. March 4, page 732, Wisconsin January report. March 11, page 810, Vermont February report. March 18, page 896, Illinois and Washington January reports, with the questions asked in Washington. April 1, page 1059, Kansas February report. April 15, page 1211, Maine March report, with the questions asked in Oklahoma at the examination held in March. April 22, page 1303, Connecticut March report, and Montana and North Dakota April reports. May 6, page 1467, Arkansas April report, Nebraska February report, Oklahoma March report, and Utah January and April reports. May 13, page 1553, Rhode Island and Minnesota April reports, with questions asked in Minnesota. May 20, page 162, California, Indian Territory, Idaho and Kentucky April reports, with questions asked in Kentucky. May 27, page 1699, Arizona and West Virginia April reports. June 3, page 1795, District of Columbia April report. June 17, page 1950, North Carolina May report, with list of questions asked. June 24, page 2001, Illinois April report and Louisiana May report. July 1, page 60, Illinois May report. July 8, page 125, Indiana May report. July 15, page 209, Kansas April report, Minnesota and Wyoming June reports, and questions asked at Pennsylvania June examination. July 29, page 344, New Jersey and Delaware June reports, and Utah July report. August 12, page 487, Arkansas July report and South Carolina June report.

Connecticut July Report.—Dr. Charles A. Tuttle, secretary of the Medical Examiners of the Connecticut Medical Society, reports the written examination, held at New Haven, July 11-12, 1905. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of persons examined was 27, of whom 23 passed and 4 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Yale University, (1902) 80.1, (1904) 78.7, (1905) 78.1, 80.1, 81.4, 81.8, 86.5.		
University of Pennsylvania	(1901)	78.2
Tufts Med. Coll.	(1905)	75.6
College of P. and S., New York...(1903) 84.2;	(1905)	82
Jefferson Med. Coll.	(1905)	77.2, 81.4
University of New York	(1880)	77.6
University of Vermont	(1901)	78.4
Baltimore Med. Coll.	(1905)	79.6
University of Maryland ....(1901) 78.1;	(1905)	82.3
College of P. and S., Boston	(1904)	75.6
College of P. and S., Baltimore	(1905) 76.2, 79.9	80.1
College of P. and S., Cleveland	(1905)	77.3
FAILED.		
Long Island College Hospital	(1896)	73.2
Maryland Med. Coll.	(1905)	60.7
University of Michigan	(1890)	72
Tufts Med. Coll.	(1905)	68.6

Illinois May Report.—Dr. J. A. Egan, secretary of the State Board of Health of Illinois, reports the written examination held at Chicago, May 3-5, 1905. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 417, of whom 410 passed and 7 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
American Coll. of Med. & Surg. (1904) 75; (1905). The grades of 76 and 77 were reached by one each; 78 was reached by five; 79, by three; 80, by five; 81, by five; 83, by three; 84, by one; 85, by two; 86 by one; 87 by three; 89 and 90 by one each.		
Barnes Med. Coll.	(1904)	78
Bellevue Hosp. Med. Coll.	(1880)	1
Bennett Med. Coll. (1905). The grade of 78 was reached by one; 79, by four; 80, by one; 81, by two; 82, by three; 83, by four; 84, by four; 85, by one; 88, by 2.		
Cleveland Homeo. Med. Coll.	(1905)	85, 86
College of Med. and Surg., Chicago (1904) 76; (1905) 79, 81, 82, 91		
College of P. & S., Chicago (1904) 78, 90 (1905). The grade of 77 was reached by one; 78, by four; 79, by three; 80, by five; 81, by nine; 82, by eighteen; 83, by fourteen; 84, by twenty-two; 85, by nineteen; 86, by sixteen; 87, by thirteen; 88, by nine; 89, by three; 90, by three; 92 and 95, by one each.		
Dearborn Med. Coll.	(1905)	82, 85, 86, 86, 87, 86
Eclectic Med. Inst., Cincinnati......(1885) 77;	(1905)	77
Hahnemann Med. Coll., Chicago (1905). The grade of 79 was reached by seven; 80, by three; 81, by four; 82, by eight; 83, by one; 84, by six; 85, by two; 86, 87, 88, by one each; 89, by two.		
Harvey Med. Coll.	(1905)	81, 84, 88
Hering Med. Coll.	(1905)	77, 80, 81, 82, 82, 82, 84, 86, 88
Illinois Med. Coll.	(1905)	77, 81, 82, 82, 83, 88
Jenner Med. Coll........(1904) 82;	(1905)	76, 80, 80, 81, 83, 87
National Med. Univ., Chicago (1904) 85;	(1905)	75, 76, 77, 78, 80, 82.
Northwestern University (1905). The grades of 79, 81, 82 and 94 were reached by one each; 83 was reached by four; 84, by six; 85, by five; 86, by eight; 87, by five; 88, by nine; 89, by fourteen; 90, by eight; 91, by six; 92, by three; 93, by two.		
Rush Med. Coll. (1903) 82; (1904) 86, 87, 90, 90, 94 (1905). The grades of 81, 82 and 91 were reached by one each; 83 was reached by two; 84, by two; 85, by two; 86, by four; 87, by six; 88, by eight; 89, by five; 90, by three; 92, by three.		
Toledo Med. Coll.	(1905)	82, 84, 85, 86, 86, 87
Western Med. Coll., London, Ont.	(1905)	84, 88
FAILED.		
College of Med. & Surg., Chicago	(1905)	73, 74
Illinois Med. Coll.	(1905)	65
Jenner Med. Coll.	(1905)	71
Physio-Medical Coll., Indianapolis	(1887)	56

The general average attained by all representatives of the

American College of Medicine and Surgery who passed was 81.4; by representatives of Bennett Medical College, 82.2; of the College of Medicine and Surgery, Chicago, 81.8; of the College of Physicians and Surgeons, Chicago, 84.2; of Hahnemann Medical College, Chicago, 82.3; of Illinois Medical College, 82.1; of Jenner Medical College, 81.2; of National Medical University, 79; of Northwestern University, 87.6; of Rush Medical College, 88.3.

Maine July Report.—Dr. W. J. Maybury, secretary of the Maine Board of Registration of Medicine, reports the examination, partly oral and partly written, held at Augusta, July 11-12, 1905. The number of subjects examined in was 10; total number of questions asked, 100: percentage required to pass, 75. The number of individuals examined was 44, of whom 41 passed and 3 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Boston University,	(1904) 84.3, 89.8, 83.4; (1905) 80.1,	77.6
Medical School of Maine	(1905) 82.4, 75.5, 84.5, 86.6, 90.2, 82.8, 78.5, 81, 93.2, 84.6, 79.3, 87.6, 77.5, 87.4, 84.6, 80.7.	
College of P. & S., Boston	(1905) 80.2,	81.4
Jefferson Med. Coll	(1905) 79.3, 86.9,	78.3
Johns Hopkins University	(1905)	88.5
Albany Med. Coll	(1905)	87.2
McGill University	(1899)	77.2
Columbia University	(1892) 75; (1899)	93.2
University of Vermont	(1905) 90.1,	78
Baltimore Med. Coll	(1905)	86.8
Woman's Med. Coll., Philadelphia	(1905)	87.1
Harvard University	(1905) 81.1,	93
Medico-Chirurgical Coll., Philadelphia	(1905) 92,	83.5
University of Pennsylvania	(1905) 80.3,	90.6

The general average attained by all representatives of the Medical School of Maine who passed was 83.5.

New Hampshire July Report.—Dr. H. C. Morrison, regent of the New Hampshire State Board, reports the written examination held at Concord, July 7-8, 1905. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 20, of whom 15 passed and 5 failed. The following colleges were represented:

PASSED.

Colleges.	Year Grad.	Per Cent.
Tufts Med. Coll.	(1902) 82;* (1905)	84
Dartmouth Med. Coll.	(1904) 76; (1905) 82, 87,	83
Harvard University	(1904) 82; (1905)	88
College of P. and S., New York	(1896) 80; (1905)	86
Jefferson Med. Coll.	(1905)	79
Detroit Coll. of Medicine	(1905)	77
McGill University	(1904)	81
Johns Hopkins University	(1904)	87
Maryland Med. Coll.	(1903)	75*
FAILED.		
Laval University	(1904) 61.5,* 73.8;* (1903)	62.1
Jefferson Med. Coll.	(1905)	73.9
Illinois Med. Coll.	(1902)	73.1

*Second Examination.

Ohio June Report.—Dr. T. Windero, secretary of the State Board of Medical Registration and Examination, reports the written examinations held at Columbus, Cleveland and Cincinnati, June 13-15, 1905. The total number of candidates examined was 192, of whom 188 passed and 4 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Miami Med. Coll. (1905). The grades of 94, 83 and 82 were reached by one each: 85, 84, 87, 80, 93, 90, 91 by two each; 88 was reached by three.		
Eclectic Med. Inst., Cincinnati (1881) 88; (1905). The grades of 77,* 83, 75, 85, 89 and 95 were reached by one each; 80 and 88 by two each.		
Pulte Med. Coll	(1905) 85,	85.91
Medical College of Ohio (1905). The grade of 85 was reached by four; 86, by two; 87, by five; 88, by two; 89, by three; 90, by three; 91, by one; 92, by two; 93, by four; 94, by two.		
Western Reserve Univ. (1905). The grades of 87, 89, 93 and 97 were reached by one each; the grade of 88 was reached by four; 90, by two; 91, by two; 92, by four; 96, by two. The grade attained by one individual is not stated.		
Cleveland Homeo. Med. Coll. (1904) 85; (1905) 88, 83, 89, 90, 90, 85, 79, 92, 81, 86.		
College of P. & S., Cleveland. The grades of 81, 82, 84, 87, 90, 95 and 96 were reached by one each; 89 was reached by three; 91, by two, and 92 by two.		
Ohio Med. University (1905). The grades of 81, 78, 85, 82, 92, 93 and 91 were reached by one each; 84 was reached by five; 86, by two; 87, by two; 88, by four; 89, by four; 90, by four.		
Starling Med. Coll. (1905). The grades of 76, 77, 78, 79, 80, 86, 88, and 89 were reached by one each; 75 was reached by two; 81, by four; 83, by three; 84, by three; 85, by three; 87, by two; 90, by two.		
Hahnemann Med. Coll., Philadelphia	(1905)	90
Leonard Med. Coll	(1905)	75
College of P. & S., New York	(1902)	92
Univ. of Mich. Homeo. Dept.	(1905) 88, 86,	90
Cincinnati Coll. of Med. & Surg.	(1901)	83
Queen's Med. Coll., Toronto	(1904)	81
Baltimore Med. Coll.	(1905)	89
Johns Hopkins University	(1902) 93, 90; (1905)	90
Harvard University	(1902)	83
University of Toronto	(1903)	96
Medico-Chirurgical Coll., Philadelphia	(1905)	96, 91
University of Michigan	(1905)	92
University of Pennsylvania	(1902)	75
Univ. and Bellevue Hosp. Med. Coll	(1905)	85
Jefferson Med. Coll.	(1905) 83, 88, 89,	92
University of Buffalo	(1892)	88
Women's Med. Coll. of Penn.	(1905)	95
University of Iowa	(1905)	80
Detroit Coll. of Med.	(1893)	87
FAILED.		
Eclectic Med. Inst., Cincinnati	(1905)	—
Starling Med. Coll.	(1905)	—
Ohio Med. Coll.	(1905)	—

The general average attained by all representatives of Miami Medical College, who passed, was 87.3; of Eclectic Medical Institute, 84.3; of Medical College of Ohio, 85.8; of Western Reserve University (excepting one whose percentage is not stated), 91.1; of Cleveland Homeopathic Medical College, 86.1; of Cleveland College of Physicians and Surgeons, 82; of Ohio Medical University, 86.8; of Starling Medical College, 82.8.

*Second examination.

Pennsylvania Homeopathic Report for June.—The Homeopathic Medical Society of Pennsylvania reports the written examination held at Philadelphia, June 27-30, 1905. The total number of applicants examined was 36, all of whom passed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Hahnemann Med. Coll., Philadelphia, (1902) 76.28, 82.28, 92.28; (1905) 87.28, 89.28, 86.14, 94.14, 80.14, 92.42, 88, 92.57, 85.71, 88.57, 94.85, 87.57, 89.42, 93.14, 89.57, 84.85, 90.71, 94.71, 88.57 90.85, 88.57, 81, 92.57.		
Cleveland Homeo. Med. Coll. (1905) 93.14, 90.28, 88.28, 89, 57, 87.		
Southern Homeo. Med. Coll.	(1904) 87.28;* (1905) 95.14,	92.14
Dunham Med. College, Chicago	(1902)	99.28
Hering Med. College, Chicago	(1905)	92.71

The general average attained by all representatives of the Hahnemann Medical College of Philadelphia was 88.9.

* Second examination.

Pennsylvania Eclectic Report for June.—The Eclectic Medical Society of Pennsylvania reports the written examination, held at Harrisburg, June 27-30, 1905. The total number of candidates examined was 19, of whom 15 passed and 4 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Baltimore Med. Coll.	(1905) 83.3, 80,6	80.6
Eclectic Med. Inst. Cincinnati	(1905) 78.4, 85.5	91.4
Eclectic Med. Coll. of Indiana	(1904)	80
Maryland Med. College	(1904) 95;* (1905) 81.4, 82.3	80.4
Western Pennsylvania Med Coll.	(——)	75.2**
Medico-Chirurgical Coll., Philadelphia	(1905)	82.8
Temple Med. Coll., Philadelphia	(1904)	75.7
University of Baltimore	(1904)	77.1*
FAILED.		
Baltimore Medical College	(1901)	72.3†
College of P. and S., Baltimore	(1904)	71.9††
University of Naples	(1894)	72.4
University of the South	(——)	67.4*

*Second examination.
**Seventh examination.
†Ninth examination.
††Third examination.

Rhode Island July Report.—Dr. Gardner J. Swartz, secretary of the Rhode Island State Board of Health, reports the examination held at Providence, July 11, 1905. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The number of applicants examined was 33, 28 of whom passed, and 5 failed. The following colleges were represented:

PASSED.

Colleges.	Year Grad.	Per Cent.
Baltimore Med. Coll.	(1905) 87,	87.4
Bellevue Hosp. Med. Coll.	(1905)	78.1
College of P. and S., Baltimore	(1905) 75.5, 76.2,	79.1
College of P. and S. Boston	(1905) 75,	85.9
College of P. and S., New York	(1905) 87.6; (1896)	83
Cornell University	(1905)	89.6
Harvard University	(1905) 84.4,	76.6
Jefferson Med. Coll.	(1905)	90.1
Long Island Coll. Hosp.	(1905)	75
Maryland Med. Coll.	(1904)	78.7
Syracuse University	(1904)	81.6
Tufts Coll. Med. Dept.	(1905) 80.6,	85.3
University Medical Coll.	(1879)	75
University of Maryland	(1905) 82.9,	75
University of Naples	(1899) 88.7,	78.9
University of Pennsylvania	(1903)	91
University of Vermont	(1898)	75
Woman's Med. Coll. of Pa	(1901)	83.6
Yale University	(1905)	83.7
FAILED.		
Baltimore Med. Coll.	(1902)	62
Baltimore University	(1905)	61.6
College of P. and S. Boston	(—) 69.1; (1904)	68
Laval University	(1905)	69.6

Vermont July Report.—Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the written examination held at Burlington, July 11-13, 1905. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 32, all of whom passed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
University of Vermont,	(1905)	86.5, 86.2, 83.6, 82.5, 85.3, 82.2, 82.2, 88.2, 89.4, 81.11, 86.10, 84.7, 84.6, 82.3, 86.6, 84.11, 80.9, 85.11, 85.5, 86.3, 85.6, 85.
Hahnemann Med. Coll., Philadelphia	(1905)	85.3
Dartmouth Med. Coll.	(1905)	85.9
College of P. and S., Baltimore	(1905)	87.7
Albany Med. Coll	(1905)	87.7
University of Maryland	(1905)	88.2
Kentucky School of Medicine	(1904)	82.11
Tufts Medical College	(1905)	83.2
Columbia University	(1905)	87.9
Baltimore Med. College	(1905)	84.7
Laval University	(1904)	77.6*

The general average attained by all representatives of the University of Vermont was 84.7.

* Second examination.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Aug. 12, 1905:

Skinner, George A., asst.-surgeon, left Fort Harrison, Mont., on practice march.

Moseley, E. B., deputy surgeon-general, left chief surgeon's office, Denver, on thirty days' leave of absence.

Yost, John D., asst.-surgeon, granted thirty days' leave of absence.

Bourke, James, asst.-surgeon, relieved from temporary duty at Fort McHenry, Md., and ordered to Fort Howard, Md., for temporary duty during the absence of Asst.-Surgeon Compton Wilson, on whose return to Fort Howard, Lieut. Bourke will return to duty at the Medical Supply Depot, New York City.

Kiersted, Henry S., asst.-surgeon, relieved from duty at Presidio of Monterey, Cal., and ordered to Fort St. Michael, Alaska, for duty.

Pierson, Robert H., asst.-surgeon, relieved from duty at Fort St. Michael, Alaska, and ordered to Fort Gibbon, Alaska, for duty.

Hathaway, L. M., asst.-surgeon, relieved from duty at Fort Gibbon, Alaska, and ordered to proceed to Seattle, Wash., and report by telegraph to the military secretary of the Army for further orders.

La Garde, Louis A., surgeon, leave of absence extended thirty days.

Bispham, William N., asst.-surgeon, in addition to his other duties at Fort Logan, Colo., is announced as temporarily in charge of chief surgeon's office, Department of Colorado, during the temporary absence on leave of Lieut-Col. Edward B. Moseley, deputy surgeon general.

Borden, William C., surgeon, granted thirty days' leave of absence about Aug. 8, 1905.

Smart, William M., asst.-surgeon, having reported arrival at Seattle, Wash., is assigned to duty at Fort Caswell, N. C.

Buck, C. D., asst.-surgeon, left with recruits from Jefferson Barracks, Mo., en route to Fort Walla Walla, Wash.

Marshall, John S., examining and supervising dental surgeon, relieved from duty at the Presidio of San Francisco, and assigned to duty at the Army General Hospital, Presidio of San Francisco.

Van Kirk, Harry H., contract surgeon, granted leave of absence for one month from Fort Sill, Okla.

Long, Charles J., dental surgeon, left Fort Yellowstone, Wyo., and arrived at Fort Lincoln, N. D., for duty.

George, William R. S., contract surgeon, arrived at New York City, and, having been relieved from duty in Porto Rico, proceeded to Fort Monroe, Va., for duty.

Vaughan, Milton, contract surgeon, left Fort Douglas, Utah, and arrived at Fort Crook, Neb., for duty.

Tukey, William H., contract surgeon, granted leave of absence for two months.

Warwick, Clarence A., contract surgeon, arrived at San Francisco, Cal., and availed himself of leave of absence for four months from the Philippines Division.

Brown, Wilmont E., contract surgeon, granted leave of absence for two months.

Suggs, Frank, contract surgeon, relieved from further duty in the Philippines Division, and ordered to duty at Fort Mansfield, R. I., at the expiration of his present sick leave of absence.

Slater, Ernest F., contract surgeon, returned from leave of absence to duty at Fort Hancock, N. J.

Clayton, George R., contract surgeon, ordered from Columbus Barracks, Ohio, to San Francisco, Cal., with recruits, and to proceed thence to the Philippines Division for duty.

Lauderdale, Clarence E., dental surgeon, granted leave of absence for one month.

Macy, Fred S., contract surgeon, returned to Allegheny Arsenal, Pa., from leave of absence.

Kierulff, H. Newton, contract surgeon, relieved from duty in the Department of California, and ordered to duty in the Philippines Division.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Aug. 12, 1905:

Wise, J. C., medical director, orders of July 29, 1905, modified; ordered to report to the Surgeon-General of the Navy, Aug. 10, 1905, for duty in command of the Naval Medical School.

Boyd, J. C., medical director, ordered to additional duty as president of the Naval Examining Board, and Naval Medical Examining Board, Naval Medical School, Washington, D. C.

Sellers, F. E., asst.-surgeon, G. S. Hathaway, appointed asst.-surgeons, with rank of lieutenant (junior grade), from Aug. 1, 1905.

Spratling, L. W., surgeon, ordered to the Naval Station, New Orleans.

Taylor, J. L., asst.-surgeon, detached from the Naval Hospital, Pensacola, Fla., September 29, and ordered to Washington, D. C., October 2, for course of instruction at the Naval Medical School.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Aug. 9, 1905:

Irwin, Fairfax, surgeon, leave of absence for one month from Aug. 8, 1905, granted by Bureau letter of July 12, 1905, revoked.

Blue, Rupert, P. A. surgeon, to report at Washington, D. C., for special temporary duty.

Blue, Rupert, Currie, D. H., Greene, J. B., and McMullen, John, P. A. surgeons, and Rucker, W. C., Ebert, H. G., Smith, F. C., and Steger, E. M., asst.-surgeons, to proceed to New Orleans and to report to Surgeon J. H. White for special temporary duty.

Lavinder, C. H., P. A. surgeon, to proceed to Fontainebleau, Miss., and assume command of detention camp.

Stansfield, H. A., P. A. surgeon, relieved from duty in the Canal Zone, and directed to proceed to New York and report arrival by wire.

Amesse, J. W., P. A. surgeon, to proceed to Cairo, Ill., and assume temporary command of the service.

Ashford, F. A., asst.-surgeon. Bureau order of August 7, directing to proceed to New Orleans revoked, and directed to proceed to Immigration Depot, New York, and report to Suregon G. W. Stoner for duty.

McKeon, F. H., asst.-surgeon, relieved from duty at U. S. Marine Hospital, New Orleans, and directed to report to Surgeon J. H. White for special temporary duty.

Sweet, E. A., Frost, W. H., and Mullan, E. H., asst.-surgeons, to proceed to New Orleans and report to Surgeon J. H. White for special temporary duty.

Frost, W. H., asst.-surgeon, to proceed to Norfolk, Va., and assume temporary charge of the service.

Olsen, E. T., asst.-surgeon, relieved from duty at Immigration Depot, New York, and directed to proceed to New York (Stapleton), and report to medical officer in command for duty and assignment to quarters.

Boyd, F., acting asst.-surgeon, granted leave of absence for thirty days from Aug. 1, 1905.

Hunter, S. B., acting asst.-surgeon, granted leave of absence for thirty days from Aug. 1, 1905.

Keatley, H. W., acting asst.-surgeon, granted leave of absence for two days from Aug. 6, 1905, under the provisions of Paragraph 210 of the Regulations.

Safford, M. V., acting asst.-surgeon, granted leave of absence for four days from Aug. 4, 1905, under the provisions of Paragraph 210 of the Regulations.

Stewart, W. J. S., acting asst.-surgeon, granted leave of absence for thirty days from Oct. 1, 1905.

Tarbell, B. C., acting asst.-surgeon, granted leave of absence for five days from Aug. 20, 1905.

Townsend, W., acting asst.-surgeon, granted leave of absence for five days from Aug. 7, 1905.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the period from July 29 to Aug. 5, 1905:

SMALLPOX—UNITED STATES.

California: Los Angeles, July 15-22, 2 cases.

Illinois: Chicago, July 22-27, 6 cases.

Louisiana: New Orleans, July 15-29, 1 case, 4 deaths.

Michigan: Grand Rapids, July 22-29, 5 cases.

Missouri: St. Joseph, July 15-22, 1 case.

Montana: Butte, July 16-23, 1 case.

New Hampshire: Nashua., July 15-22, 1 case.

Ohio: Cincinnati, July 21-28, 2 cases; Toledo, July 15-22, 6 cases.

Pennsylvania: York, July 22-29, 1 case.

SMALLPOX—FOREIGN.

Argentine: Buenos Ayres, April 1-30, 43 deaths.

France: Paris, July 8-15, 6 cases, 2 deaths; St. Etienne, June 1-30, 2 cases.

Great Britain: London, July 8-15, 1 case.

India: Bombay, June 27-July 4, 7 cases; Karachi, June 25-July 2, 2 cases; Madras, June 24-30, 2 cases.

Russia: Moscow, July 1-8, 11 cases, 20 deaths; Odessa, June 17-July 15, 26 cases, 3 deaths; St. Petersburg, July 1-8, 5 cases, 3 deaths.

Spain: Barcelona, July 10-20, 4 deaths.

Turkey: Constantinople, July 8-16, 5 deaths.

YELLOW FEVER—UNITED STATES.

Louisiana: Morgan City, July 3, 1 case; Shreveport, Aug. 1, 1 case; New Orleans, July 21-Aug. 3, 308 cases, 59 deaths.

Mississippi: Gulf Quarantine, July 22-Aug. 3, 14 cases, 1 death; Lumberton, July 28, 1 case; Sumrall, Aug. 2, 1 case.

YELLOW FEVER—FOREIGN.

Brazil: Sao Paulo, June 15, 1 case.

Ecuador: Guayaquil, June 27-July 4, 2 deaths.

Guatemala: Livingston, July 8-15, 3 cases.

Honduras: Puerto Cortez, June 14-21, 2 deaths.

Mexico: Tierra Blanca, July 16-22, 1 case, 1 death; Vera Cruz, July 16-29, 2 cases.

Panama: Colon, July 10-17, 1 case; Panama, 9 cases, 3 deaths.

PLAGUE.

China: Hongkong, May 13-20, 20 cases, 18 deaths.

India: General, June 10-17, 5,413 cases, 4,883 deaths; Bombay, June 24-July 4, 58 deaths; Karachi, June 25-July 2, 34 cases, 34 deaths; Madras, June 24-30, 1 death.

Japan: Formosa, June 20-30, 39 cases, 40 deaths.

Peru: Callao, June 11-20, 1 case, 1 death; Lima, June 11-20, 3 cases, 1 death; Mollendo, June 11-20, 2 cases, 1 death; Payta, June 11-20, 2 cases, 1 death.

Straits Settlements: Singapore, June 10-17, 2 deaths.

CHOLERA.

India: Madras, June 24-30, 1 death.

MEDICAL SCHOOLS OF THE UNITED STATES

Below is given a brief description of every college in the United States that is legally chartered to confer the degree of doctor of medicine, and whose diploma is recognized by at least one state licensing board. The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law. The information given is, as a rule, obtained from the catalogues and has been submitted to the dean of each school for his inspection and approval. Colleges which belong to the American or the Southern Medical College Association or other organization of colleges have requirements for admission of students according to the rules of these associations, unless their requirements are higher, in which case a statement is made to that effect. Extracts from these rules are given at the close of the list of colleges.

ALABAMA.

Alabama, population 1,828,697, has two medical colleges, the Medical College of Alabama and the Birmingham Medical College, located in Mobile and in Birmingham. The population of each city is over 38,000, and board and room may be obtained from $12 to $20 per month.

Birmingham.

Birmingham Medical College.—This school was incorporated in 1894 and is situated in Birmingham, a manufacturing town of 38,415. The clinical advantages are good. The Hillman, St. Vincent's, Pratt and County hospitals are accessible to the students. The laboratories are well equipped. There are 17 professors and 12 assistants, total 29. The school is a member of the Southern Medical College Association. The course of instruction embraces four separate sessions of six months each. The fees are $75 for each of the first three years and $105 for the fourth. The Dean is Dr. B. L. Wyman. Registration, 1904-5, 75, graduates, 16. Next session opens Oct. 3, 1905, and closes April 1, 1906.

Mobile.

Medical College of Alabama.—This is the Medical Department of the University of Alabama, organized in 1859. The City Hospital furnishes free clinical material. The faculty consists of 8 professors and 12 lecturers, 20 in all. It is well equipped with building, laboratories, dispensary, etc. It is a member of the Southern Medical College Association. The course of study covers four years of six months each. The total fees for each of the first three years is $100; for the fourth year. $125. The Dean is Dr. George A. Ketchum. Total registration, 1904-5, 170; graduates, 41. The fortieth session will begin Oct. 1, 1905, and will close April 10, 1906.

ARKANSAS.

Arkansas, population 1,311,564, has one medical college, located in Little Rock. Board and lodging costs from $13 to $18 per month.

Little Rock.

University of Arkansas Medical Department.—This college is located at Little Rock, population about 60,000. It was organized in 1879 as the Arkansas Industrial University Medical Department. Hospital facilities are furnished by Logan H. Roots Memorial Hospital, St. Vincent's Infirmary and Pulaski County Hospital, the latter having a capacity of 200 beds. The teaching body consists of 15 professors and 20 lecturers and assistants, total 35. Dr. F. L. French, Little Rock, is Secretary. The fees are: Matriculation $5, paid but once; annual fees $60, and graduation $25. Total number of students at last session, 220; graduates, 32. The next course of lectures begins Oct. 16, 1905, and ends April 14, 1906.

CALIFORNIA.

California, population 1,485,053, has eight medical colleges. Five are located in San Francisco, a city of about 400,000 inhabitants. They are Cooper Medical College, Medical Department of the University of California, California Medical College, Hahnemann Medical College of the Pacific, and the College of Physicians and Surgeons. The clinical facilities of San Francisco are good; board and lodging can be obtained for from $20 to $30 a month. The College of Medicine of the University of Southern California is situated in Los Angeles, population 102,479. Board and lodging can be obtained in that city for $4 a week and upward. The Oakland College of Medicine and Surgery is in Oakland.

Oakland.

Oakland College of Medicine and Surgery.—The fourth session of this school will begin Aug. 15, 1905, and end May 15, 1906. The length of the course has been changed from eight to nine months, beginning with the sessions of 1905-6. The Registrar is Dr. Edward N. Ewer. The faculty numbers 28. Tuition is about $115 yearly. There were 12 students last session, divided the first three years. There has not been a graduating class as yet.

San Francisco.

Cooper Medical College.—This school was organized in 1858, though its present name was not adopted until 1882. The faculty consists of 17 professors and 44 lecturers, instructors, etc., 61 in all. Lane Hospital, adjoining the college, the City and County Hospital, containing 464 beds, and the college dispensary furnish clinical material. The requirements for admission are a certificate showing that applicant has passed the regular examination for admission to the University of California, or its equivalent, or graduation from an accredited high school or academy, or its equivalent. The college itself does not hold entrance examinations. The college building supplies large laboratory and lecture-room facilities. The curriculum covers a graded course of four years of eight and a half months each. Fees: Matriculation, $5; course fee for each year, $150; laboratory fee for each year, $10; breakage deposit each year, $10; graduation fee, $25; no other charges. The Dean is Dr. Henry Gibbons, Jr. Total registration for 1904-5 was 155; graduates, 37. The next session opens Aug. 15, 1905, and will close May 10, 1906.

University of California, Medical Department.—This department of the State University was organized in 1872, and has a faculty composed of 20 professors, 39 associates and assistants, a total of 59. The City and County Hospital, which admits students of this school not only to the clinics proper, but also to its wards for study, and the college dispensary furnish good clinical material. The course covers graded work for four years of nine months each. This school is a member of the Association of American Medical Colleges. In 1905 two full college years' work will be required of all applicants for admission. The fees are: Matriculation, $5; tuition, $150 each year; laboratory fees extra. The Dean is Dr. Arnold A. D'Ancona. Total registration for 1904-5 was 104; graduates, 17. The thirty-third session opens Aug. 15, 1905, and will close May 15, 1906.

College of Physicians and Surgeons of San Francisco.—This school was organized in 1896 and has a faculty of 22 professors and 24 associate professors and teachers, a total of 46. The hospital facilities consist of the City and County Hospital, the California General Hospital, with 50 beds, and St. Winifred Hospital, with 50 beds. The daily clinics at the new college building furnish abundant material of every description. Applicants for matriculation must show an equal amount of work done or pass a satisfactory examination in English, history and government, geography, physics, mathematics and Latin, grammar and translation. The college building recently completed is well supplied with laboratories and lecture rooms. This college now conducts a continuous course of medical instruction. Each year is divided into four quarters of three months each, and known as the autumn, winter, spring and summer quarters. Students may enter at the beginning of any quarter. Attendance on 12 quarters will be required, and at least 45 months must elapse between the beginning of the first course and the time of graduation. Fees, $30 per quarter. The Dean is Dr. D. A. Hodghead. Registration for 1904-5 was 144; graduates, 29. The autumn quarter opens Sept. 1, 1905, and closes May, 1906.

Hahnemann Medical College of the Pacific.—Homeopathic. This school was organized in 1884, and has a faculty of 19 professors and 23 lecturers, instructors, etc., in all 42. The Pacific Homeopathic Polyclinic, the Homeopathic Sanatorium, the San Francisco Nursery for Homeless Children, Marie Kip Orphanage, accommodating, respectively, 45, 75 and 120 beds; Fabiola Hospital and the City and County Hospital, furnish the clinical material for study. Matriculants must possess the equivalent of a high school education. One year after entrance is permitted in which the student may complete conditions in Latin. The college is registered and accredited with New York State Regents and the Illinois and Michigan State Boards of Health. The course includes four years of seven months each. Total fees for the first year, $155, and $100 for each of the other three years. The Dean is Dr. James W. Ward, 606 Sutter St., San Francisco. Total registration for 1904-5 was 34; graduates, 10. The twenty-third session begins Sept. 1, 1905, and will close May 1, 1906.

California Medical College.—Eclectic. This school was organized in 1884 and has a faculty of 10 professors and 25 lecturers, and instructors, a total of 26. The clinical material is supplied by the Buena Vista and City and County hospitals. Applicants for admission not holding diploma or certificate are examined. The course has been extended to cover four years of eight months each. Total fees are about $110 for each of the first three years and $40 for the fourth year. The Dean is Dr. D. Maclean. Total registration for 1904-5 was 40; graduates, 8. The next session begins Oct. 2, 1905, and ends May 16, 1906.

Los Angeles.

University of Southern California College of Medicine.—This school was organized in 1885, and has a faculty of 29 professors and 19 instructors, 48 in all. The County Hospital, having 200 beds, the Sisters' Hospital of 150 beds, the Children's Hospital of 20 beds, and a college dispensary furnish clinical material. Applicants for admission must give evidence of matriculation in a university or graduation from an accredited high school, academy, preparatory school or a California State Normal School, or a certificate from an appointed member of a high school faculty that applicant has filled the requirements of the Association of American Medical Colleges, of which this college is a member. This college gives no admission examinations. The building is provided with laboratories, amphitheater and lecture rooms, and a new clinical laboratory, erected in 1904, costing, with equipment, $20,000. A graded course, covering four years of thirty-two weeks each, is offered. The total fees for the first year are $145; second and third, $150 each, and $40 for the fourth year. The Dean is Dr. Walter Lindley. Total registration for 1904-5 was 115; graduates, 24. The next session opens Oct. 5, 1905, and closes June 16, 1906.

College of Physicians and Surgeons.—This school was organized in 1903. The length of each course is eight mouths. The faculty numbers 30 in all, 21 professors and 9 assistants. The registration for 1904-5 was 25; graduates, 13. The next session begins Oct. 4, 1905, and ends June 4, 1906. The Secretary is Dr. Benjamin F. Church, Frost Bldg., Los Angeles.

COLORADO.

Colorado, with a population of 539,700, has three medical colleges. Two of these, Denver and Gross College of Medicine and Denver Homeopathic College are in Denver, which has a population of about 175,000, the other, the Colorado School of Medicine, is at Boulder (population 6,150). The clinical facilities in Denver available to the two colleges are the Denver County Hospital, which has a capacity of 300 beds. St. Joseph's Hospital, with 300 beds, and St. Luke's Hospital, with 75 beds. The Public Library contains 10,000 volumes on medicine. Board can be obtained in Denver for $5 a week and upward.

Denver.

The Denver and Gross College of Medicine.—This is the Medical Department of the University of Denver, and was organized in 1902 by the union of the Gross Medical College (organized 1887) and the Denver College of Medicine (organized 1880). The clinical advantages are the college dispensary, the Denver County Hospital, St. Luke's Hospital, St. Anthony's Hospital, St. Joseph's Hospital, National Jewish Hospital for Consumptives, Home for Dependent Children and the City Contagious Hospital and Mercy Sanitarium. The faculty is made up of 38 professors, 43 assistants and instructors, a total of 81. Its location is central, and the buildings are well arranged for laboratory, dispensary and didactic work. The course is graded and covers four years of eight months. The college is a member of the Association of American Medical Colleges. Final examinations at the end of each year are held. Fees for the first year are $115. For the second year, $116. Third year, $101. Fourth year, $126. Total registration, 1904-5 was 115; graduates, 32. The twenty-fourth session will begin Sept. 10, 1905, and close May 18, 1906. The Dean is Dr. S. G. Bonney.

Denver Homeopathic College.—This college, organized in 1894, beside clinical privileges in the hospital of the city and county of Denver, has exclusive privileges for clinical work in the Denver Homeopathic Hospital, the Haven and the Belle Lenox Nursery. The faculty numbers 26 professors and 7 lecturers and instructors, 33 in all. The requirements for admission are, "possession of a diploma from a literary college, university, an academy, a normal or high school; a first-grade teacher's certificate, or a previous matriculation at some reputable literary or medical college." The course of study consists of four years of seven months each; monthly examinations are held in each subject. A five-year scholarship may be had for $300 payable in advance, otherwise the tuition is $100 a year for the first, second and third years. Senior year, $75. There is a matriculation fee of $5, payable once. The Dean is Dr. James P. Willard. Total registration for 1904-5 was 29; the number of graduates, 6. The eleventh session begins in September, 1905, and will close April, 1906.

Boulder.

Colorado School of Medicine.—This is the Medical Department of the University of Colorado, and was opened in 1883. The University Hospital, under the control of the state, is equipped to accommodate 40 patients, and furnishes free clinical material. Both hospital and dispensary clinics are offered and the sanatorium located at Boulder offers additional advantages in this line. The faculty embraces 18 professors and 9 lecturers and assistants, a total of 27. The laboratories are well equipped and commodious. A separate building is devoted to the study of anatomy and another one is used for medical work exclusively. A complete four-year course of study in a recognized high school, or its equivalent, is required for admission. This school is a member of the Association of American Medical Colleges. The work embraces a graded course of four years of nine months each. The tuition is $50 per year; there are no other fees. The Dean is Dr. Luman M. Giffin. Total registration for 1904-5 was 54; graduates, 6. The twenty-fourth session begins Sept. 11, 1905, and closes June 7, 1906.

CONNECTICUT.

Connecticut, with a population of 908,420, has only one medical college, located in New Haven, population, 115,000. Board and lodging cost $4.50 and upward per week.

New Haven.

Yale Medical School.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. In 1879 a new charter changed the name to the one now used, and in 1884 the Connecticut Medical Society, which, from the granting of the first charter, had taken an active part in its control, surrendered its authority, and the University authorities assumed full control. The clinical advantages are embraced under the New Haven Hospital, which contains 175 beds and is the general hospital for New Haven: the Springside Hospital, which is connected with the city almshouse, and the State Hospital for the Insane, located in Middletown, about twenty-five miles distant, which, with its 1,800 patients, offers an opportunity for special instruction in insanity in addition to the clinics. Beside these, the University has just completed a $100,000 building for the dispensary service, which offers good material for clinical teaching. The faculty embraces 14 professors, 5 lecturers, 10 instructors and 19 assistants, a total of 48. The lecture rooms and laboratories are large and well equipped. Matriculants are admitted without examination, provided that they have received a degree in arts or sciences, that they present certificates showing that they have successfully prosecuted the subjects of the examination at some college, high school, academy or preparatory school approved by the faculty, or that they have passed matriculation examinations equivalent to those required at some approved professional school. This school is a member of the Association of American Medical Colleges. The course covers a four-year graded curriculum, nine months constituting a school year; the first two years the fundamental branches are studied, the third year is devoted to a systematic teaching of medicine, surgery, obstetrics and pharmacology, and in the fourth year clinical work, with medicine, surgery and the specialties, is presented. The fees are $150 each year; in the first year there are additional fees amounting to $18, and in the second, $8, and there is a graduation fee of $10. The Dean is Dr. Herbert E. Smith, New Haven. During the session of 1904-5 there were 139 matriculants and 22 graduates. The ninety-third session opens Sept. 28, 1905, and closes June 27, 1906.

DISTRICT OF COLUMBIA.

Washington, population 278,718, has three medical colleges: George Washington University Department of Medicine, Georgetown University School of Medicine, and Howard University Medical Department. Washington offers to the student of medicine many advantages. The Army Medical Museum, the Museum of Hygiene, the National Museum, the library in the Surgeon-General's office, the Toner Medical Library and Museum of Hygiene, in all over 125,000 volumes on medicine, open to the medical student a most profitable field. The clinical advantages offered by the various hospitals are good. Owing to the many boarding houses and hotels, board and lodging can be had at reasonable rates.

Washington.

The George Washington University, Department of Medicine.—This school was organized in 1821 as the Department of Medicine of Columbian College, which in 1873 became Columbian University, and in 1904, by an act of Congress, changed its name to the George Washington University. In connection with the Department of Medicine is the University Hospital, established and maintained to afford clinical facilities for the students of the school. Beside the University Hospital, the Garfield Hospital, the Children's Hospital, the Central Dispensary and Emergency Hospital, the Providence Hospital, the Columbia Hospital, the Episcopal Eye and Ear Hospital, the U. S. Government Hospital for the Insane, and the Lutheran Eye and Ear Infirmary afford additional opportunities and are utilized for clinical instruction under the supervision of those members of the faculty who are on the visiting staffs of these institutions. Attendance on clinics is obligatory on third and fourth-year students. The faculty is composed of 34 professors and 30 demonstrators, instructors and assistants. This school is a member of the Association of American Medical Colleges. The laboratories are modern and equipped with all the needed apparatus for thorough work and instruction. Facilities are also provided for post-graduate and research work. The course of instruction is graded and extends through four years, each scholastic year consisting of eight months. Written and practical examinations are held during the term and written and oral in all subjects at the end of the school year. The total fees for the first year are $142; for the second year, $117; for the third year, $112, and for the fourth year, $122. A breakage deposit of $10 is required. The Dean is Dr. W. F. R. Phillips, 1607 16th St. N. W. New and commodious buildings were erected and occupied in 1902. The total registration of students for the session of 1904-5 was 298; graduates, 69. The eighty-fourth session begins Sept. 27, 1905, and closes June 6, 1906.

Georgetown University School of Medicine.—This school organized in 1850, controls the Georgetown University Hospital, which affords excellent facilities for clinical teaching and ward classes. Clinics are also held for the benefit of the students in Providence Hospital, containing 500 beds, at the Government Hospital for the Insane, containing over 2,000 beds; in the Children's Hospital, the Central Dispensary, Emergency Hospital and the Garfield Hospital. Attendance on clinical instruction is obligatory in the third and fourth years. The faculty contains 26 professors, 27 instructors and assistants, total 53. This school is a member of the Association of American Medical Colleges. The building is conveniently located and contains spacious and well-ventilated lecture rooms, laboratories and library; the laboratories are equipped with the most approved instruments and appliances. The complete course of study extends over four terms of eight months each. Examinations are held at the end of each session. The fees are $110 each year. The Dean is Dr. George M. Kober, 1600 T St. The registration for 1904-5 was 127; graduates, 16. The next term opens on Sept. 28, 1905, and ends May 31, 1906.

Howard University Medical Department.—This institution was organized in 1867, and "in conformity with the spirit of the organic law of the University, is open to all, without regard to sex or race, who are qualified by good moral character, proper age and suitable education." The removal of any racial distinction has been taken advantage of by colored students, who compose a majority of those in attendance, but a number of white students are also receiving instruction. The Freedman's Hospital is a general hospital of 300 beds. The faculty comprises 17 professors and 16 lecturers and assistants, 33 in all. This college is a member of the Association of American Medical Colleges Students are required to attend four courses of lectures in separate years of nine months each. The fees of each session are $80, plus $2 per part for dissecting material, and $10 for graduation. Board can be had at the school dining hall for $9 a month, and a room in the dormitory for $15 a term. The Dean is Dr. Robert Reyburn, 2129 F St. Registration for 1904-5 was 153; graduates, 32. The thirty-eighth session begins Oct. 2, 1905, and closes June 1, 1906.

GEORGIA.

Georgia, population 2,216,331, has three medical colleges: Medical College of Georgia, located in Augusta (population 39,441); Atlanta College of Physicians and Surgeons, and Georgia College of Eclectic Medicine and Surgery, both in Atlanta (a manufacturing city of 89,872 population). Board and lodging may be obtained for from $3 to $5 per week.

Augusta.

University of Georgia Medical Department.—This school was organized as a medical academy in 1829, and in 1873 was made the Medical Department of the University of Georgia. Its faculty includes 12 professors and 13 assistants, 25 in all. The course is four years of six months each. Applicants for admission must, by examination, certificate or diploma, show that they possess educational qualifications equal to those required for second grade teachers in public schools; if they are deficient on examination, however, they are admitted, and they may remove the conditions any time before they appear for graduation. The City Hospital, with 130 beds; Lamar Hospital, with 80 beds; the Polyclinic and the Hospital for Contagious Diseases supply clinical material. Fees for the first two years are $75 each; third year, $100, and $130 for the last year. The Dean is Dr. DeSanssure Ford. Total enrolment for 1904-5 was 108; graduates, 14. The seventy-fourth session begins Oct. 1, 1905, and closes April 1, 1906.

Atlanta.

Atlanta College of Physicians and Surgeons.—This school was formed in 1898 by the consolidation of the Atlanta Medical College, organized in 1854, with the Southern Medical College, organized in 1879. It has a faculty of 13 professors and 30 assistants, a total of 43. Clinical facilities are furnished by the Grady Hospital, whch is the general hospital for Atlanta, clinics are free to the graduating class. First course students are required to "give satisfactory evidence to the faculty of such educational qualifications as will be deemed necessary for the successful prosecution of their medical studies. These requirements will be similar to those of other reputable medical colleges in the country." The course of study covers four years of six months each and is graded. The buildings are large and a new building for practical anatomy has been added. Fees: First and second years, $75 each; third and fourth, $100 each. The Dean is Dr. W. S. Kendrick, 71 Washington St. Total registration of students for 1904-5 was 250; graduates, 48. Next session begins Oct. 4, 1905, and closes April 5, 1906.

Georgia College of Eclectic Medicine and Surgery.—This school was organized in 1839, and has a faculty of 16. The college dispensary, Grady Hospital and Georgia Eclectic Hospital furnish clinical material. Applicants for admission must adhere to the requirements established in the National Confederation of Eclectic Colleges, of which this college is a member. The curriculum covers four years of six months each. The Proctor is Dr. W. M. Durham, 77½ Peachtree St. Total number of students for 1904-5 was 53; graduates, 14. The next session opens Oct. 4, 1905, and closes April 4, 1906.

ILLINOIS.

Illinois, population, 4,821,550, has 13 medical colleges, all located in Chicago, a city of about 2,000,000 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, College of Physicians and Surgeons, Hering Medical College, Jenner Medical College, Illinois Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University, American College of Medicine and Surgery, and Dearborn Medical College. Room and board cost $3 a week and upward.

Colleges in Illinois have to admit students in conformity with the minimum requirements of the Illinois State Board of Health, as follows: "A diploma or certificate of graduation from a high school; or a certificate signed by a principal of a regularly organized high school or by the examiner of the faculty of a recognized literary or scientific college or university, or by the state superintendent of public instruction, or a superintendent of public schools, of having successfully passed an examination in all the several branches embraced in the curriculum of a four years' high school course. The matriculation examination shall not be conducted by any member of the faculty of the medical college. The Illinois State Board of Health will require each applicant for a state certificate to present documentary evidence of his preliminary education, together with his medical diploma, when taking the examination of the board." These conditions will govern all persons admitted to the freshman year on or after Jan. 1, 1903.

Chicago.

Rush Medical College.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 to 1898, and in the latter year became affiliated with the University of Chicago. The faculty is composed of 64 professors, 170 associates, instructors, etc., a total of 234. Good clinical facilities are furnished by Cook County Hospital, caring for about 20,000 patients yearly; Presbyterian Hospital, with 250 beds; a college dispensary, and an obstetric department. In addition to these, extramural clinical courses are offered at the West Side Hebrew Dispensary, St. Luke's Hospital, St. Anthony's Hospital, the Alexian Brothers' Hospital, Illinois Charitable Eye and Ear Infirmary and Chicago Isolation Hospital. Bedside instruction is given. The requirements for admission are those of admission to the better universities or colleges, and, in addition thereto, two years of college work. This college work must have included thorough courses in college chemistry (both inorganic and organic), college physics and biology, all with laboratory work, a reading knowledge of German and French. By the addition of a recently completed seven-story building, the facilities for clinical instruction are largely increased. The laboratories and their equipment are unexcelled. The curriculum covers graded work for four years of three quarters each, a quarter being three months. A fifth year, consisting of a hospital interneship or of a fellowship in one of the departments is offered, but, for the present, is optional. A continuous session is held, but credit for more than three quarters can not be obtained in any calendar year. A combined course for six years confers degrees of both science and medicine. All freshmen and sophomore studies are given at the University of Chicago. The total fees are $180 this year. Students in continuous attendance, i. e., three quarters in twelve months, may complete their course by paying the fees in vogue when they first entered the college. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Deans are Dr. Frank Billings, 100 State St., and Dr. John M. Dodson, 34 Washington St. Total registration, 1904-5, was 522; graduates, 112. The fiscal year begins July 1; final examinations are held at the end each quarter.

College of Physicians and Surgeons.—This school was organized in 1881, and in 1896 became the Medical Department of the University of Illinois. The faculty is composed of 39 professors, 105 assistants and instructors, a total of 144. The West Side Hospital, containing 125 beds; Cook County Hospital, and a college dispensary and maternity clinic supply most of the clinical material, but under certain conditions students of this school are admitted to the following hospitals for clinical study: Augustana, Baptist, Chicago, Woman's, Samaritan, Alexian Brothers', St. Mary's, and the Chicago Lying-in. This school is a member of the Association of American Medical Colleges. A magnificent building has recently been added to the college, and the laboratory, amphitheater and lecture-room space and equipment are excellent. The collegiate year is divided into two terms; the winter term of thirty-six weeks and the summer term of twelve weeks, of actual teaching. Attendance on the winter term is required in order to secure credit for a year's work, and attendance on four winter terms is required for graduation. Attendance on the summer term is optional, and the work is supplementary to the work of the winter term. Students may obtain credit for work done in certain branches, but attendance on this term does not apply on the required thirty-six months' attendance necessary for graduation. The fees are $145 each for the first two years, $130 for the third and $160 for the fourth year. The Dean is Dr. William E. Quine, 103 State St. Total registration for 1904-5 was 654; graduates, 213. The fall term begins Sept. 26, 1905, and ends June 5, 1906.

Northwestern University Medical School.—This school was organized in 1859 as the Medical Department of Lind University, became independent as the Chicago Medical College in 1864, and in 1869 assumed its present relation as Medical Department of Northwestern University. The faculty comprises 41 professors and 75 assistants and instructors, in all 116. Wesley Hospital, with 225 beds; Mercy Hospital, containing 400 beds; Provident Hospital, 100 beds; St. Luke's, 200 beds, and a college free dispensary furnish opportunities for clinical study to students of this college exclusively. Cook County, the People's, and the Chicago Lying-in hospitals are also open to them for study. Applicants for admission must, by diploma, certificate or examination, show possession of the educational requirements required to enter the College of Liberal Arts of Northwestern University. This school is a member of the Association of American Medical Colleges. The laboratory and lecture-room facilities are ample and the equipment is good. The course of study covers graded work for four years of thirty-six weeks each. Optional summer laboratory and clinical courses are also given. Final examinations are held at the end of each semester. The fees for each year are $175, and a matriculation fee of $5, paid once, is charged. The Dean is Dr. N. S. Davis, Chicago Savings Bank Bldg. The total registration for 1904-5 was 593; graduates, 143. The next session opens Oct. 3, 1905, and closes June 1, 1906.

American Medical Missionary College.—This school was organized in 1895 and has the primal object of educating men and women as missionary physicians. The faculty numbers 26. The didactics and laboratory work, covering the first two years, are carried on at Battle Creek, Mich., and the clinical studies in Chicago. A hospital with 20 beds, in connection with the college, together with a free college dispensary with an obstetric department, supply material for practical work. The college is a member of the Association of American Medical Colleges. The course covers four years of nine months each. Total fees are $125 for each of the four years. The Secretary is Dr. E. L. Eggleston, Battle Creek, Mich. Total registration for 1904-5 was 80; graduates, 21. The eleventh session opens Sept. 20, 1905, and closes June 19, 1906.

Illinois Medical College.—This school, organized in 1894, has a faculty of 31 professors and 20 assistants, a total of 51. A college dispensary and Cook County Hospital are available for clinical study. The requirements of admission include a high school diploma or its equivalent. The college is a member of the Association of American Medical Colleges. Attendance for seven months during each year is necessary for graduation. Total fees are about $125 for each year. The Dean is Dr. B. B. Eads, 103 State St. Total registration for 1904-5 was 192; graduates, 59. The next fall term begins Sept. 4, 1905.

Dearborn Medical College.—This school was organized in 1903, with a faculty of 38 professors and 4 assistants, a total of 42. The instruction, which is given in the evening only, extends over a period of four years of ten months each. Cook County Hospital, Samaritan Hospital and a college dispensary supply the clinical material. The total fees are: $5 matriculation fee, $110 tuition, and $10 laboratory deposit. The Dean is Dr. L. Blake Baldwin; the Secretary, Dr. J. L. Wells. Total registration for 1904-5 was

181; graduates, 29. The next session begins Sept. 4, 1905, and ends June 23, 1906.

Hahnemann Medical College.—Homeopathic. This school was organized in 1855, and has a faculty of 104. Hahnemann Hospital and a college dispensary supply clinical material. The requirements for admission are a high school diploma or its equivalent. The course is four years of seven months each. Fees: Matriculation, paid once, $5; each semester, $50, and hospital tickets, $5 each for third and fourth years. The Registrar is Dr. W. Henry Wilson. Total registration 1904-5, 220; graduates, 61. The next session begins Sept. 27, 1905.

Hering Medical College.—Homeopathic. This school was organized in 1892. Dunham Medical College, organized in 1895, was consolidated with this school in August, 1902. In January, 1905, it purchased the Chicago Homeopathic College Building at 354 South Wood St., opposite Cook County Hospital, which it now occupies. The faculty comprises 40 professors and 25 associates, lecturers, etc., in all 65. Hering College Hospital, Chicago Homeopathic, Frances Willard and Cook County hospitals supply clinical facilities. The course covers four years of eight months each. The total fees for a full course are $300 if paid in advance, or $100 per year. The Dean is Dr. H. C. Allen. Total registration for 1904-5 was 50; graduates, 14. The fourteenth session begins Sept. 4, 1905, and ends May 3, 1906.

College of Medicine and Surgery.—Physio-Medical. This school was organized in 1896, and has a faculty of 48 professors and 14 assistants. Three college dispensaries supply material for clinical work. The course covers four years of nine months each, divided into 3 semesters of three months each. Fees for the first, second and third years, $100 each, and $115 for the fourth. The Secretary is Dr. Franklyn J. Morgan, 67 Wabash Ave. Total registration for 1904-5 was 89; graduates, 14. The next session begins Sept. 25, 1905, and ends June 28, 1906.

Bennett College of Eclectic Medicine and Surgery.—This school, organized in 1868, has a faculty of 40 professors and 12 assistants, 52 in all. The Bennett, Cook County and Baptist hospitals and a college dispensary supply clinical facilities. Matriculants must present a diploma or certificate or pass a satisfactory examination "in conformity with the minimum requirements of the State Board of Health." This course covers four years of twenty-six weeks each. This school is a member of the National Confederation of Eclectic Medical Colleges. Fees for each year are $100, with a matriculation fee, paid once, of $5. The Dean is Dr. A. L. Clark, Elgin, Ill. Total registration, 1904-5 was 103; graduates, 30. The thirty-eighth session begins Sept. 26, 1905, and ends May 8, 1906.

American College of Medicine and Surgery.—This school was founded in 1901 and has a faculty of 65. The requirements for entrance are graduation from an accredited high school or equivalent. The course is four years of eight months each. Frances E. Willard and Cook County hospitals supply clinical material. The Secretary is Dr. J N. Roe. The annual fee is $100; matriculation fee is $5; a total fee for one year, with board, room, light and heat, is $208. The enrolment, 1904-5, was 292; graduates, 34. The next session begins Sept. 26, 1905, and closes May 15, 1906.

National Medical University.—This school was organized in 1891, and its courses include instruction in the methods of all the so-called schools of practice, including manual therapeutics. The faculty numbers 66. The requirements for entrance are in accordance with the requirements of the Illinois State Board of Health. Each year is divided into four quarters of thirteen weeks each, attendance on three quarters constituting one college year. The fees are $200 per year. The Dean is Dr. L. D. Rogers, 533 Wells St. Total matriculants for 1904-5 were 232; graduates, 29. The autumn quarter will begin Oct. 1, 1905.

Jenner Medical College.—This is a day and evening school, organized in 1892. The faculty consists of 46 professors and 7 assistants, 53 in all. Cook County Hospital and college dispensary supply clinical material. The course covers four years of 40 weeks each and embraces laboratory, didactic and clinical instruction. The total fees each year are $100, with a $5 matriculation fee, paid but once. The Registrar is Dr. C. Shorman, 163 Randolph St. Total enrolment for 1904-5 was 102; graduates, 13. The next session begins Sept. 4, 1905, and will end June 29, 1906.

Harvey Medical College.—This is a night school, which was organized in 1891 and became extinct in 1905. Total registration for 1904-5 was 210; graduates, 18.

INDIANA.

Indiana, population 2,516,462, has six medical colleges. Four are situated in Indianapolis, a city of 169,164 people: The Central College of Physicians and Surgeons, Medical College of Indiana, the Eclectic Medical College and the Physio-Medical College of Indiana. The clinical facilities of Indianapolis are good, and board and lodging can be obtained from $3 a week and upward. The Fort Wayne College of Medicine is situated in Fort Wayne, a railroad and manufacturing town of 45,115 inhabitants. Board and room can be obtained there at an average of $3 a week. The School of Medicine, Indiana University is situated in Bloomington, a city of 5,000.

Indianapolis.

Central College of Physicians and Surgeons.—This school was organized in 1879 and reorganized in 1901. The faculty numbers 24 professors and 35 lecturers and demonstrators, total 59. A new college building has been erected in the center of the city on the most up-to-date plans. Its floor space comprises 25,000 square feet, more than half of which is devoted to laboratory teaching. The school gives instruction largely by laboratory and clinical methods. Clinical facilities are furnished by a dispensary maintained by the college, by the City Dispensary, City Hospital, St. Vincent's Infirmary and the Central Hospital for the Insane. Bedside clinics are given to sections of senior class daily at City Hospital. This college was a charter member of the Association of American Medical Colleges. The course is four years of seven months each. The Dean is Dr. George D. Kahlo; the Secretary, Dr. John F. Barnhill. The fees are $75 for each year. Total registration, 1904-5, was 146; graduates, 25. The session for 1905-6 will open Sept. 20, 1905, and closes April 20, 1906.

Medical College of Indiana.—This is the Medical Department of the University of Indianapolis, and was organized in 1869. The faculty embraces 25 professors, 38 adjuncts, lecturers, etc., a total of 63. The City Hospital, containing 200 beds; Indianapolis Dispensary; Central Hospital for the Insane, with a capacity for 1,800 patients; St. Vincent's and the Maternity hospitals, and a college dispensary provide clinical facilities; the wards in the charity hospitals are open to students of this college for bedside instruction. The laboratory and lecture-room space is ample. This college is a member of the Association of American Medical Colleges. The course extends over four years of seven months each. Fees, $75 for first, second and third years, and $100 for the fourth year, which includes graduation. The Dean is Dr. Henry Jameson, Newton-Claypool Bldg. Total enrolment for 1904-5 was 269; graduates, 78. The thirty-sixth session opens Sept. 14, 1905, and closes May 1, 1906.

Eclectic Medical College of Indiana.—This school was organized in 1900 and has a teaching force of 24. The course is four years of six months each. Fees: For each year, $75, or for all four, $225; $25 for graduation. Total registration, 1904-5, 44; graduates, 8. The Dean is Dr. W. M. Brown, 732 Sheffield Ave. The Secretary is F. M. Wright, M.D., 1120 East Tenth Street. The next session begins Sept. 26, 1905, and ends April 16, 1906.

Physio-Medical College of Indiana.—This school was organized in 1873, and has a faculty of 30. The course is four years of seven months each. Total fees for each year are $70. The Secretary is Dr. C. T. Bedford, Newton-Claypool Bldg. Total enrollment, 1904-5 was 72; graduates, 5. The next session begins Sept. 13, 1905, and closes April 13, 1906.

Fort Wayne.

Fort Wayne College of Medicine.—This school is the Medical Department of the Ohio Northern University, located at Ada, and was organized in 1879. It has a faculty of 27 professors and 9 lecturers and assistants, a total of 36. St. Joseph's Hospital, with a capacity of 250 patients; Hope Hospital, with 200 beds; St. Roche's Hospital, having accommodation for 35 patients; Indiana School for Feeble-Minded Youth and Allen County Orphan Asylum, capable of holding 150 children, supply the clinical facilities. This school is a member of the Association of American Medical Colleges. The curriculum covers four years of seven months each. The course is practical, supplemented by lectures and laboratory work. The total fees for each year are $75, with an additional $5 matriculation fee, payable once. The Dean is Dr. C. B. Stemen, 715 Broadway. Total registration, 1904-5, was 43; graduates, 6. The next session opens Sept. 12, 1905, and closes April 18, 1906.

Bloomington.

Indiana University School of Medicine.—This school was organized in 1903, and gives only the first two years of the medical course, extending over nine months in each year. The school is a member of the Association of American Medical Colleges. The faculty consists of 8 professors and 3 assistants, a total of 11. Dr. Burton D. Myers is the Acting Dean. The enrolment in 1904-5 was 14. The next session begins Sept. 18, 1905, and ends June 22, 1906.

IOWA.

Iowa, population, 2,231,853, has five medical colleges. The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City (population 10,000). In Des Moines (population 62,139) is the College of Medicine of Drake University. In Sioux City (population 33,111) is the Sioux City College of Medicine. In Keokuk (population 15,641) is Keokuk Medical College, College of Physicians and Surgeons. Board and lodging may be had in Des Moines for $15 a month and upward and in the other cities named for from $2.50 to $5 per week.

Des Moines.

Drake University College of Medicine.—This school was organized in 1882 under the name of the Iowa College of Physicians and Surgeons. In 1900 it became affiliated with Drake University. The faculty consists of 21 professors and 25 assistants, a total of 46. The Mercy and Methodist hospitals and a large dispensary clinic furnish clinical material. The college is a member of the Association of American Medical Colleges. The requirements for admission, after the 1st of July, 1905, will be a full four years' high school course or its equivalent. The work covers a graded course of four years of nine months each. The total fees for the first two years are $107 each, including laboratory and dissecting material; for the last two years, $89 each, including hospital fees. The Dean is Dr. D. S. Fairchild. The total registration for 1904-5 was 60; graduates, 12. The next session begins Sept. 18, 1905, and ends June 14, 1906.

Iowa City.

College of Medicine of the State University of Iowa.—This department was organized in 1870. The faculty is made up of 15 professors, 34 lecturers, demonstrators and assistants, a total of 49. The University Hospital, built in 1897, at a cost of $50,000, supplies the clinical material. The school is a member of the Association of American Medical Colleges. The course of study covers four years of thirty-six weeks each, embracing graded laboratory, didactic and clinical work. New laboratories have been erected, histology, embryology, anatomy, physiology, pharmacology, pathology, bacteriology and clinical medicine. Combined courses leading to more than one degree are offered. Total fees for each year are $50. The Dean is Dr. James R. Guthrie, Dubuque; Secretary, Dr.

W. L. Bierring, Iowa City. Total number of students registered for 1904 5 was 277; graduates, 65. The thirty-sixth session opens Sept. 21, 1905, and ends June 13, 1906.

COLLEGE OF HOMEOPATHIC MEDICINE OF THE STATE UNIVERSITY OF IOWA.—This was organized in 1877. The faculty is composed of 12 professors and 12 lecturers and assistants, a total of 24, but some of these are of the faculty of the College of Medicine. The requirements for admission, and the work, with the exception of that pertaining to homeopathy, are the same as those for the other department. The fees are also the same. The Dean is Dr. George Royal, Des Moines. Total registration for 1904-5 was 41; graduates, 9. The twenty-ninth session begins Sept. 21, 1905, and will end June 13, 1906.

Keokuk.

KEOKUK MEDICAL COLLEGE, COLLEGE OF PHYSICIANS AND SURGEONS.—In 1849 the College of Physicians and Surgeons, Keokuk, was organized, and four years later it became the Medical Department of the University of Iowa, continuing as such until 1870, when the original name was resumed. By the union, in 1899, of this college with the Keokuk Medical College, organized in 1890, the present school under the above name was founded. The clinical material is good. St. Joseph's Hospital is open to the student for study and the clinics held there are large and varied. The faculty is composed of 17 professors and 3 assistants and demonstrators, 20 in all. This college is a member of the Association of American Medical Colleges. The studies embrace a graded course of four years of seven months each. The total fees for the first year are $63; for the second and third, $58 each, and $53 for the last year. The Secretary is Dr. C. E. Ruth. Total registration for 1904-5 was 230; graduates, 50. The next session begins Sept. 19, 1905, and ends April 24, 1906.

Sioux City.

SIOUX CITY COLLEGE OF MEDICINE.—This school was organized in 1891. The faculty numbers 26. Clinical material is supplied by St. Joseph's, Mercy and Samaritan Hospitals and a college dispensary. This college is a member of the Association of American Medical Colleges. The system of study embraces a four-year graded course, eight months being a school year. Final examinations are held at the close of each course of instruction. Matriculation fee, paid but once, $5; tuition, each year, $48; hospital fee, $5, and graduating fee, $20. The President is Dr. J. N. Warren. Total number of students registered. 1904-5, was 72; graduates, 14. The sixteenth session opens Sept. 13, 1905, and will close May 2, 1906.

KANSAS.

Kansas, population, 1,600,000, has two medical colleges: Kansas Medical College is in Topeka (population 33,608), and the College of Physicians and Surgeons, now a part of the University of Kansas, in Kansas City (population 55.000). In addition there is a school which does not grant degrees, but prepares students in the first two years. This is the Medical School of the University of Kansas, at Lawrence, a town of 10,862 people. Board and lodging in all these places may be had for $3 to $5 per week.

Lawrence.

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE.—This school was organized in 1880. The faculty numbers 18. This school is a member of the Association of American Medical Colleges. Only the purely scientific subjects are taught in Lawrence, but the work in these is thorough, seventy-two weeks being devoted to the two-year course. The greater part of the work is done in the laboratory, with recitations and assigned readings, the lectures being supplementary only. For this reason the equipment and arrangement of the laboratories have been given special attention. A combined course of four years is offered, conferring "the degree of bachelor of arts in medicine." In the year 1905-6 the work will be entirely reorganized. The third and fourth years' work will be added, but will not be given at Lawrence. A hospital will be erected at Rosedale, Kan., a suburb of Kansas City, and the clinical work will be carried on at this place. The total fees to residents of the state are: First year, $25; second, $25; to non-residents of the state, $35 and statement as to change in fees for next year. The Acting Dean is Dr. Geo. E. Hoxie. The number of students registered for 1904-5 was 32. The next session begins Sept. 6, 1905, and will end June 6, 1906.

Kansas City.

COLLEGE OF PHYSICIANS AND SURGEONS.—This was organized in 1894 as the Medical Department of Kansas City University, and in 1905 was absorbed by the Medical Department of the University of Kansas. The total registration in 1904-5 was 55; graduates, 3.

Topeka.

KANSAS MEDICAL COLLEGE, MEDICAL DEPARTMENT OF WASHBURN COLLEGE.—This college, organized in 1890, has a faculty of 25 professors and 8 lecturers and assistants, 33 in all. Good material for both medical and surgical clinics is found in Christ's Hospital, with 100 beds, and Topeka State Hospital: the dispensary in the college building also supplies material for class demonstration. The college is a member of the Association of American Medical Colleges. The college building affords ample laboratory and lecture-room space. The course of study is a graded one, covering four years of 30 weeks each. Individual instruction is especially aimed at. The total fees for the first three years are $70 each, and $30 for the last year. The Dean is Dr. William S. Lindsay; Secretary, Dr. William McVey. The total registration for 1904-5 was 91; graduates, 18. The sixteenth session begins Sept. 13, 1905, and will close April 18, 1906.

KENTUCKY.

Kentucky, population 2,147.174, has seven medical colleges. They are all situated in Louisville, a city of about 225,000 inhabitants, and are as follows: University of Louisville Medical Department, Kentucky School of Medicine, Louisville Medical College, Hospital College of Medicine, Southwestern Homeopathic Medical College, Kentucky University Medical Department, and the Louisville National Medical College. Board and lodging in Louisville costs from $3 to $4 per week.

Louisville.

KENTUCKY SCHOOL OF MEDICINE.—This school was organized in 1850, and has a faculty composed of 20 professors, 27 lecturers, instructors and assistants, a total of 47. It is a lineal descendant of the Medical Department of Transylvania University, then situated at Lexington, Ky. The College Hospital, City Hospital and the college dispensary furnish the facilities for clinical study. The student is brought directly into contact with the patient through dispensary and bedside work by dividing the classes into sections. This college is a member of the Association of American Medical Colleges. The laboratories and their equipment are good. The curriculum embraces a four years' course of 28 weeks each. The fees for the first three years are $75 each; for the fourth year, $100. The Dean is Dr. W. H. Wathen, 628½ Fourth Ave. Total number of students registered for 1904-5 was 193; graduates, 49. The next session begins Dec. 15, 1905, and will end July 12, 1905.

LOUISVILLE MEDICAL COLLEGE.—This school was organized in 1869 and has a faculty of 12 professors and 18 instructors and assistants, 30 in all. The City Hospital, College Infirmary and a dispensary offer good clinical facilities. Applicants for admission must show by diploma, certificate or examination that they are sufficiently proficient in English, arithmetic, algebra, physics and such Latin as would be acquired in one year's study. The laboratories and lecture rooms are ample. The course of study covers four years of six months each. The fees are $75 each year, with graduating fee of $25. The Secretary is Dr. Irvin Abell. Total registration for 1904-5 was 263; graduates 40. The next session opens Dec. 11, 1905, and closes July 1, 1906.

HOSPITAL COLLEGE OF MEDICINE.—This school is the medical department of Central University of Kentucky and was organized in 1873. The faculty is composed of 16 professors and 35 assistants, lecturers, etc., a total of 51. The Gray Street Infirmary, City Hospital and a well-equipped college dispensary present good facilities for clinical study. This college is a member of the Association of American Medical Colleges. Laboratory work, which is a prominent feature of the course, is thorough and practical. The laboratories and amphitheaters are ample in equipment and capacity, and the hospital advantages give opportunity for personal bedside instruction. The course covers four years of seven months each. Total fees for each of first three years, $75, and $100 for the fourth year. The Dean is Dr. P. Richard Taylor. Total enrolment for 1904-5 was 423; graduates, 90. The thirty-second session opens Dec. 1, 1905, and closes July 1, 1906.

KENTUCKY UNIVERSITY MEDICAL DEPARTMENT.—This school was reorganized in 1898. The faculty is composed of 17 professors and 25 lecturers, demonstrators, etc., 42 in all. Broadway Infirmary, the City Hospital and the college dispensary furnish clinical material. The school is a member of the Association of American Medical Colleges. The buildings provide ample facilities for clinical, laboratory and didactic instruction. The course of study embraces graded work for four years of thirty weeks each. Tuition is $75 per session and $25 graduation fees. The Dean is Dr. Thomas C. Evans, 419 West Chestnut St. Total number of students registered in 1904-5 was 340; graduates, 76. The next session begins Jan. 1, 1906, and continues seven months.

UNIVERSITY OF LOUISVILLE MEDICAL DEPARTMENT.—This school was organized in 1837, under the name, Louisville Medical Institute, and in 1846 assumed its present title. It has a faculty of 11 professors and 27 lecturers, demonstrators, etc., a total of 38. The University Hospital, City Hospital, Sts. Mary and Elizabeth Hospital, together with the college dispensary, furnish good clinical material. The course covers graded work for four years of seven months each. Total fees: First year, $107; second, $122; third, $100, and fourth, $112. The Dean is Dr. J. M. Bodine. Total registration for 1904 5 was 248; graduates, 75. The sixty-eighth session begins Oct. 2, 1905, and ends May 1, 1906.

LOUISVILLE NATIONAL MEDICAL COLLEGE.—Colored. This was chartered in 1888 and shows a teaching force of 25. There is a four-year course, seven months to the year; the fees are $58, $58, $55 and $50 for the four years respectively. The Dean is Dr. E. S. Porter, Tenth and Walnut. The attendance 1904-5 was 37; graduates, 6. The next session opens Oct. 7, 1905, and ends May 17, 1906.

SOUTHWESTERN HOMEOPATHIC MEDICAL COLLEGE.—This college was organized in 1892, and has a faculty of 17 professors and 10 lecturers and assistants, 27 in all. A college dispensary supplies clinical material. The curriculum covers four years of seven months each. Total fees: First and second years, $80; third, $70, and $65 for the fourth. The Dean is Dr. A. L. Monroc. Total number of students for 1904-5 was 19; graduates, 6. Next session opens Sept. 26, 1905, and closes April 24, 1906.

LOUISIANA.

Louisiana, having a population of 1,381,625, contains two medical colleges: Medical Department of the Tulane University of Louisiana and New Orleans University. They are both situated in New Orleans, a city of 287,104 people. The cost of room and board is from $16 to $22 a month.

New Orleans.

FLINT MEDICAL COLLEGE OF NEW ORLEANS UNIVERSITY.—Colored. This school was organized in 1889. The faculty is made up of 7 professors, 4 lecturers and instructors, 11 in all. Clinical material is supplied by the Sarah Goodridge Hospital and by an outdoor clinic. This college is a member of the Association of American Medical Colleges. The curriculum covers a graded course of four years, thirty weeks each. The laboratories and lecture rooms are ample. Examinations are held monthly. Total fees for the first, second and third year are $40 each, and $50 for the last year. The President is Dr. F. H. Knight, New Orleans. Total enrolment for 1904-5 was 55; graduates, 7. The sixteenth college year begins Sept. 26, 1905, and will end March 17, 1906.

Medical Department of the Tulane University of Louisiana.—This school was organized in 1834 as the Medical College of Louisiana, and became, by law, in 1847, the Medical Department of the University of Louisiana, and in 1884 the Medical Department of the Tulane University of Louisiana. The faculty and all other instructors number 49. By acts of legislature the Charity Hospital, with its 900 beds, has been opened to the students of this school, for clinical study, not only in medicine and surgery, but also in obstetrics and gynecology. In the year 1903 there were 8,813 cases treated in the wards of this hospital; these were indoor patients, and, in addition, 19,302 outdoor patients were treated in the free dispensary department. The Milliken Memorial Hospital, with a capacity for 200 children, is also available for study of clinical cases. Bedside instruction is given by the attending physicians to these hospitals, and postmortem examinations are held before the students. The laboratories are large and well equipped, and the lecture rooms and recitation rooms are ample. The course of study covers four terms of twenty-eight weeks each. Total fees for the first two years are $135 each, and for the third and fourth, $145 and $170, respectively. The Dean is Dr. Stanford E. Chaille, New Orleans. The total number of medical students registered for 1904-5 was 469; graduates, 83. The seventy-second session begins Oct. 19, 1905, and will close May 2, 1906.

MAINE.

Maine, population 694,466, has one medical college, located in Portland, population 60,000. Board and lodging cost from $3 to $5 a week.

Portland.

Medical School of Maine.—This, the Medical Department of Bowdoin College, was organized in 1820. It has 15 professors and 18 instructors, total 33. Students of the first and second years are instructed in Brunswick, a town of 6,800 inhabitants. The third and fourth year classes are taught in Portland, where are situated the Maine General Hospital and other clinical advantages. Applicants for admission, unless they possess a diploma, are examined in English, arithmetic, algebra, geometry, United States history, physics, chemistry and Latin. The course covers four years of eight months each. The total fees are $120 for the first year; for the second and third, $110, and $110 for the fourth year. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1904-5 was 93; graduates, 18. The next session opens Oct. 19, 1905, and closes June 20, 1906.

MARYLAND.

Maryland, with a population of 1,188,044, contains eight medical colleges, all located in Baltimore, a city with 508,957 inhabitants. They are as follows: School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore University School of Medicine, Baltimore Medical College, Women's Medical College, Southern Homeopathic Medical College, Johns Hopkins Medical School and Maryland Medical College. The Bay View Hospital, having a capacity for 2,000 patients, is open to students for clinical instruction, and furnishes good opportunities for practical demonstrations. Board and lodging can be obtained for from $3 to $5 per week.

Baltimore.

Johns Hopkins Medical School.—This is the Medical Department of Johns Hopkins University, and was organized in 1893. The faculty comprises 11 professors, 71 lecturers, clinical professors, associate professors, associates, instructors and assistants, a total of 82. The Johns Hopkins Hospital and Dispensary furnishes abundant and varied clinical material; the lying-in department of the hospital, opened in 1896, is in successful operation. The requirements for admission demand that the applicant either has, (*a*) completed the chemical-biologic course which leads to the A.B. degree in the university; (*b*) graduated at an approved college or scientific school, and can furnish evidence of an acquaintance with Latin and a fair reading knowledge of French and German, and a knowledge of physics, chemistry and biology, such as may be obtained from a year's course, including laboratory instruction. The school is a member of the Association of American Medical Colleges. The laboratories are large, well lighted and well equipped. The buildings are ample and built expressly for the purpose for which they are used. In the method of instruction special emphasis is laid on practical work in the laboratories, dispensary and wards of the hospital. The first two years are devoted mainly to practical work in the laboratories, combined with demonstrations, recitations and lectures, and during the remainder of the course opportunity for the personal study of cases is given. The work covers a graded course of four years, eight and a half months to the year. Final examinations, partly written and partly oral, include practical tests in laboratory and clinical work; the general character of the student's work is closely watched. The charge for tuition is $200 per annum, with no fees unless a microscope is rented; that fee is $5 a year. The Dean is Dr. William H. Howell, 232 W. Lanvale St. Total registration in 1904-5 was 291; graduates, 55. The next session begins Oct. 3, 1905, and ends June 2, 1906.

University of Maryland School of Medicine.—This institution was organized in 1807 as the College of Medicine of Maryland, and in 1812, other faculties having been added, the whole was chartered under the name of the University of Maryland. The faculty is composed of 14 professors, 46 associates and lecturers, etc., a total of 60. The University Hospital, a part of which is used for a hospital for foreign seamen and another portion for a free city hospital, offers excellent clinical facilities. Beside this, the Presbyterian Eye, Ear and Throat Charity Hospital, in which 11,317 patients were treated in 1902; the Hospital for the Relief of Crippled and Deformed Children, containing 40 beds; the Maternity Hospital, and a college dispensary furnish material for clinical study. This school is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are ample and well equipped. An entirely new laboratory building has just been erected. The fourth-year class, divided into sections, receives special training in practical laboratory work in a well-appointed clinical laboratory. Didactic, laboratory and clinical instruction, special attention being paid to bedside work, make up the system of teaching. The course covers four years of eight months each, and is graded. The total fees for the first two years are $135 each; for the third year, $125, and $155 for the final year. The Dean is Dr. R. Dorsey Coale, Baltimore. The total number of students registered in 1904-5 was 340; graduates, 100. The ninety-ninth session begins Oct. 2, 1905, and will terminate June 1, 1906.

Baltimore Medical College.—This college was organized in 1881, and has a faculty of 59. The clinical material is furnished by the Maryland General Hospital, having a capacity of 200 beds; the Maryland Lying-in Hospital; the Mount Hope Retreat, which presents good opportunity for the study of nervous and mental diseases, and a college dispensary, which, beside the great number of ambulatory patients treated, has an outdoor department that permits of the advanced student taking care of charity cases and carrying out his own treatment. This college belongs to the Association of American Medical Colleges. The college buildings afford ample laboratory, clinical and lecture room space. Bedside teaching in the hospital wards is carried on in sections, and every member of the senior class is required to attend throughout the session. The course of study is graded and covers four years of eight months each. The Dean is Dr. David Streett. The total number of students registered in 1904-5 was 406; graduates, 96. The twenty-fifth session opens Sept. 20, 1905, and closes May 20, 1906.

College of Physicians and Surgeons.—This school was organized in 1872, and in 1878 Washington University School of Medicine, established in 1827, was consolidated with it. The faculty numbers 53. The clinical facilities, beside those afforded in common with other schools, are supplied by the Baltimore City Hospital, the Hospital for the Colored Race, containing 100 beds; the Nursery and Child's Hospital, with 150 beds; the Maryland Lying-in Asylum and a college dispensary. This school is a member of the Association of American Medical Colleges. The work covers a graded course of four years, eight months constituting a year. Total fees are $115, $115, $115 and $135 for the respective years. The Dean is Dr. Charles F. Brown. The total number of students registered in 1904-5 was 298; graduates, 70. The next session opens Oct. 1, 1905, and closes June 1, 1906.

Maryland Medical College.—This school was organized in 1898 and has a faculty of 19 professors, 25 associates, lecturers, etc., 44 in all. The Franklin Square Hospital, West End Maternite and a college dispensary furnish clinical material. The course of study covers four years of eight months each. A matriculation fee of $5 and total laboratory fees for the four years of $55 are charged; tuition is $75 each year. The Dean is Dr. J. B. Schwatka, 1003 North Broadway. Total registration for 1904-5 was 207; graduates, 93. The eighth session begins Sept. 15, 1905, and closes in May, 1906.

Woman's Medical College.—This school was organized in 1882 and has a faculty of 17 professors, 18 associates, assistants and lecturers, a total of 35. The Hospital of the Woman's Medical College and a college dispensary furnish general clinical material, while abundant special material is furnished by the Presbyterian, Eye and Ear and the Sheppard and Enoch Pratt Hospital (for mental cases). The college is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are equipped with all necessary apparatus; the practical work is emphasized. Eight months constitute a school year and the course covers graded work for four years. The total fees for the first three years are $106 each, and $81 for the last year, with $30 graduation fee. The Dean is Dr. S. Griffith Davis, 1220 Sight St. Total number registered for 1904-5 was 36; graduates, 3. The twenty-fourth session opens Oct. 1, 1905, and closes May 31, 1906.

Southern Homeopathic Medical College.—This school was organized in 1890, and has a faculty of 10 professors, 14 associates and lecturers, a total of 24. The clinical facilities are those offered by the Maryland Homeopathic Hospital, which has 55 beds, and the dispensary; the obstetric department also furnishes clinical material. Applicants for matriculation must pass a satisfactory examination in English, arithmetic, geography, history and Latin, unless they possess satisfactory evidence that they have done a corresponding amount of work. The course covers graded work for four years, seven months to the year. The fees are $105 for the first year, $100 each for the second and third, and $130 for the last year; $350 in advance for the full four years' course, with a reduction in the fees for the fourth year to those whose averages exceed 90 per cent. in previous years. The Dean is Dr. George T. Shower, 421 Roland Ave. Total registration for 1904-5 was 33; graduates, 9. The fifteenth session begins Oct. 3, 1905, and ends May 1, 1906. 1. 1906.

Baltimore University School of Medicine.—This school, organized in 1884, has a faculty of 10 professors and 25 lecturers, demonstrators, etc., in all 35. The Baltimore University Hospital, Lying-in Hospital and the clinical material used in common with the other schools supply the facilities for practical work. The course is four years of six months each. The fees are about $100 each year. The Dean is Dr. Hampson H. Biedler, 119 W. Saratoga St. Total registration for 1904-5 was 70; graduates, 14. The next session opens Oct. 1, 1905, and closes April 1, 1906.

MASSACHUSETTS.

Massachusetts, population 2,805.340, has four medical colleges: Medical School for Harvard University, Boston University School of Medicine, College of Physicians and Surgeons, and Tufts College Medical School. They are all situated in Boston, a city of 603,163 inhabitants. Board and lodging can be obtained from $5 to $7 per week.

Boston.

Medical School of Harvard University.—This was organized in 1782, and has a faculty of 32 professors, 113 associates and assistants, etc., a total of 145. Beside the clinical advantages mentioned, the Boston Lying-in Hospital, the Boston Dispensary, where 43,918 patients were treated last year; the Infants' Hospital, the Children's Hospital, Long Island Hospital, containing 250 beds, and the Marine Hospital, all furnish excellent opportunity to the student for clinical study. Students are also permitted to visit the Free Hospital for Women and Carney Hospital on application to the physicians on duty. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons, of suitable age and attainments, as may be admitted by special vote of the faculty in each case. Each candidate is required to hand in the original note book in which he recorded the work performed by him in qualitative analysis, and also to pass a written examination in theoretical and descriptive chemistry. If conditioned in chemistry one year is allowed in which to remove the condition. The laboratories and lecture rooms offer ample facilities, and the equipment is good; special facilities are open to those desiring to pursue advanced or original work. The course of study covers four years of nine months each: the course is graded, and each corelated group as taken up presents sufficient variety to avoid monotony. A series of written, oral and practical examinations are distributed throughout the course of study. Fees: Matriculation, $5; $200 each year. The Dean is Dr. William L. Richardson, 688 Boylston St. The total registration for 1904-5 was 307; graduates, 67. The 124th session begins Sept. 28, 1905, and ends June 28, 1906.

Tufts College Medical School.—This school was organized in 1893 as the Medical Department of Tufts College. It has a faculty of 33 professors, 55 assistants and lecturers, etc., a total of 88. Clinical material is furnished by the Boston City Hospital, Massachusetts Charitable Eye and Ear Infirmary, Free Home for Consumptives, Free Hospital for Women, Boston Dispensary, Cambridge Hospital, St. Elizabeth's Hospital, Carney Hospital and the college dispensary; the student has also the advantages derived from an out-department in connection with the Boston Dispensary. "Graduates of a high school, college or university, and students having certificates of entrance to a college or university, or holding the State of New York Regents' certificate," also certain approved preparatory school graduates, are admitted without examination; all others must pass an examination in English, Latin, physics and mathematics, including elementary algebra and plane geometry. The laboratories and lecture rooms are ample in their equipment and capacity. Teaching is carried on by means of lectures, recitations and practical work in the laboratories and clinics; frequent examinations are held during a course, and final examination on completing the subject. Graded instruction covering four years of eight months each makes up the full course. The total fees are $150 each year; dissecting material is furnished at cost. The Dean is Dr. Harold Williams. Total number of students for 1904-5 was 385; graduates. 62. The twelfth session begins Sept. 27, 1905, and ends May 30, 1906.

College of Physicians and Surgeons.—This school was organized in 1880, and has a faculty of 25 professors and 14 lecturers and assistants, a total of 39. Clinical facilities are furnished by the North End Dispensary Hospital, Union General Hospital, and the city and state institutions. This school is a member of the Association of American Medical Colleges. The course of study covers graded work for four years of nine months each. The total fees for the first year are $100. and for each of the other years about $110, with a graduation fee of $30. The Registrar is Dr. John H. Jackson, 155 Franklin St., Fall River. Total students registered, 1904-5, 168; graduates, 28. The twenty-sixth session begins Sept. 19, 1905, and ends June 18, 1906.

Boston University School of Medicine.—Homeopathic. This school was organized in 1873; in 1874 the New England Female Medical College. founded in 1848, was merged into it. The faculty includes 20 professors, 39 associates and assistants, etc., a total of 59. Clinical material is furnished by the Massachusetts Homeopathic Hospital, containing 235 beds, a dispensary, a maternity hospital, and the Westborough Insane Hospital. 800 patients. Candidates who have taken their degree in arts, philosophy or science are not examined; certificates of graduation from approved high and preparatory schools accepted in lieu of entrance examinations; all others are examined in English, Latin, French or German, or history, mathematics, physics and chemistry. The instruction is graded and covers a period of four years, eight months each. Total fees for the first year are $105; for the second and third. $125 each, and for the last year, $155. The Dean is Dr. John P. Sutherland, 295 Commonwealth Ave. Total registration for 1904-5 was 93; graduates, 14. The thirty-third session opens Oct. 5, 1905, and closes June 6, 1906.

MICHIGAN.

Michigan, population 2,420,982, has six medical colleges. Two of these, University of Michigan, Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of about 16,000 people. Board and lodging cost from $2.50 to $5 a week. Detroit, a city of 300,000 inhabitants, contains three medical colleges, as follows: Detroit College of Medicine, Detroit Homeopathic College and the Michigan College of Medicine and Surgery. Board and room can be obtained for $3 a week and upward. Grand Rapids Medical College is located in Grand Rapids, population 87,565. Room and board cost from $3 to $3.50 a week.

Ann Arbor.

University of Michigan, Department of Medicine and Surgery.—This was organized in 1850, and has a faculty composed of 18 professors, 35 associates, instructors, etc., a total of 53. The University Hospital, with nearly 200 beds, furnishes the clinical facilities. The requirements for admission provide that the applicant, either by certificate or examination, show a sufficient knowledge of the following: English grammar, rhetoric and composition; United States and general history; algebra, through quadratics, plane and solid geometry and plane trigonometry; physics, biology and chemistry, these subjects to be accompanied by laboratory work; German or French and Latin. The laboratories and their equipment are good, and the training in them and in didactic work is thorough. The new medical building accommodating the laboratories of hygiene, bacteriology, physiologic chemistry, pathology, histology, embryology and anatomy is now completed and occupied. This school is a member of the Association of American Medical Colleges. The curriculum embraces four years of nine months each. A combined course leading to degrees in both arts and medicine in six years is offered. The total fees for Michigan students for the entire course of four years is about $300, and for others $350. The Dean is Dr. Victor C. Vaughan. Total registration for 1904-5 was 376; graduates, 61. Next session begins Sept. 26, 1905, and will end June 21, 1906.

Homeopathic College, University of Michigan.—This department of the University was organized in 1875, and has a faculty of 29 professors and 20 assistants, total 49; a part of the teaching force is from the other departments of the University. The Homeopathic Hospital, containing 140 beds, furnishes material for clinical teaching. The course covers four years of nine months each. The total fees for Michigan students are about $240 for the four years, and for other students about $295. The Dean is Dr. W. B. Hinsdale. The enrolment for 1904-5 was 66; graduates, 12. The next session begins Sept. 26, 1905, and closes June 21, 1906.

Detroit.

Detroit College of Medicine.—This school was formed in 1885 by the union of Detroit Medical College organized in 1868, and the Michigan College of Medicine, established 1880. The faculty embraces 21 professors, 71 lecturers, instructors, etc., a total of 92. Clinical facilities are offered by the following hospitals: St. Mary's and Harper, each of which contain a free dispensary; Woman's, St. Luke's, the Children's Free Hospital and the House of Providence. This school is a member of the Association of American Medical Colleges. The course covers four years of seven months each. The work includes laboratory, didactic and clinical study. Fees: Matriculation, paid once, $5; tuition, each term, $65: hospital and laboratory tickets, each $10, and diploma fee, $30. The Secretary is Dr. H. O. Walker. Total enrolment for 1904-5 was 208; graduates, 54. The next session begins Sept. 20, 1905, and will close May 3, 1906.

Michigan College of Medicine and Surgery—Saginaw Valley Medical College.—These two schools, organized in 1888 and 1896, respectively, were consolidated last year, to continue on the site of the former. The faculty numbers 57. Clinical facilities are offered by a college dispensary, the Emergency Hospital and Detroit Eye and Ear Infirmary. This school is a member of the Association of American Medical Colleges. The course covers graded work for four years of eight months each. The fees are about $80 to $95 per year: third year, $70, and $95 for the fourth year. The Dean is Dr. Hal. C. Wyman, 46 W. Adams Ave., Detroit. Total registration for 1904-5 was 78; graduates, 26. The next session begins Sept. 19, 1905, and will end May 8, 1906.

Detroit Homeopathic College.—This was organized in 1899, and has a faculty of 37. Grace Hospital and a college dispensary are available for study of clinical cases. Unless possessing at least a high school diploma applicants for admission will be examined by the state board. The course embraces work for four years of eight months each. Fees: From $70 to $90 per year. The Dean is Dr. D. A. MacLachlan; Registrar, J. M. Griffin. Total enrolment for 1904-5 was 44; graduates, 12. The next session begins September, 1905, and will close May, 1906.

Grand Rapids.

Grand Rapids Medical College.—This was organized in 1897. The faculty is made up of 27 professors and 6 assistants, in all 33. Clinical cases in the U. B. A., St. Mary's and Woman's Butterworth hospitals and St. John's Orphan Asylum and a college dispensary are available for study. The course is four years of seven months each. The total fees are about $65 for each year. The Dean is Dr. G. L. McBride, 141 E. Bridge St. Next session opens Sept. 27, 1905, and closes May 1, 1906.

MINNESOTA.

Minnesota, population 1,751,394, contains three medical colleges: Hamline University College of Medicine, and the two medical departments of the University of Minnesota, viz., the College of Medicine and Surgery and the College of Homeopathic Medicine and Surgery. They are all situated in Minneapolis, a city with a population of 225,000. The various hospitals of Minneapolis furnish ample clinical material, and owing to the proximity to St. Paul the clinical advantages of that city are available. The average cost of board and lodging is $20 a month.

Minneapolis.

College of Medicine and Surgery. University of Minnesota. —This department of the University of Minnesota was created in 1883, but at that time its only function was to examine for the degrees of B.M. or M.D. In 1888, by the consolidation and absorption of the Minnesota Hospital Medical College and the St. Paul Medical College, its present status was assumed. The faculty is composed of 30 professors and 75 instructors and assistants, a total of 105. The medical school occupies six buildings, and its laboratories are excellent. Eight large hospitals in the Twin Cities, beside the University Dispensary and St. Paul dispensary, afford an abundant supply of material for clinical study. The curriculum covers four years of nine months each, and the work is carefully graded. The entrance requirement of one year of university, in addition to four years of high school work, limits the number of students, but assures a high standard of the student body. This school is a member of the Association of American Medical Colleges. Total number of students registered in 1904-5 was 227; graduates, 75. Total fees for each year, $100. The Dean is Dr. Parks Ritchie. The next session opens Sept. 1, 1905, and closes June 1, 1906.

College of Homeopathic Medicine and Surgery.—This is a department of the University of Minnesota and was organized in 1888. The faculty comprises 19 professors and 14 assistants, 33 in all. Instruction in the primary branches is received, in common with the students of the College of Medicine and Surgery from the professor of the department of medicine. The course is graded, extending over four years of nine months each. The total fees for the first two years are $100 each and $80 each for the last two years. The Dean is Dr. Eugene L. Mann. Total number of students registered in 1904-5 was 16; graduates, 4. The next session opens Sept. 1, 1905, and closes June 1, 1906.

Hamline University College of Medicine.—This was organized in 1883. Its faculty is composed of 29 professors, 16 instructors and assistants, a total of 45. The laboratories and lecture rooms are large, well lighted and supplied with all the necessary equipment. Clinical work is offered to the student in City Hospital, Asbury Methodist Hospital, Swedish, St. Barnabas' and St. Mary's hospitals in Minneapolis, Luther Hospital, City and County, and St. Joseph's, in St. Paul, and the college dispensary. This school belongs to the Association of American Medical Colleges. The course of study covers graded work for four years, eight and a half months making a year. Total fees, first year, $90; second year, $87.50, and for each of the last two, $80. The Dean is Dr. George C. Barton. Total number of students, 1904-5, was 123; graduates, 10. The next session begins Sept. 19, 1905, and ends June 6, 1906.

MISSISSIPPI.

Mississippi, population 1,551,270, has one medical college, the Medical Department of the University of Mississippi, located at Oxford, a city with 2,000 inhabitants.

Oxford.

University of Mississippi Medical Department.—This school was organized two years ago, with 7 professors and 5 assistants, a total of 12. Each college term extends over nine months. The school is a member of the Association of American Medical Colleges. Dr. W. S. Leathers is the Acting Dean. The total registration in 1904-5 was 18; graduates, none. The next session begins Sept. 21, 1905, and ends June 7, 1906.

MISSOURI.

Missouri, population 3,106,665, has eleven medical colleges. St. Louis, population 575,238, contains six of these, viz.: St. Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Medical Department St. Louis University, (Marion-Sims-Beaumont College of Medicine), Washington University Medical Department, and Barnes Medical College. Board and lodging can be procured for from $3.50 to $5 a week. Kansas City, with 163,752 inhabitants, has six colleges, namely: Kansas City Medical College, University Medical College, the Hahnemann Medical College of Kansas City, Medico-Chirurgical College and Eclectic Medical University. Room and board can be obtained in this city for from $3 to $5 a week. Ensworth Medical College and Central Medical College are located in St. Joseph, population 105,000; board and room can be had for from $3.50 to $5 a week. Department of Medicine of the University of Missouri is at Columbia, a town of 5,651. Board and lodging can be obtained at Columbia for from $2 to $5 a week. (Since writing the above, the Kansas City Medical College and the Medico-Chirurgical college have been absorbed by the University of Kansas, and the Ensworth and Central Medical colleges have united.)

Columbia.

Department of Medicine of the University of Missouri.—This department was organized at Columbia in 1872. The faculty includes 11 professors, 19 assistant professors, lecturers, etc., a total of 30. Clinical facilities are supplied by the Parker Memorial State Hospital. A new $40,000 building for the medical laboratories has recently been completed and has excellent equipment. Special emphasis is laid on thorough training in the scientific branches which constitute the foundation of medicine. Four years' course nine months each, carefully graded. The university offers also a combined course of six years, conferring degrees in both arts and medicine. The entrance requirements are a diploma from a good high school, or the full equivalent. This school is a member of the Association of American Medical Colleges. There is no charge for tuition, the only expenses being a library fee of $10 each year, and small laboratory fees. The Dean is Dr. A. W. McAlester. Total registration of students for 1904-5 was 108; graduates, 8. The next session opens Sept. 12, 1905, and closes June 6, 1906.

Kansas City.

University Medical College.—This was organized in 1881 as the University of Kansas City Medical Department, and in 1888 was reorganized under its present name. Its faculty comprises 37 professors and 48 lecturers and assistants, a total or 85. Clinical material is furnished by the University Hospital, owned by the college, with 100 beds; the City Hospital, German Hospital, Home for the Aged, containing 147 beds; the Sisters' Hospital, Scarritt and St. Margaret's hospitals, the Children's Home, St. Joseph's Orphan Asylum, and the college dispensary and obstetric department. Instruction is given by means of lectures, recitations, demonstrations and laboratory work and clinics. The school is a member of the Association of American Medical Colleges. The college building, which has been recently enlarged, furnishes ample accommodations for laboratories and lecture rooms. The course of study covers four years of 30 weeks each, and the work is graded. The total fees for each of the first two years are $100; for the third, $80, and $100 for the fourth year. The Dean is Dr. Samuel C. James, Bryant Bldg. The total number of students registered in 1904-5 was 238; graduates, 58. The twenty-fourth session begins Sept. 5, 1905, and ends April 20, 1906.

Kansas City Medical College.—This school was established in 1869, and in 1905 was absorbed by the University of Kansas, becoming the clinical department of the University. The first two years of the course will probably be taught in Lawrence, Kan., the last two in Rosedale, Kan., and Kansas City, Mo. The total registration for 1904-5 was 116; graduates, 34.

Medico-Chirurgical College.—This school was organized in 1897 as the Kansas City College of Medicine and Surgery, and was reorganized in 1898 under the above name. In 1905 the college became the clinical department of the University of Kansas, together with the Kansas City Medical College and the College of Physicians and Surgeons of Kansas City, Kan. The total registration for 1904-5 was 38; graduates, 12.

Kansas City Hahnemann Medical College.—This school was formed by the union of the Kansas City Homeopathic Medical College, organized in 1888, and the Kansas City University College of Homeopathic Medicine and Surgery. It has a faculty of 43. The City Hospital, Homeopathic Hospital, the Sanitarium Scarritt, University, Women's and Children's, German, Bethany and Children's Hospitals are open to its students for clinical study. The college dispensary and clinics also supply clinical material. Applicants for admission must show by diploma, certificate or examination that they have a sufficient knowledge of English, arithmetic, geography, United States history and Latin equal to one year's work. The course covers four years of seven months each. The Dean is Dr. Moses T. Runnels, 912 Walnut St. Total registration for 1904-5 was 32; graduates, 9. The next session begins September 5, 1905, and closes April 1, 1906.

Eclectic Medical University.—This was organized in 1898, and has 25 in its faculty. The curriculum covers four years of eight months each. Fees, about $70 each year, with a graduation fee of $15. The Dean is Dr. Theodore Doyle. Total students for 1904-5 was 56; graduates, 17. The next session begins Sept. 11, 1905, and ends April 22, 1906.

Homeopathic Medical College of Missouri.—This was organized in 1857, and has a faculty of 33 professors and 5 assistants, total, 38. The curriculum covers four years of seven months each. Fees: First year, $80; second, $75, third, $60, and $85 for the fourth year. The Dean is Dr. L. C. McElwee, 1221 North Grand Ave., St. Louis. Total registration for 1904-5 was 45; graduates, 7. The next course begins Sept. 10, 1905, and ends April 15, 1906.

St. Joseph.

Ensworth Medical College.—This was organized in 1873 and has a faculty of 25 professors and 7 lecturers and assistants, 32 in all. Ensworth Hospital, with 250 beds; City Hospital, containing 40 beds; the State Hospital, No. 2, which is open to the students once a week, and a college dispensary furnish clinical material. Applicants for admission must show by certificate or examination that they possess a sufficient knowledge of English, arithmetic, algebra, physics and Latin equal to one year's instruction. The building furnishes ample laboratory and lecture-room facilities. The curriculum covers a graded course of four years of seven months each. The fees are about $55 each for the first three years, and $75 for the fourth year. The Secretary is Dr. J. W. Heddeus, 614 Francis St. Total enrolment for 1904-5 was 90; graduates, 22. The next session opens Sept. 15, 1905, and closes April 20, 1906. (This school united with the Central Medical College in 1905, assuming the name of Ensworth-Central Medical College.)

Central Medical College.—This school was organized in 1894, and has a faculty of 18 professors and 10 lecturers, in all 28. The Methodist and St. Joseph's hospitals, State Hospital, No. 2, and the City and County hospitals are available for clinical study; a college dispensary also supplies clinical material. The requirements for admission are the possession of a high school diploma, or its equivalent, or an examination. The curriculum embraces four years of seven months each. Fees: First year, $55; second, $50; third, $50, and $75 for the fourth year. The Secretary is Dr. C A. Tygart. Total enrolment for 1904-5 was 70; graduates, 17. The next session begins Sept. 15, 1905, and will end April 15, 1906. (College now united with Ensworth Medical College.)

St. Louis.

Washington University Medical Department.—This school was organized in 1891 from the St. Louis Medical College, which was founded in 1842. In 1899 the Missouri Medical College, organized in 1840, was added. The faculty comprises 39 professors, 35 lecturers and instructors, a total of 74. Clinical material is furnished by the St. Louis Mullanphy Hospital, Washington University Hospital and Dispensary, Washington University Lying-in Hospital, Bethesda Hospital and O'Fallon Dispensary. In addition to these, the City Hospital and Insane Asylum are used in common with the other schools. The Medical Department is a member of the Association of American Medical Colleges. The college buildings, of which there are two, furnish the best laboratory and lecture-room facilities. The course is four years of eight months each, and the system of study embraces laboratory, didactic and clinical teaching. The total fees for the first year are $126.25; second, $120.25; and for the third, $106.25, and fourth, $101.25. The Dean is Dr. Robt. Luedeking. Total registration of students for 1904-5 was 263; graduates, 64. The next session opens Sept. 29, 1905, and closes May 24, 1906.

St. Louis University Medical Department (Marion-Sims-Beaumont College of Medicine).—This is the Medical Department of the St. Louis University. The faculty is composed of 42 professors, 63 lecturers and assistants, a total of 105. Clinical facilities are offered by Alexian Brothers' Hospital, with 250 beds: Rebekah Hospital, having a capacity for 50 patients; Josephine Hospital, 50 beds; Mt. St. Rose Throat and Chest Hospital, 150 beds; Good Samaritan Hospital, 50 beds; St. Mary's Infirmary, containing 150 beds; the City Hospital and Insane Asylum, each with a capacity of 600 patients. Grand Avenue Dispensary also furnishes good material for practical instruction. This school is a member of the Association of American Medical Colleges. The buildings afford ample laboratory and lecture-room space, and they are well equipped. The course of study embraces laboratory and clinical instruction, with recitations and lectures. The curriculum covers four years of seven months each. The total fees for the first year are $80; for the second and third, $75 each, and $100 for the fourth. The Secretary is Dr. H. W. Loeb, 3559 Olive St. Total number of students registered for 1904-5 was 385; graduates, 103. The next session opens Oct. 1, 1905, and closes May 1, 1906.

St. Louis College of Physicians and Surgeons.—This school was organized in 1878, and has a faculty of 24 professors, 15 lecturers, instructors, etc., a total of 39. The resources for clinical instruction are Jefferson Hospital, which is open to students of this college only; City Hospital, with 600 beds: Female Hospital, having 250 beds: City Insane Asylum: City Poorhouse, and the college dispensary. This college is a member of the Association of American Medical Colleges. The laboratory and lecture-room space and the equipment are ample. The course of study covers four years of seven months each, and is graded. Total fees for the first year are $80; second, $70; third, $75, and $85 for the fourth year. The Dean is Dr. Waldo Briggs, 2600 Gamble St. Total number of students registered, 1904-5, was 275; graduates, 29. The next session begins Sept. 15, 1905, and ends April 12, 1906.

Barnes Medical College.—(Medical Department Barnes University.) This school was organized in 1892, and has a faculty of 35 professors and 25 lecturers and assistants, a total of 60. The clinical advantages are those offered by Centenary Hospital, with 150 beds; City Hospital, the college dispensary and the outdoor obstetrical department. The laboratories are well equipped and other facilities ample. The course of study includes graded work for four years of seven months each. The total fees for the first three years are $75 each year, and $85 for the fourth year. The Secretary is Dr. Pinckney French, Missouri Trust Building. Total registration for 1904-5 was 427; graduates, 109. The next session opens Sept. 17, 1905, and closes May 10, 1906.

American Medical College.—Eclectic. This was organized in 1873, and has a faculty of 17 professors. St. Louis City Hospital and a college dispensary supply ample clinical material. The requirements for admission are those of the National Federation of Eclectic Medical Colleges of which this college is a member. The course of study covers four years of seven months each. The total fees are: Tuition, $75 per year, dissecting material $5 per year for four years, final examination and graduation fee $25. Total registration for 1904-5 was 66; graduates, 16. The Dean is Dr. M. M. Hamlin, 2906 Lawton Avenue. The next session opens Sept. 18, 1905, and closes April 22, 1906.

NEBRASKA.

Nebraska, population 1,066,300, has three medical colleges: The University of Nebraska College of Medicine and John A. Creighton Medical College of Omaha (population 102,555); and Lincoln Medical College, at Lincoln (population 40,169). Board and lodging can be obtained for from $3 to $5 a week.

Lincoln and Omaha.

University of Nebraska College of Medicine.—This was organized in 1880 as the Omaha Medical College. In 1902 an affiliation was entered into with the University of Nebraska, the name being changed to the College of Medicine of the University of Nebraska. The first two years are given at Lincoln. The last two years are given only at Omaha. The faculty is composed of 38 professors and 22 lecturers and assistants, total 60. The Douglas County, Immanuel, Wise Memorial and Omaha Methodist hospitals, together with the college dispensary, furnish an abundance of material for clinical study and demonstration. The course consists of graded studies covering four years of eight months each. The method of instruction consists of didactic and clinical lectures, section clinics, demonstrations, recitations and laboratory work. The college building is well adapted to its purpose, the laboratories being well equipped and the lecture room commodious. The fees, including breakage deposits, are $90 for the first two years, and $100 for the last two years. Total number of students enrolled in 1904-5, 92; graduates, 28. The college is a member of the Association of American Medical Colleges. The Secretary is Dr. Paul H. Ludington, Bee Building. The next annual session will begin Sept. 19, 1905, and end May 24, 1906.

Omaha.

John A. Creighton Medical College.—This school, organized in 1892, is the Medical Department of Creighton University, and has a faculty of 32 professors and 17 associates lecturers and assistants, a total of 49. The clinical facilities are those of St. Joseph's Hospital, containing 300 beds and having a clinical amphitheater connected with it; St. Bernard's Hospital, with 256 beds; Douglas County Hospital, Presbyterian and Mercy hospitals, and the college dispensary: the material is abundant and varied. The school is a member of the Association of American Medical Colleges. The building, which was completed in 1898, contains excellent facilities for laboratory and lecture-room work, and the equipment is good. In the methods of instruction, including clinical, didactic and laboratory work, special emphasis is laid on practical work. The course of study embraces four years of eight months each. The total fees for the first two years are $90 each, and $85 for each of the last two years. The Dean is Dr. D. C. Bryant, McCague Bldg. Total number of students registered in 1904-5 was 167; graduates, 34. The thirteenth session opens Sept. 19, 1905, and closes May 1, 1906.

Lincoln.

Lincoln Medical College.—Eclectic. This was organized in 1889, and has a faculty of 28. The requirements for admission are those of the National Confederation of Eclectic Medical Colleges, of which this college is a member. The course of study covers four years of thirty-two weeks each. The total fees for the first year are $80; second, $75; third, $75, and $85 for the fourth year, or $255 for all four years together. The Secretary is Dr. Samuel Metheny. Total number of students for 1904-5 was 81; graduates, 15. The next session begins Sept. 13, 1905, and ends April 20, 1906.

NEW HAMPSHIRE.

New Hampshire, population 411,588, contains one medical college, located in Hanover, population, 1,884.

Hanover.

Dartmouth Medical School.—This is the Medical Department of Dartmouth College, and was organized in 1797. Its faculty is made up of 18 professors and 2 instructors, 20 in all. The Mary Hitchcock Memorial Hospital, a cottage hospital of 36 beds, supplies the clinical material. Applicants for admission must possess an education at least equivalent to graduation from a registered high school. The laboratories afford good facilities for work. The course covers four years of thirty-two weeks each. Fees: $100 each year. The Dean is Dr. William T. Smith. The total number of students registered for 1904-5 was 60; graduates, 12. The work for the first and second years begins with that of the academic department, commencing Sept. 21, 1905, and closing June 27, 1906; for the advanced classes it begins Aug. 15, 1905, and ends March 30, 1906.

NEW YORK.

New York State, population 7,268,894, has ten medical colleges. Seven of these, College of Physicians and Surgeons, Columbia University, Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College and the University and Bellevue Hospital Medical College, are located in New York City, population 3,437,202. This city, with its hospitals and dispensaries, offers abundant clinical material. Board and lodging can be obtained for from $5 to $7 a week.

Albany Medical College is in Albany, a city of 100,000 people, where board and room can be had for from $4 to $5 a week.

The University of Buffalo Medical Department is situated in Buffalo, population 352,387; here board and lodging can be obtained for from $3.50 to $5 per week.

The College of Medicine, Syracuse University, is in Syracuse, a city of 18,374 inhabitants. Board and lodging can be obtained for from $3.50 a week upward.

The laws of the State of New York require of the prospective student of medicine a preliminary education equivalent to that obtainable in a four years' course in any of the public high schools recognized by the regents as maintaining a satisfactory standard. On proof of at least this amount of education, a medical-student certificate will be issued by the state authorities. Certain medical schools of the state have additional requirements.

1. The College of Physicians and Surgeons requires a medical-student certificate issued on the attendance of at least one year's course of study in a college or scientific school registered by the Regents as maintaining a satisfactory standard (or equivalent) or a certificate of the college entrance examination board covering 15 points, each point being the equivalent of a course of five periods weekly throughout the academic year.

2. Cornell University Medical College requires Regents' counts; in algebra 4 counts, plane geometry 4, elementary United States history and civics 2, second year English or its equivalent 8, second year Latin or the first four books of Caeser's Commentaries, or first year Latin and first year German or French or Spanish 8, making a total of 26 counts, with additional counts aggregating 48 counts.

3. University and Bellevue Hospital Medical College requires unconditional matriculation with a medical-student certificate.

4. The College of Medicine, Syracuse University, requires Regents' counts; in Latin 4 counts, plane geometery 4, algebra 2 and inorganic chemistry 2, with additional, aggregating 48 counts.

New York City.

College of Physicians and Surgeons.—This school was organized in 1807 and its present relation, that of Medical Department of Columbia University, was assumed in 1860. The faculty embraces 33 professors and 95 demonstrators, instructors, etc., a total of 128. The Vanderbilt Clinic, where 42,995 patients were treated during the year 1904, and which is equipped with all modern appliances for the study and treatment of disease, and Sloane Maternity Hospital, containing 124 beds, offer exclusive clinical advantages to students of this school. Beside these, Roosevelt Hospital, containing 244 beds; New York Hospital, with 190 beds; Bellevue, 1,100 beds; Presbyterian, 330 beds; St. Luke's, 225 beds; General Memorial, 100 beds, and New York Foundling Hospital, 700; Willard Parker and Reception and Riverside hospitals, 600 beds; Babies' Hospital, 50 beds; St. Mary's Free Hospital for Children, 120 beds, all offer free clinical teaching to matriculants of this school. The laboratories, lecture rooms and amphitheaters are ample in equipment and accommodation; special provisions are made to equip each student thoroughly in each of the laboratories and thus make the work individual. The work is graded, covering four years of eight months each. The Dean is Dr. Samuel Lambert. The total fees for the first year are $255; for the second and third, $250, and $275 for the fourth year. Total registration for 1904-5 was 568; graduates, 178. The next session begins Sept. 27, 1905, and ends June 13, 1906.

Long Island College Hospital.—This was organized in 1858 and has a faculty of 20 professors and 75 assistants, instructors, etc., a total of 95. Long Island College Hospital, containing 300 beds and connected with a four-story maternity hospital; Polhemus Memorial Clinic, Dudley Memorial and Hoagland Laboratory, completely equipped with the most modern apparatus, are all a part of the college. Beside the clinical facilities furnished by these, members of the faculty attend at Kings County, St. John's, Brooklyn, Norwegian, Williamsburg, Methodist Episcopal and the Brooklyn Eye and Ear hospitals, where the students are offered opportunities for clinical study. Many of these also contain outpatient departments, thus permitting advanced students to attend personally to cases. Bedside instruction is also given in the wards. The course covers four years of thirty weeks each. Fees: First year, $195; second, $200; third, $160, and $195 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1904-5, was 414; graduates, 73. The forty-eighth session opens Oct. 2, 1905, and closes June 2, 1906. The summer session has been discontinued owing to the lengthening of the regular session.

Cornell University Medical College.—This department of Cornell University was established in 1898. The faculty is composed of 45 professors and 162 instructors and assistants, a total of 207. The City Hospital, having 1,000 beds; Bellevue Hospital, New York Hospital, Presbyterian, Willard Parker and Reception with 200 beds; New York Skin and Cancer; St. Francis, having a capacity of 230 beds; St. Vincent's, with 200 beds; the Manhattan Eye and Ear Infirmary, in addition to a large college dispensary, furnish the clinical resources; the material is abundant and varied. The first two years of the course are taken at New York or at Ithaca, and the work is devoted to the fundamental scientific subjects. The last two years are spent mostly in practical and clinical work and the hospital advantages are utilized. The Loomis Laboratory, a five-story modern building, is well equipped and supplies ample practical laboratory facilities required in the advanced work. "The essential features of the entire system is the division of the classes of the several years into small sections." Fees: First year, $190; second and third, $180 each, and $200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1904-5 was 392; graduates, 74. The next session opens Sept. 27, 1905, and closes June 13, 1906.

University and Bellevue Hospital Medical College.—This is a department of the New York University, and was founded in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. The faculty is composed of 39 professors and 64 instructors, assistants, etc., in all 103. Bellevue and City hospitals, hospitals of the Workhouse and Almshouse, Manhattan State Hospital for the Insane, Willard Parker and Reception hospitals, Riverside Hospital for Contagious Diseases, Randall's Island, Presbyterian, St. Luke's, St. Vincent's, General Memorial, Gouverneur, Columbus, Harlem, New York Foundling, and the Society for the Lying-in hospitals, the New York Eye and Ear Infirmary, and a large college dispensary are open to students of this school for a study of clinical cases. The Carnegie building, a five-story structure adjoining the college, is devoted to laboratory instruction and investigation, and, with the other two large college buildings, affords good laboratory and lecture-room facilities. A new six-story addition to the laboratory building has just been completed. The course of instruction covers four years of eight months each. Actual clinical teaching, in conjunction with and found on laboratory work, recitation and didactic teaching, is emphasized to the greatest possible degree. Fees: First year, $185; second and third, $180 each, and $195 for the fourth year. The Dean is Dr. Edward G. Janeway. Total registration for 1904-5 was 391; graduates, 47. The next session opens Oct. 4, 1905, and closes June 9, 1906.

New York Homeopathic Medical College and Hospital.—This school, organized in 1858, has a faculty of 33 professors and 44 lecturers, instructors, etc., 77 in all. Flower Hospital, adjoining the college and having a completely equipped out-patient department: Metropolitan Hospital, New York Ophthalmic Hospital and the Laura Franklin Free Hospital for Children also furnish clinical facilities. The course covers four years of seven months each. Total fees for the first year, $130; second, $130; third, $125, and $155 for the fourth year. The Dean is Dr. W. H. King, 64 W. 51st St. Total students registered for 1904-5 was 110; graduates, 23. The next session begins Oct. 4, 1905, and ends May 17, 1906.

New York Medical College and Hospital for Women.—Homeopathic. This school was organized in 1863, and has a faculty of 22 professors, 19 lecturers and assistants, total 41. The college hospital and dispensary, the Memorial Hospital for Women, Metropolitan, Ophthalmic and the Laura Franklin Free Hospital for Children afford clinical material. The course covers four years of twenty-six weeks each. Fees: First year, $145; second, $140; third, $135, and $155 for the fourth year. The Dean is Dr. M. Belle Brown, 30 W. 51st St. Total registration for 1904-5 was 34; graduates, 9. The next session opens Oct. 2, 1905, and closes May 9, 1906.

Eclectic Medical College of the City of New York.—This was organized in 1865, and has a faculty of 15 professors and 19 lecturers, demonstrators, etc., 34 in all. A college dispensary, Beachonian Dispensary, Manhattan and Red Cross hospitals and Muncie Sanatorium supply clinical facilities. The work covers four years of seven months each. The total fees: First year, $125; second, $125; third, $125, and $155 for the fourth year. The Dean is Dr. George W. Boskowitz. Total registration for 1904-5 was 99; graduates, 13. The next session opens Sept. 27, 1905, and closes May 1, 1906.

Albany.

Albany Medical College.—This school was organized in 1838, and in 1873 it assumed its present relations, as Medical Department of Union University. The faculty is composed of 15 professors and 57 lecturers, instructors and assistants, a total of 72. Albany, St. Peter's, Child's and County hospitals, South End Dispensary, Eye and Ear Infirmary and the Albany Hospital for Incurables, also the free dispensaries connected with each, are open to students for clinical study. The curriculum embraces graded work for four years of seven and one-half months each. Teaching is carried on in the laboratories, clinics and lecture rooms. Examinations are held twice a year in all subjects. Fees: Third year, $110, and $130 for each other year. The Dean is Dr. Samuel B. Ward. Total registration for 1904-5 was 172; graduates, 52. The next annual session opens Sept. 26, 1905, and closes May 8, 1906.

Buffalo.

University of Buffalo Medical Department.—This was organized in 1846 and has a faculty made up of 46 professors and 36 assistants, lecturers, etc., a total of 82. Buffalo General Hospital, Hospital of the Sisters of Charity, Erie County and German hospitals and the German Deaconess' Hospital supply ample clinical material for study. A college dispensary, recently organized, is also of value in practical work. The buildings and hospitals are well equipped for clinical and laboratory work. Bedside instruction is insisted on and the senior students are permitted to assist in operations and give anesthetics. This school is a member of the Association of American Medical Colleges. The course covers four years of seven months each. The tuition is $125 each year; this does not include laboratory fees. The Dean is Dr. Matthew D. Mann, 37 Allen St. Total registration for 1904-5 was 231; graduates, 37. The sixtieth session opens Sept 25, 1905, and closes May 31, 1906.

Syracuse.

College of Medicine, Syracuse University.—This school was organized in 1872 as the Medical Department of Syracuse University. The faculty is composed of 15 professors and 39 lecturers, instructors, etc., in all 54. Clinical facilities are furnished by St. Joseph's Hospital, with a capacity of 200 patients; Hospital of the House of the Good Shepherd. Syracuse Hospital for Women and Children, Onondaga County Orphan Asylum, and the Syracuse Free Dispensary. The laboratories and amphitheaters are large and well equipped. This school is a member of the Association of American Medical Colleges. The curriculum embraces a four years' graded course, eight months making a school year. The total fees for each of the four years are $130. Beginning with the session of 1905-6, additional laboratory and graduation fees will be required, making the average total fee for each year $167.25. The Dean is Dr. Henry D. Didama, 424 S. Salina St. Total number of students registered for 1904-5 was 154; graduates, 31. The next session opens Oct. 3, 1905, and closes June 13, 1906.

NORTH CAROLINA.

North Carolina, population 1,893,810, has four medical schools which grant degrees and one which gives only the first two years of the medical course. The Medical Department of the University of North Carolina is located at Chapel Hill (population 1,999) and at Raleigh (population 13,643). The Leonard School of Medicine is at Raleigh. The North Carolina Medical College is located at Davidson (population 904), and at Charlotte (population 18,000). Wake Forest School of Medicine is at Wake Forest (population 823).

Chapel Hill and Raleigh.

University of North Carolina Medical Department.—This school was organized in 1891, and formerly gave only the work of the first two college years at Chapel Hill. In 1902 the course was extended to four years by the establishment of a department at Raleigh, in which the last two years are given. Degrees are now conferred and the faculty in the completed school of medicine numbers 29. It is a member of the Association of American Medical Colleges. The number of students enrolled in 1904-5 was 100; graduates, 11. Total fees are $85 per year. Board, room, light and heat may be had for from $84 to $102 per college year. The President is Dr. F. P. Venable, Chapel Hill. The next session will begin Sept. 11, 1905, and end June 6, 1906.

Raleigh.

Leonard School of Medicine.—Colored. This department of Shaw University was established in 1882 by the American Baptist Home Mission Society to train colored students of medicine. It has a faculty of 10. A free hospital and dispensary supply clinical material. A preliminary entrance examination is given to applicants not possessing a certificate or diploma of educational requirements. The course covers four years of seven months each. The total fees for each year are $75. The dormitory plan is adopted generally, and board and room costs $2 a week. The Dean is Dr. James McKee. Total enrolment for 1904-5 was 136; graduates, 21. Next session opens Oct. 1, 1905, and closes April 14, 1906.

Davidson and Charlotte.

North Carolina Medical College.—This school was organized in 1893, and has a faculty of 21. The Presbyterian Hospital in Charlotte supplies the clinical facilities. The course covers four years of eight months each, the last year at Charlotte. Fees: First three years, $85 each, and $100 for the fourth year. The President is Dr. J. P. Monroe of Davidson; Dr. I. W. Faison, Charlotte, is Dean of the Faculty. The total registration for 1904-5 was 81; graduates, 26. The next session begins Sept. 7, 1905, and closes April 2, 1906.

Wake Forest.

Wake Forest School of Medicine.—This school was organized in 1902. It only gives the first two years of the medical course. Each annual course extends over nine months. The school is a member of the Association of American Medical Colleges. It has a faculty of 10, and last year enrolled 18 students. The fees are $85 a year. The Dean is Dr. Frederick K. Cooke. The next session opens Aug. 31, 1905, and closes May 26, 1906.

OHIO.

Ohio, population 4,157,545, has ten medical colleges. Four of these, the Medical College of Ohio, Eclectic Medical Institute, Miami Medical College, and Pulte Medical College are located in Cincinnati, a city of 325,902 inhabitants. The clinical advantages of Cincinnati are good; beside many smaller hospitals, the Cincinnati Hospital is open to the students for study. Board can be procured in Cincinnati for from $3 to $5 per week. The Laura Memorial Woman's Medical College has ceased to exist.

Cleveland, population 381,768, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. The City Hospital, with 275 beds, is used in common by them for clinical study. Board and lodging can be had for from $2.50 to $5 a week.

Columbus, population 125,560, contains two: Starling Medical College and Ohio Medical University. Board and lodging cost from $2.50 to $5 per week.

Toledo, with 131,822 people, has one medical school: Toledo Medical College. It has good clinical advantages. Board and room can be had for from $3 to $5 a week.

Cincinnati.

Medical College of Ohio.—This is the Medical Department of the University of Cincinnati organized in 1819, and has a faculty made up of 24 professors, 32 lecturers and assistants, a total of 56. Good Samaritan Hospital, with 100 beds: Cincinnati Hospital, with 550 beds, and a well-equipped college dispensary furnish clinical facilities. The buildings supply ample laboratory and lecture-room space, and their equipment is good. The course of study is graded and covers four years of eight months each. This school is a member of the Association of American Medical Colleges. The lecture fees are $125 each year for each student entering after July 1, 1903; $100 each year for those who have matriculated prior to July 1, 1903. In addition there is a matriculation fee of $5, payable but once, and a graduation fee of $25. Total registration of students for 1904-5 was 121; graduates, 33. The Dean is Dr. P. S. Conner, Cincinnati. The next session begins Sept. 28, 1905, and ends May 30, 1906.

Miami Medical College.—This school was organized in 1852, and has a faculty of 23 professors and 35 lecturers and demonstrators, a total of 58. The clinical facilities are furnished by the Cincinnati Hospital and a college dispensary. This college is a member of the Association of American Medical Colleges. The curriculum embraces a four-year graded course of eight months each. The total fees are, for the first year, $130: for the second and third, $125, and $150 for the fourth year. The Dean is Dr. J. C. Oliver, 628 Elm St. The total registration for 1904-5 was 85; graduates, 24. The next session opens Oct. 1, 1905, and closes June 1, 1906.

Eclectic Medical Institute.—This school, organized in 1845, has a faculty of 31 members. The Seton Hospital, Cincinnati Hospital, and a college dispensary furnish clinical material. It is a member of the National Confederation of Eclectic Medical Colleges. The course covers four years of thirty weeks each. The fees are $75 for each year, with a graduation fee of $25. The Dean is Dr. Rolla L. Thomas, 792 East McMillan St. Total enrolment, 1904-5, was 135; graduates, 18. The next session begins Sept. 18, 1905, and closes April 18, 1906.

Pulte Medical College.—Homeopathic. This was organized in 1872 and has a teaching force of 21 professors and 17 assistants, 38 in all. Pulte Hospital, Cincinnati Hospital, Bethesda Hospital, Home of the Friendless and Foundlings, and a college dispensary supply clinical material. The curriculum covers four years of seven months each. Fees: First year, $80: for the second and third, $75 each, and $100 for the fourth. The Dean is Dr. Charles E. Walton. Total enrolment for 1904-5 was 18: graduates, 5. The next session opens Sept. 27, 1905, and closes May 1, 1906.

Cleveland.

The Cleveland College of Physicians and Surgeons.—This school was organized in 1863 as Charity Hospital Medical College, became the Medical Department of Wooster University in 1869, and the Medical Department of the Ohio Wesleyan University in 1896, when it assumed its present title. The faculty is composed of 28 professors, 8 assistant professors, 29 lecturers, assistants, instructors, etc, 59 in all. Cleveland General Hospital, Cleveland City Hospital and a college dispensary are used for regular clinical teaching. St. Alexis, St. John's, St. Clair and Mt. Sinai hospitals are utilized for extra-mural clinics. This school is a member of the Association of American Medical Colleges. The school is co-educational. The total annual fees are $130. The curriculum covers four years of eight months each. The Dean is Dr. R. E. Skeel, 785 Prospect St. Total enrolment for 1904-5 was 84; graduates, 16. The next term opens Sept. 20, 1905, and closes May 4, 1906.

Western Reserve University Medical College.—The Medical Department was organized in 1843. Its teaching faculty includes 23 professors, 31 lecturers, demonstrators and assistants, a total of 54. Clinical facilities are offered students of this school by Lakeside Hospital, having 250 beds; St. Vincent's Hospital, having about 150 beds; City Hospital, with 250 beds; St. Alexis Hospital, with 250 beds, and the Home of Maternity, with the dispensary service at Lakeside and Charity hospitals, and a tuberculous dispensary at the college. The laboratory chairs are endowed, the teachers devoting their entire time to teaching and research work. A clinical laboratory has recently been added, where a systematic course of instruction is given. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of eight months each. Three years of college work are required for admission to first year of medical course. The total fees are $125 for each year. The Dean is Dr. B. L. Millikin, 260 Euclid Avenue. Total enrolment for 1904-5 was 73; graduates, 6. The next session begins Oct. 1, 1905, and closes June 4, 1906.

Cleveland Homeopathic Medical College.—This school was founded in 1897 by a consolidation of Cleveland University of Medicine and Cleveland Medical College, the former of which was incorporated in 1850, and is the second oldest homeopathic medical college in the United States. The faculty includes 34 professors and 29 adjuncts, lecturers, etc., 63 in all. The clinical facilities are obtained from the Cleveland Homeopathic Hospital, the Cleveland City Hospital, the Cleveland Maternity Hospital, and a college dispensary. The course embraces four years of thirty weeks each. Fees: First year, $110: second and third years, $105 each, and $125 for the fourth year. The Dean is Dr. Gaius J. Jones. Total number of students registered, 1904-5 was 66: graduates, 24. The next session opens Sept. 27, 1905, and closes May 16, 1906.

Columbus.

Ohio Medical University.—This school was organized in 1890, and has a faculty of 22 professors, 6 instructors, 5 assistants and 2 demonstrators, 35 in all. The Protestant Hospital, State Hospital, Ohio Penitentiary Hospital and a college dispensary provide material for clinical work. This school is a member of the Association of American Medical Colleges. The course is four years of 34 weeks each. Fees: First year, $105; second year, $100; third year, $100, and $110 for the fourth year. The Dean is Dr. George M. Waters. Total students for 1904-5 was 158: graduates, 37. The next session begins Sept. 12, 1905, and ends May 8, 1906.

Starling Medical College.—This school was organized in 1847 and has a faculty composed of 20 professors and 16 lecturers, associates, etc., a total of 36. St. Francis Hospital, which is under the control of this faculty; Hawkes' Hospital of Mt. Carmel, the Lawrence Hospital, St. Anthony Hospital and a college dispensary are available for clinical study. This college is a member of the Association of American Medical Colleges. The work covers four years of thirty weeks each. Fees: $100 per year: matriculation fee, $5: graduation fee, $10. The Dean is Dr. Starling Loving. Enrolment for 1904-5 was 105: graduates, 30. The next session opens Sept. 13, 1905, and closes May 5, 1906.

Toledo.

Toledo Medical College.—The school was organized in 1882, and in 1904 became the Medical Department of Toledo University. It has a faculty of 20 professors, 20 lecturers and assistants, in all 40. Toledo Hospital, St. Vincent's and Robinwood Hospitals, Lucas County Infirmary Hospital, Toledo Hospital for the Insane, and a free dispensary supply clinical facilities. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of eight months each. The fees are $75 for each year, with a matriculation fee of $5, payable once. The Dean is Dr. W. A. Dickey, 10 Hartford Block. Total enrolment for 1904-5 was 83; graduates 7. The next session opens Sept. 22, 1905, and closes May 11, 1906.

OKLAHOMA.

Oklahoma, population 398,331, has only one medical school, which is located at Norman, a city of about 3,682 inhabitants.

Norman.

School of Medicine, University of Oklahoma.—This school, which was organized in 1903, teaches only the first two years of the regular medical course, each course extending over a period of nine months. Total registration for 1904-5 was 8. The Dean is Dr. R. P. Stoops; the Registrar, Roy Hadsell. The next session begins Sept. 12, 1905, and ends June 9, 1906.

Oklahoma City.

College of Medicine Epworth University.—In 1904 only the first year of the medical course was given, but beginning October, 1905, the full four years' course will be taught. The faculty consists of 15 professors and 12 assistants, instructors, etc., a total of 27. The Oklahoma City, St. Anthony's hospitals, Amie Rescue Home and a college dispensary furnish material for clinical instruction. The laboratories are well supplied and the lecture rooms are large, well lighted and well ventilated. The entrance requirement is a high school diploma or its equivalent. The course of study embraces graded work for four years of seven months each. The total fees are about $70 each year. The Dean is Dr. A. K. West; Secretary, Dr. H. C. Todd. The registration for 1904-5 was 7: no graduates. The next session begins Oct. 3, 1905, and ends May 11, 1906.

OREGON.

Oregon, population 413,536, has two medical colleges: Medical Department Willamette University, located in Salem, a city of 10,000 people, and University of Oregon Medical Department, in Portland, a city of about 125,000 population. Board and lodging may be obtained in Salem for from $3 to $5 per week, and in Portland for from $4 to $6.

Salem.

Medical Department Willamette University.—The school was organized in 1864. The faculty consists of 19 teachers. Clinical facilities for study are supplied by Salem Hospital, and a college dispensary. This school is a member of the Association of American Medical Colleges. The course embraces four years' work of six months each. Fees: First year, $110; second, $100; third, $75, and $50 for the fourth year. The Dean is Dr. W. H. Byrd. Total enrolment for 1904-5 was 50; graduates, 7. The next session begins Oct. 1, 1905, and ends March 30, 1906.

Portland.

University of Oregon Medical Department.—This department of the State University was organized in 1887, and has a faculty of 14 professors and 14 assistants, lecturers, etc., a total of 28. Good Samaritan and St. Vincent's hospitals, containing 200 and 350 beds, respectively, and Multomah County Hospital furnish good material for clinical study. The requirements for admission are those of the Association of American Medical Colleges, but the members of the faculty do not hold examinations for entrance. The college building is modern and well equipped, presenting ample teaching facilities. The course is four years of seven months each. Fees: First year, $142.50; second, $137.50; third, $107.50, and for the fourth, $57.50. The Dean is Dr. Simeon E. Josephi, Portland. The total number of students for 1904-5 was 102; graduates, 26. The next session opens Sept. 15, 1905, and closes April 30, 1906.

PENNSYLVANIA.

Pennsylvania, population 6,302,115, has seven medical colleges. Of these Philadelphia, having a population of 1,293,697, contains six as follows: University of Pennsylvania Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia and Temple College Department of Medicine. The clinical facilities of Philadelphia present abundant and varied material for study. Beside the individual hospitals connected with each of the schools the charity hospitals are open to all the students in common. Board and lodging costs from $4 a week upward.

The other school, Western Pennsylvania Medical College, is situated in Pittsburg, a city of 321,616 people. The cost of board and lodging is from $4 to $6 a week.

Philadelphia.

University of Pennsylvania Department of Medicine.—This is the first medical college established in this country, having been organized in 1765 as the Medical Department of the College of Philadelphia; the first degree was granted in 1768. When from the College of Philadelphia the University of Pennsyylvania was organized, in 1791, it became the Medical Department of the University, its present relation. The faculty is made up of 27 professors, 2 associate professors, 4 adjunct professors, 7 assistant professors, 97 demonstrators, lecturers, assoociates, instructors, etc., a total of 137. Abundant and varied clinical material is furnished by the University Hospital, capacity 300 beds, which treats over 14,000 cases annually; University Maternity Pavillion, with 50 beds; Philadelphia Hospital, containing 1,000 beds; Pennsylvania, Children's and the Southeastern Hospital and Dispensary. Special attention is paid to bedside instruction and to thoroughly practical work. Applicants for admission must furnish evidence of the education required to enter the academic department of the university. The buildings known as Medical Hall, Medical Laboratory Building, the laboratories of Pathology, Physiology and Pharmacology, the Laboratory of Hygiene, the Wistar Institute of Anatomy, and the Wm. Pepper Clinical Laboratory supply excellent laboratory and lecture-room facilities and are well equipped. The course embraces study for four years of nine months each. The total fees for each year are $200, with a matriculation fee of $5 for the first year. The Dean is Dr. Charles H. Frazier. Total enrolment for 1904-5 was 546; graduates, 116. The next session opens Sept. 29, 1905, and closes June 20, 1906.

Jefferson Medical College of Philadelphia.—This school was organized in 1825, and has a faculty of 29 professors and 81 lecturers, demonstrators, etc., a total of 110. Jefferson Hospital, together with its maternity Department, are used exclusively by students of the school for clinical study. Bedside instruction is given daily to small sections of the senior class. In addition, the following hospitals are open for study of clinical cases: Pennsylvania, Philadelphia, St. Joseph's, German, Municipal and Wills Eye hospitals. The course of study covers graded work of four years of eight months each. The laboratories are large and well equipped, a new five-story laboratory building having recently been added: the lecture rooms and amphitheaters are also ample. A new fireproof hospital is now building, to cost $1,000,000, to be finished in 1906. The tuition is $180 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland. The total number of students for 1904-5 was 676; graduates, 179. The next session opens Sept. 25, 1905, and closes June 4, 1906.

Medico-Chirurgical College of Philadelphia.—This school was organized in 1881, and has a faculty made up of 25 professors and 55 assistants, lecturers, etc, 80 in all. Opportunities for clinical study are offered exclusively to students of this school by the Medico-Chirurgical Hospital, with 125 beds, and its children's and maternity hospital, having 30 beds. In common with other schools, the following are used: Philadelphia, Pennsylvania, German, Samaritan, St. Joseph's, St. Agnes', St. Mary's, Methodist, Jewish and the Philadelphia Lying-in hospitals. This school is a member of the Association of American Medical Colleges. With new laboratories, lecture rooms, a modern hospital and fine clinical amphitheater, this college is amply provided and the equipment is good. The work embraces four years of eight months each. Fees: $150 per annum; matriculation, $5, payable once. The Dean is Dr. Seneca Egbert. Total enrolment, 1904-5 was 461; graduates, 86. The next session opens Sept. 25, 1905, and will close June 2, 1906.

Woman's Medical College of Philadelphia.—This school was organized in 1850, and has a faculty of 10 professors and 38 assistants, lecturers, etc., in all 48. Clinical facilities are offered by the Hospital of the Woman's Medical College of Pennsylvania, Woman's Hospital, West Philadelphia Hospital for Women, German, Jewish, Children's and Philadelphia hospitals, Presbyterian hospital, Wills Hospital for Diseases of the Eye, the Howard Hospital and the Philadelphia Lying-in Charity. This school is a member of the Association of Ameriacn Medical Colleges. The lecture room and laboratory equipment is good. The curriculum covers four years of eight months each. Fees: First year, $140; second, $145; third, $135.50, and $100.50 for the fourth year. The Dean is Dr. Clara Marshall. Total enrolment for 1904-5 was 151; graduates. 42. The next session begins Sept. 27, 1905, and will end may 23, 1906.

Hahnemann Medical College and Hospital.—Homeopathic. This was organized in 1848, and has a faculty of 17 professors and 56 lecturers, instructors, etc., in all 73. Hahnemann College Hospital and Pennsylvania Hospital furnish material for clinical work. The requirements for admission are those established by the Intercollegiate Committee of the American Institute of Homeopathy. The work covers four years of thirty-two weeks each. Fees: For each year, $150; matriculation, $5. Total number of students for 1904-5 was 164; graduates, 44. The Dean is Dr. Charles M. Thomas. The next session begins Sept. 25, 1905, and will end May 24, 1906.

Medical Department of the Temple College.—This department was organized in 1901, and has a faculty of 18 professors and 22 assistants, etc., a total of 40. Instruction is given in the afternoon and evening, and the course extends over five years of nine months each. The fees are $125 per year. The Dean is Dr. I. Newton Snively. The enrolment for 1904-5 was 87; graduates, 2. School opens Sept. 18, 1905, and closes June 15, 1906.

Pittsburg.

Western Pennsylvania Medical College.—This is the Medical Department of the Western University of Pennsylvania, and was organized in 1886. The faculty is composed of 38 professors and 54 associates, assistants, etc., 92 in all. Clinical material for study is furnished by a college dispensary, and the Emma Kaufman Clinic, Reineman Maternity Hospital, Mercy, South Side, Passavant and St. John's hospitals. This school is a member of the Association of American Medical Colleges. The course of study embraces graded work for four years of nine months each. Special attention is given to practical bedside work. The total fees are $150 for each year. The Dean is Dr. J. C. Lange. Total enrolment for 1904-5 was 281; graduates, 53. The next session begins Oct. 1, 1905, and will close June 1, 1906.

PHILIPPINE ISLANDS.

Manila.

University of Saint Thomas Medical Department.—The University was founded by a papal decree in 1587, and the medical school was added in 1871. The faculty consists of 81 teachers. The course extends over a period of six years of nine months each. The first year is a preparatory one, devoted to the teaching of physics, chemistry and biology. The degree of licenciado is conferred at the conclusion of the fifth year, and the degree of doctorado at the end of the sixth year, during which only special work is done. This last year is optional, the degree of licenciado entitling the holder to all the rights and privileges of the medical practitioner. The degree is equivalent to the English M.B. The Rector of the University is Dr. Fr. Raymundo Velasquez; the Secretary of the medical department is Lic. Blas C. Alcuaz. Total registration for 1903-4 was 68; graduates, 14. The course began July 2, 1904, and ended March 7, 1905.

SOUTH CAROLINA.

South Carolina, population 1,340,316, has one medical college, situated in Charleston, a city of 55,807 people. Board and room can be obtained for from $12 to $16 a month.

Charleston.

The Medical College of the State of South Carolina.—This school was founded in 1823. The faculty is made up of 10 professors and 10 assistants, etc., 20 in all. The clinical facilities are those offered by the City Hospital, where surgical, obstetrical and medical instruction is given. Applicants for matriculation must show a diploma of graduation from some literary or scientific institution of learning or a certificate from some legally constituted high school. The course covers four years of six months each. The total fees for each of the first two years are $100, and $75 each for the last two. The Dean is Dr. Francis L. Parker. Total enrolment for 1904-5 was 87; graduates, 28. The next session opens Oct. 1, 1905, and closes April 15, 1906.

TENNESSEE.

Tennessee, population 2,020,616, has ten medical colleges. Of these the Medical Department of the University of Nashville, Vanderbilt University Medical Department, University of Tennessee Medical Department, and Meharry Medical College are situated in Nashville, a city with a population of 80,865. The City Hospital, containing 100 beds, is used by all the schools in common for clinical study. Board and lodging cost from $3 to $4 a week.

Knoxville, population 32,637, contains two colleges, Tennessee Medical College and Knoxville Medical College. The cost of room and board in that city is from $2.50 to $4 a week.

Chattanooga Medical College and Chattanooga National Medical College are situated in Chattanooga, a city of 30,154 people. Board and lodging cost there from $2 a week upward.

Memphis Hospital Medical College is located in the growing city of Memphis, population 102,320. Good board can be obtained for from $3 to $4 a week.

The University of West Tennessee is in Jackson, whose population is 15,000.

The other school, the Sewanee Medical College, is located at Sewanee, a mountain town of 1,200 people.

Nashville.

University of Nashville Medical Department.—This school, established in 1850, has a faculty of 12 professors and 11 lecturers, assistants, etc., in all 23. This school is a member of the Southern Medical College Association. The course of study covers four years of twenty-six weeks each. The tuition for each of the four years is $65. The Dean is Dr. William G. Ewing. Total enrolment for 1904-5 was 317; graduates, 75. The next session begins Oct. 2, 1905, and ends March 30, 1906.

Vanderbilt University Medical Department.—This school was founded in 1874, and in 1895, when the present medical building was completed, the course was extended, the standard raised. The present faculty of 35 consists of 20 professors and 15 lecturers, etc. The school is a member of the Southern Medical College Association. The course covers four years of seven months each. The minimum entrance requirement is a high school diploma or its equivalent. The total fees for the first three years are $105 each, and $130 for the fourth year. The Dean is Dr. William L. Dudley. Total enrolment for 1904-5 was 159; graduates, 35. The next session begins on or about October, 1905, and ends in April, 1906.

University of Tennessee Medical Department.—This was organized in 1876 as the Nashville Medical College; its present relations were assumed in 1879. The faculty is composed of 20 professors and 5 lecturers, assistants, etc., 25 in all. The school is a member of the Southern Medical College Association. The course of study includes work for four years of six months each. The total fees for each of the first three years are $65 and $90 for the fourth year. The Dean is Dr. Paul F. Eve, 614 Broad St. Total enrolment for 1903-4 was 164 students; graduates, 33. The next session begins Oct. 2, 1905, and ends April 2, 1906.

Meharry Medical College.—Colored. This school was organized in 1876 as the Medical Department of Central Tennessee College, now Walden University, "for the purpose of furnishing to the colored people of the South an opportunity of obtaining a medical education." The faculty is made up of 10 professors and 12 instructors, demonstrators, etc., 22 in all. The work embraces a four-year graded course, seven months to the year. The total fees for the first three years are $40 each, and $50 for the fourth year. The Dean is Dr. G. W. Hubbard. Total registration for 1904-5 was 328; graduates, 59. The next session begins Sept. 1, 1905.

Knoxville.

Tennessee Medical College.—This school was organized in 1889, and has a faculty of 14 professors and 12 assistants, 26 in all. A new building with large and well-fitted laboratories has been completed. City General Hospital and a fee dispensary supply material for study of clinical cases. This school is a member of the Southern Medical College Association. The curriculum includes graded work for four years of seven months each. Fees: Matriculation, $5; annual fee, $50; graduation fee, $25. The Secretary is Dr. S. L. Jones. Total number of students for 1904-5 was 92; graduates, 13. The next annual session begins Nov. 1, 1905, and closes June 1, 1906.

Knoxville Medical College.—Colored. This school was established in 1900, following the discontinuance of the Medical Department of Knoxville College, organized in 1895. The teaching force comprises 12. The course covers four years of seven months each. Fees: $40 per year. The Secretary is Dr. H. M. Green. Total number of students for 1904-5 was 47; graduates, 6. The next session opens Nov. 10, 1905, and closes June 1, 1906.

Chattanooga.

Chattanooga Medical College.—This is the Medical Department of Grant University, and was organized in 1889. The faculty consists of 10 professors and 16 instructors, demonstrators, etc., total 26. Adequate clinical facilities are afforded by the wards of Baroness Erlanger Hospital, a county asylum, an outdoor clinic maintained in the college building, and all material furnished by the city physician's office which the faculty desire to utilize. The scholastic requirements are those of the Southern Medical College Association. of which this school was a charter member, and to which it belongs. These requirements involve a strictly graded course covering four years of six months each. The total fees approximate $55 each session. The trustees materially added to the general facilities of the institution by the erection of another fine four-story building of brick and stone for the medical department three years ago. wherein much modern and elaborate equipment has been installed. The Dean is Dr. E. A. Cobleigh. The total enrolment for the session of 1904-5 was 268; graduates, 39. The next session opens about Oct. 1, 1905, and ends about April 7, 1906.

Memphis.

Memphis Hospital Medical College.—This school, organized in 1878, has a faculty of 10 professors and 18 assistants, beside quiz masters. Excellent clinical facilities are furnished by the City Hospital, Presbyterian Hospital, St. Joseph's Hospital and the East End Dispensary, the latter being located in the college building. The course includes graded work for four years of six months each. The total fees for the first three years are $65; for the fourth, $90. The Dean is Dr. W. B. Rogers. Total registration for 1904-5 was 476; graduates, 151. The twenty-sixth annual session will begin Oct. 1, 1905, and close April 30, 1906.

Jackson.

Medical Department of the University of West Tennessee.—Colored. This school, organized in 1900, has a faculty of 12. The course is four years of seven months each. The fees are $40 per year; graduation, $10 extra. Registration for 1904-5 was 33; graduates, 6. The next session opens Sept. 18, 1905, and closes April 18, 1906.

Sewanee.

Medical Department of the University of the South (Sewanee Medical College).—This school was organized in 1891, and has a faculty of 23. It is a member of the Southern Medical College Association. The course is four years of seven months each. The fees are $65 for each of the first two years, $55 for the third and $80 for the last year. The Dean is Dr. John S. Cain. Total enrolment for 1904-5 was 132: graduates, 36. The fourteenth session commences April 1, 1905, and will close October 25, 1905.

TEXAS.

Texas, population 3,048,710, has seven medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 37,789 inhabitants. Good board and room can be procured for from $15 to $20 a month.

The Medical Department of Fort Worth University is at Fort Worth, population 35,000. The cost of board and room in that city is from $12 to $15 a month.

The Baylor University College of Medicine, the Medical Department of Southwestern University, the College of Physicians and Surgeons, and the Physio-Medical College of Texas are situated in Dallas, population 55,000.

The Gate City Medical College is situated in Texarkana.

Dallas.

Baylor University College of Medicine.—This is a new name for the University of Dallas Medical Department, which was organized in 1901. In June, 1903, it became the Medical Department of Baylor University at Waco. The faculty numbers 20 professors and 16 assistants, total 36. Parland Hospital, with 90 beds; St. Paul's Sanitarium, Baptist Memorial Hospital and a college dispensary and hospital are utilized for clinical study. The course covers four years of seven months each. The school is a member of the Association of Southern Medical Colleges. The fees are $75 for each of the four years, with a matriculation fee of $5 paid once, and a graduation fee of $25. The Dean is Dr. E. H. Cary. Total registration for 1904-5 was 132; graduates, 36. The next session opens Oct. 2, 1905, and closes May 1, 1906.

Galveston.

University of Texas Medical Department.—This department of the State University was organized in 1891, and has a faculty of 27. The John Sealy Hospital, also having an outdoor department. and St. Mary's Infirmary supply good material for clinical study. The requirements for admission are proof, either by certificate or examination, that the candidate is sufficiently proficient in English, including grammar, composition and rhetoric; mathematics through plane geometery and algebra, including quadratics, and general history. The curriculum embraces graded work for four years of eight months each. Laboratories of chemistry, physiology, pharmacology, anatomy, pathology, bacteriology, histology, pharmacy and clinical medicine, completely equipped for practical work by students. Fees, to residents of the state: First year, $50; second and third, each $20, and $5 for the fourth. Non-residents of the state are required to pay an additional fee of $50 each year. The President is Dr. William L. Prather; the Dean is Dr. William S. Carter. Total registration for 1904-5 was 169; graduates, 23. The next session begins Oct. 7, 1905, and ends May 31, 1906.

Ft. Worth.

Medical Department of Fort Worth University.—This school was organized in 1894, and has a faculty of 15 professors and 17 lecturers, assistants, etc., in all 32. Clinical facilities are supplied by St. Joseph's Hospital, with 200 beds; the Benevolent Home, containing 75 beds; the Gelia Collins' Rescue Home, having 50 beds, and a college dispensary. The school is a member of the Southern Medical College Association. The course covers four years of six months each. The total fees for each of the first three years are $75 and $100 for the fourth year. The Dean is Dr. Frank Gray. The total enrolment for 1904-5 was 191; graduates, 21. The next session opens Oct. 2, 1905, and closes April 6, 1906.

Southwestern University Medical College.—This is the Medical Department of Southwestern University and was organized in June, 1903. It has a faculty of 18 professors and 19 instructors, total 37. The course of instruction is graded and covers four years in medicine and two in pharmacy. Requirements for admission are equivalent to those prescribed by the Association of American Medical Colleges. The fees are: Matriculation, $5, paid once; annual tuition, $75; graduation, $25. The hospitals represented by the faculty and open for clinical teaching are: St. Paul's Sanitarium, City Hospital, Children's Home, Rescue Home, Woman's Home, St. Joseph Orphanage, St. Matthew's Home for Children, Dr. H. K. Leake's Private Infirmary, Out Door Clinic of the Settlement Home and Presbyterian Home for Children. The Dean is Dr. John O. McReynolds. Total registration 1904-5 was 65; graduates, 14. The third session opens Oct. 2, 1905, and closes May 3, 1906.

College of Physicians and Surgeons.—This school was founded in 1904, and in 1905 the name was changed to College of Physicians and Surgeons. It has a total teaching staff of 15. The course of instruction extends over four years of six months each. The requirements for admission are the same as those prescribed by the Association of Southern Medical Colleges. Clinical instruction is given in the City Hospital, St. Paul Sanitarium and the college dispensary. The fees for the first three years are $80, and $105 for the fourth year. The Dean is Dr. A. C. Bell. Total registration for 1904-5 was 108; graduates, 17. The next session begins Oct. 3, 1905, and closes April 3, 1906.

Physio-Medical College of Texas.—This college was organized in 1902. It has a faculty of 24 professors and 4 assistants, total 28. The course is four years of thirty weeks each. The fees are, first year, $70; fourth year, $85; other years, $65. Enrolment 1904-5 was 42; graduates, 5. The Secretary is Dr. R. L. Spann. The next session opens Oct. 15, 1905, and closes May 15, 1906.

Texarkana.

Gate City Medical College.—The length of each course is seven months. The faculty numbers 20 professors and assistants. Registration 1904-5 was 109; graduates, 26. The Dean is Dr. J. W. Decker. The next session begins Oct. 26, 1905, and ends May 4, 1906.

VERMONT.

Vermont, population 343,641, has one medical school, located at Burlington, a town of about 20,000 people. Board and room costs from $3.50 to $5 a week.

Burlington.

University of Vermont College of Medicine.—This school was organized in 1822, but suspended from 1836 until 1854, when it was reorganized. The faculty consists of 20 professors and 21 assistants, instructors, etc., in all 41. The Mary Fletcher Hospital and a free dispensary furnish material for clinical instruction. Applicants for admission must be graduates of a four-year high school course or take an examination to show equivalent educational qualifications. The laboratory and lecture-room space and equipment are good. A new and commodious college building is nearly completed. The course of study embraces graded work for four years of seven months each. The total fees for each of the first three years are $115 and $140 for the fourth year. The Dean is Dr. H. C. Tinkham; Secretary, H. L. White, A.M. Total registration of students for 1904-5 was 185; graduates, 48. The fifty-third session begins Dec. 2. 1905, and ends June 27, 1906.

VIRGINIA.

Virginia, population 1,854,184, has three medical colleges, situated in Charlottesville (population 6,449) and Richmond (population 85,050). The clinical facilities in Richmond are good. Board and room can be obtained for $18 a month, and upward, in Charlottesville, and from $12 to $20 a month in Richmond.

Charlottesville.

University of Virginia Department of Medicine.—This school was organized in 1827, and has a faculty of 24. A free dispensary and the new four-story hospital furnish clinical facilities. The requirements for admission are those of the Association of American Medical Colleges. The course is four years of nine months each. Fees: First year, $110; second, $100; third, $80, and $60 for the fourth year. Total enrolment for 1904-5 was 145; graduates, 38. The eighty-first session opens Sept. 14, 1905, and closes June 13, 1906.

Richmond.

Medical College of Virginia.—This school was organized in 1838 as the Medical Department of Hampden Sidney College, Virginia. In 1854 it was granted a charter by the Legislature of Virginia as an independent institution under its present name. In 1860 the college and its appurtenances was deeded to the State of Virginia in consideration of an appropriation on the part of the state of a sufficient sum to build a hospital, since which time it has continued as a state institution. During the war between the states it was the only medical college in the Confederacy which did not close its doors. It held two sessions a year during this period, and a large proportion of the surgeons of the Confederate Army were graduates of this school. Clinical material was formerly furnished by the Old Dominion Hospital, but more recently by the Memorial Hospital, opened in July, 1903, and the City Free Dispensary, both of which are under the exclusive control of this college. An outside obstetric service, the State Penitentiary Hospital, the City Almshouse Hospital and other public charities and asylums of the city afford ample opportunity for additional clinical work. This school is a member of the Southern Medical College Association. The buildings are large and numerous and contain well-equipped laboratories and amphitheaters. The course embraces four years of nearly eight months each. The fees are $85 for each year, with an additional graduation fee of $30. The Dean is Dr. Christopher Tompkins. Total registration for 1904 5 was 209; graduates, 38. The next session begins Sept. 24. 1905, and will end May 16, 1906.

University College of Medicine.—This school was organized in 1893, and has a faculty of 19 professors, 41 lecturers, assistants, etc., a total of 60. Good clinical facilities are furnished by Virginia Hospital, with a maternity department and annex, which was built especially for the purpose of affording bedside instruction, and is owned and operated by the college: Richmond Eye, Ear and Throat Infirmary, containing 34 beds: the City Hospital, City Jail, State Penitentiary, and a college dispensary. Matriculation is in accord with the rules of the Association of American Medical Colleges, and of the Southern Medical College Association, to both of which this college belongs. The laboratory and lecture-room space and equipment are ample, and some of the instructors devote their entire time to the laboratories. The school lays especial importance on the careful instruction and guidance of each student. The curriculum covers four years of thirty-four weeks each. The total fees are $85 for each year. The President is Dr. Stuart McGuire: the Dean is Dr. Landon B. Edwards, Richmond. Total enrolment for 1904-5 was 223: graduates, 48. The next session begins Sept. 26, 1905, and ends May 24, 1906.

WEST VIRGINIA.

West Virginia, population 958,800, has one medical college, College of Medicine of the West Virginia University, located at Morgantown, a city of 10,000 inhabitants.

Morgantown.

West Virginia University College of Medicine.—This school was organized in 1903, and gives only the first two years of the medical course. Each college term extends over nine months. The degree of M.D. is granted students after they finish the third and fourth years in Baltimore at the College of Physicians and Surgeons. The faculty consists of 5 professors and 4 assistants, 9 in all. The school is a member of the Association of American Medical Colleges. Dr. J. N. Simpson is the Dean and A. J. Collett the Secretary. Total registration in 1904-5 was 36. Next session begins Sept. 21, 1905, and closes June 15, 1906.

WISCONSIN.

Wisconsin, poplation 2,069,042, has two medical colleges, the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons. They are both situated in Milwaukee, a city of 300,000 people. Clinical facilities are furnished them in common by the County Hospital, with 300 beds, and the Milwaukee Hospital for the Insane. Board and lodging can be had for from $3 to $5 a week.

Milwaukee.

Milwaukee Medical College.—This school was organized in 1893, and has a faculty of 36 professors and 27 lecturers, instructors, etc., a total of 63. Good clinical material is furnished by Trinity and the County hospitals, Milwaukee Hospital for the Insane, and a college dispensary. This school is a member of the Association of American Medical Colleges. Ample laboratory and amphitheater facilities are afforded. The course covers four years of eight months each. The total fees are $125 each for the first three years and $135 for the fourth year. The President is Dr. William H. Earles. Total number of students for 1904-5 was 174; graduates, 38. The twelfth session begins Oct. 2, 1905, and will close about June 4, 1906.

Wisconsin College of Physicians and Surgeons.—This college was organized in 1893, and has a faculty composed of 21 professors and 25 associates, assistants, etc., a total of 46. St. Joseph's Hospital, containing 150 beds; the college dispensary, the Milwaukee County Hospital and the Hospital for the Insane supply facilities for clinical study. The school is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are well equipped. The curriculum includes four years of eight months each. Fees: Matriculation, paid once, $5; general ticket, $100; for the use of the microscope, a fee of $2 is charged for each course. The Secretary is Dr. W. H. Washburn. Total enrolment for 1904-5 was 74; graduates, 19. The next session begins Sept. 19, 1905, and ends May 16, 1906.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

The requirements for admission and graduation to be maintained by colleges holding membership in this association and the minimum course of study prescribed, are as follows:

ARTICLE III.

Section 1.—Every college holding membership in this Association shall demand of each student, under the condition hereinafter stated, as a minimum requirement for admission to the medical course:

(*a*) A bachelor's degree from an approved college or university.

(*b*) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight-year course in primary and intermediate grades, and for graduation not less than four years of study embracing not less than two years (4 points) of foreign language, of which one must be Latin, two years (4 points) of mathematics, two years (4 points) of English, one year (2 points) of history, two years (4 points) of laboratory science, and six years (12 points) of further credit in language, literature, history or science.

(*c*) An examination in the following branches:

A. Required (18 points): Mathematics (4 points); English (4 points); History (2 points); Language (2 must be Latin), 4 points; Science (taken from physics, chemistry, botany, zoology), 4 points.

B. Optional (to 12 points): English, 2 points, History, 6 points; Language, 6 points: Manual Training, 2 points; Mechanical Drawing, 1 point; Natural Science (botany, biology, zoology), 2 points: Physical Science (chemistry, physics), 2 points; Trigonometery, 1 point; Astronomy (1), Civics (1), Geology (1), Physical Geography (1), Physiology and Hygiene (1), Political Economy (1).

(One point in any subject in a high school or academic course demands not less than five periods per week of forty-five minutes each for eighteen weeks).

(*d*) Certificates from reputable instructors recognized by the superintendent hereinafter to be mentioned or by any state board of medical examiners duly authorized by law, may be accepted in lieu of any part of this examination.

Sec 2.—This examination must be conducted by or under the authority of the superintendent of public instruction of the city or state in which the college is located. In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission.

Sec. 3.—A student may be allowed to enter on his medical work conditioned in not more than six points, and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

Sec. 4.—Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association, excepting for the fourth year of their course, but no member of this Association shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw, and receiving from the dean of such college a direct written communication certifying to the applicant's professional and moral qualifications, and to the exact work he has done in said college.

Sec. 5.—Candidates for the degree of Doctor of Medicine shall have attended four courses of study in four calendar years, each annual course to have been of not less than thirty teaching weeks' duration, and at least ten months shall intervene between the beginning of any course and the beginning of the preceding course.

Sec. 6.—Credit may be given to the holder of a Bachelor's Degree from an approved college or university for any work in the medical branches which he has successfully completed in his college course, only so far as it is the full equivalent of corresponding work in the medical curriculum. The holder of such Bachelor's Degree may also be given time credits of not exceeding one year, provided that such student has had at least 40 hours in physics, 144 hours in chemistry, 24 hours in osteology, 292 hours in human or comparative anatomy, 124 hours in histology, 85 hours in embryology, 145 hours in physiology and 46 hours in materia medica; provided that the applicant for such time credits satisfies the professors of the chairs mentioned in the medical school as to his proficiency in these first-year medical studies, and satisfies the examiner, as provided for in Section 2, Article III, that his studies for which the degree was conferred include the above requirements. Such student may be allowed to complete a course for the medical degree in not less than 31 months, provided he completes the remainder of the medical curriculum in that time.

Sec 7.—A college which gives less than a four years' course of study, but does not graduate students, and is possessed of other required qualifications, may be admitted to membership.

Sec. 8.—Each student shall be obliged to attend 80 per cent. of the exercises in every annual course of study for which he seeks credit. No student shall be given credit on examination unless he attains a grade of at least 70 per cent. or its equivalent in any other marking system. And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum.

ARTICLE V.

Section 1.—The entire course of four years shall consist of at least 4,000 hours, divided into the subjects as shown in the following table, and no college shall be recognized that falls below this standard over 20 per cent. in any one branch or over 10 per cent. in the total. Laboratory or clinic hours may be substituted for didactic hours.

CURRICULUM.

	No. of Hours of Lectures.	Hours of Laboratory.	Hours of Clinics.	Total.
Histology	30	60	..	90
Embryology	30	60	..	90
Osteology	30	..	..	30
Anatomy	190	230	..	420
Physiology	180	120	..	300
Chemistry and Toxicology	100	200	..	300
Materia Medica	40	20	..	60
Pharmacology	40	20	..	60
Therapeutics	90	..	..	90
Bacteriology	40	100	..	140
Pathology	100	140	..	240
Medical Zoology, Postmortem Work and Clinical Microscopy	30	60	..	90
Physical Diagnosis	20	..	80	100
Practice of Medicine	180	..	360	540
Surgery	180	..	360	540
Obstetrics	100	..	60	160
Gynecology	50	..	110	160
Pediatrics	40	..	60	100
Eye and Ear	30	..	30	60
Nose and Throat	30	..	30	60
Mental and Nervous Diseases	60	..	60	120
Electro-Therapeutics	20	..	40	60
Genito-Urinary Diseases	30	..	30	60
Dermatology and Syphilis	20	..	20	40
Hygiene and Public Health	30	..	..	30
Dietetics	30	..	..	30
Medical Jurisprudence	30	..	..	30
	1,750	1,010	1,240	4,000

The following colleges are members:

College of Medicine University of Southern California, Los Angeles, Cal.; University of California Medical Department, San Francisco, Cal.; Colorado School of Medicine, University of Colorado, Boulder, Colo.; Denver and Gross College of Medicine, Medical Department of the University of Denver, Denver, Colo.; Yale University Department of Medicine (Yale Medical School), New Haven, Conn.; George Washington University Department of Medicine, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C.; Howard University Medical Department, Washington, D. C.; American Medical Missionary College, Battle Creek, Mich., and Chicago, Ill.; College of Medicine of the University of Illinois (College of Physicians and Surgeons), Chicago, Ill.; Illinois Medical College, Chicago, Ill.; Northwestern University Medical School, Chicago, Ill.; Fort Wayne College of Medicine, Ft. Wayne, Ind.; Central College of Physicians and Surgeons, Indianapolis, Ind.; Medical College of Indiana, University of Indianapolis, Indianapolis, Ind.; University of Indiana School of Medicine, Bloomington, Ind.; Drake University College of Medicine, Des Moines, Iowa; College of Medicine University of Iowa, Iowa City, Iowa; Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa; Sioux City College of Medicine, Sioux City, Iowa; Kansas Medical College, Medical Department of Washburne College, Topeka, Kan.; School of Medicine University of Kansas, Lawrence, Kan.; Hospital College of Medicine, Louisville, Ky.; Kentucky School of Medicine, Louisville, Ky.; Kentucky University Medical Department, Louisville, Ky.; Flint Medical College, Medical Department New Orleans University, New Orleans, La.; Baltimore Medical College, Baltimore, Md.; College of Physicians and Surgeons, Baltimore, Md.; Johns Hopkins University Medical Department, Baltimore, Md.; University of Maryland School of Medicine, Baltimore, Md.; Woman's Medical College, Baltimore, Md.; College of Physicians and Surgeons, Boston, Mass.; Detroit College of Medicine, Detroit, Mich.; Michigan College of Medicine and Surgery, Detroit, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, Mich.; Hamline University College of Medicine, Minneapolis, Minn.; College of Medicine and Surgery of the University of Minnesota, Minneapolis, Minn.; Medical Department University of Mississippi Oxford, Miss.; University of Missouri Department of Medicine, Columbia, Mo.; Kansas City Medical College, Kansas City, Mo.; University Medical College, Kansas City, Mo.; Medical Department St. Louis University (Marion-Sims-Beaumont College of Medicine), St. Louis, Mo.; St. Louis College of Physicians and Surgeons, St. Louis, Mo.; Washington University Medical Department, St. Louis, Mo.; John A. Creighton Medical College, Medical Department of Creighton University, Omaha, Neb.; University of Nebraska College of Medicine, Lincoln and Omaha, Neb.; University of Buffalo Medical Department, Buffalo, N. Y.; Syracuse University College of Medicine, Syracuse, N. Y.; University of North Carolina Medical Department, Raleigh, and Chapel Hill, N. C.; Wake Forest College School of Medicine, Wake Forest, N. C.; Medical College of Ohio, Medical Department University of Cincinnati, Cincinnati, Ohio; Miami Medical College, Cincinnati, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio, Wesleyan University, Cleveland, Ohio; Western Reserve University Medical College, Cleveland, Ohio; Ohio Medical University, Columbus, Ohio; Starling Medical College, Columbus, Ohio; Toledo Medical College, Toledo, Ohio; University of Oregon Medical Department, Portland, Ore.; Willamette University Medical Department, Salem, Oreg.; Medico-Chirurgical College of Philadelphia, Philadelphia, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, Pa.; Western Pennsylvania Medical College, Medical Department Western University of Pennsylvania, Pittsburg, Pa.; Meharry Medical College, Medical Department Walden University, Nashville, Tenn.; University College of Medicine, Richmond, Va.; University of West Virgina Medical Department, Morgantown, W. Va.; Milwaukee Medical College, Milwaukee, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 1764 Lexington St., Chicago.

SOUTHERN MEDICAL COLLEGE ASSOCIATION.

The following requirements for admission to the freshman year are exacted by the colleges belonging to this Association:

Section 3.. He must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate that he has passed the entrance examination to a university, or a certificate from some legally constituted high school [general superintendent of state education, or superintendent of some county board of public education, attesting that he has been regularly examined and is possessed of at least the educational attainments required of first-grade teachers of public schools]. The minimum preliminary education required by the Southern Medical College Association shall be, after Jan. 1, 1906, a grammar school education and two years' successful attendance at a recognized preparatory school or a high school, or its equivalent, said equivalent to be determined by a superintendent of public instruction. A student may be given one month from date of his admission to submit his certificate of qualification. And if he fails to possess the requisite educational qualifications in one or more branches, he may matriculate and attend his first course of lectures, but must present the requisite certificate before matriculating in the second course, and all tickets or certificates issued in such cases must have the conditions printed plainly on the face of each. (After Jan. 1, 1906, that part in brackets becomes non-operative.)

The following colleges are members:

Medical Department University of Tennessee, Nashville, Tenn.; Medical Department University of Nashville, Nashville, Tenn.; Medical Department University of the South, Sewanee, Tenn.; Medical Department Vanderbilt University, Nashville, Tenn.; Medical Department Fort Worth University, Fort Worth, Texas; Medical College of Virginia, Richmond, Va.; Tennessee Medical College, Knoxville, Tenn.; Medical College of Alabama, Mobile, Ala; Birmingham Medical College, Birmingham, Ala.; University College of Medicine, Richmond, Va.; Medical Department Baylor University, Dallas, Texas; Medical Department, University of Mississippi, Oxford, Miss.; Memphis Hospital Medical College, Memphis, Tenn.; Chattanooga Medical College, Chattanooga, Tenn.

The secretary-treasurer is Dr. G. C. Savage, Nashville, Tenn.

AMERICAN INSTITUTE OF HOMEOPATHY.

The minimum requirements for entrance into the freshman class of all homeopathic medical colleges, as adopted in 1901, are, with abbreviation, as follows:

1. English Composition. Exercise on assigned theme, not less than 200 words. Exercise in reading. Exercise in correction of ungrammatical sentences.

2. Mathematics. Arithmetical exercises in (a) vulgar fractions; (b) decimals; (c) percentage; (d) proportion; (e) square and cube root; (f) weights and measures; (g) decimal system. Mensuration. (a) Definition of terms; (b) exercises under the more fundamental rules.

3. Geography (general facts about North America).

4. History. General, with particular reference to human

(Continued on page 570.)

NAME OF COLLEGE.	Estimated population of city in which college is located.	No. of students registered session 1904-1905.		Graduates 1905.		Total number of teachers.	Number of weeks in college year.	Total graduates all colleges in state, 1905.	Total students in all colleges in state, 1904-5.
		Men	Women	Men	Women				
ALABAMA								47	245
Birmingham Medical College.—R	38,000	75	...	16	...	29	24	...	....
Medical College of Alabama.—R	"	170	...	31	...	20	25	...	....
ARKANSAS								28	220
Medical Department Arkansas University.—R	60,000	217	3	26	2	35	24	...	....
CALIFORNIA								129	629
Cooper Medical College.—R	400,000	134	21	33	4	61	34	...	....
Medical Department University of California.—R	"	93	11	15	2	59	36	...	....
California Medical College.—E	"	31	9	5	3	26	26	...	....
Hahnemann Medical College of the Pacific.—H	"	26	8	2	7	44	30	...	....
College of Physicians and Surgeons, San Francisco.—R	"	124	20	28	1	41	30	...	....
Oakland College of Medicine and Surgery.—R	100,000	10	2	...	...	28	36	...	....
College of Medicine, University of Southern California.—R	102,479	105	10	22	1	48	34	...	....
College of Physicians and Surgeons, Los Angeles.—R	"	23	2	6	...	30	34	...	....
COLORADO								43	198
Denver and Gross College of Medicine.—R	175,000	108	7	29	2	81	32	...	....
Denver Homeopathic College.—H	"	20	9	5	1	33	27	...	....
Colorado School of Medicine.—R	6,150	48	6	6	...	27	36	...	....
CONNECTICUT								22	138
Yale University Medical Department.—R	115,000	138	...	22	...	48	36	...	....
DISTRICT OF COLUMBIA								115	584
George Washington University, Department of Medicine.—R.	278,718	298	...	62	...	64	34	...	....
Georgetown University School of Medicine.—R	"	133	...	32	...	53	35	...	....
Howard University, Medical Department.—R	"	137	16	20	1	33	34	...	....
GEORGIA								76	411
Atlanta College of Physicians and Surgeons.—R	89,872	250	...	48	...	43	24	...	....
Georgia College of Eclectic Medicine and Surgery.—E	"	52	1	14	...	16	24	...	....
Medical College of Georgia.—R	39,441	108	...	14	...	25	24	...	....
ILLINOIS								786	3,481
American Medical Missionary College.—R	1,900,000	58	22	14	7	26	36	...	....
Bennett College of Eclectic Medicine and Surgery.—E	"	99	4	29	1	56	28	...	....
College of Medicine and Surgery—P.M.	"	42	8	12	...	62	36	...	....
College of Physicians and Surgeons, Chicago.—R	"	602	52	201	12	144	36	...	....
Hahnemann Medical College and Hospital.—H	"	220	...	61	...	104	28	...	....
Harvey Medical College.—R	"	180	30	10	6	73	39	...	....
Hering Medical College.—H	"	36	14	10	4	61	30	...	....
Illinois Medical College.—R	"	181	11	55	4	51	27	...	....
Jenner Medical College.—R	"	96	6	12	1	38	38	...	....
Northwestern University Medical School.—R	"	593	...	143	...	157	36	...	....
Rush Medical College.—R	"	498	24	106	6	234	34	...	....
National Medical University	"	232	...	29	...	66	36	...	....
American College of Medicine and Surgery.—R	"	292	...	34	...	65	30	...	....
Dearborn Medical College, Chicago.—R	"	173	8	27	2	39	39	...	....
INDIANA								129	539
Central College of Physicians and Surgeons.—R	169,164	141	5	25	...	59	30	...	....
Medical College of Indiana.—R	"	262	7	78	...	63	34	...	....
Physio-Medical College of Indiana —Ph. M.	"	19	3	5	...	30	28	...	....
Eclectic Medical College of Indiana.—E	"	45	...	8	...	24	29	...	....
Fort Wayne College of Medicine.—R	45,115	40	3	11	2	36	30	...	....
Indiana University School of Medicine.—R	7,000	14	...	...	...	11	36	...	....
IOWA								150	680
Drake University College of Medicine.—R	91,515	56	4	10	2	46	31	...	....
Keokuk Medical College of Physicians and Surgeons.—R	14,641	219	11	49	1	17	32	...	....
Sioux City College of Medicine.—R	33,111	53	19	11	3	26	32	...	....
State University of Iowa, Homeopathic Medical Dept.—H	7,879	41	...	9	...	24	36	...	....
State University of Iowa, Medical Department.—R	"	249	28	62	3	50	36	...	....
KANSAS								26	178
College of Physicians and Surgeons of Kansas City.—R	55,000	48	7	1	2	45	28	...	....
Kansas Medical College.—R	33,608	87	4	16	7	33	38	...	....
School of Medicine, University of Kansas.—R	10,862	31	1	...	...	18	36	...	....
KENTUCKY								345	1,525
Hospital College of Medicine.—R	225,000	425	0	93	0	51	30	...	....
Kentucky School of Medicine.—R	"	190	3	48	1	47	30	...	....
Louisville Medical College.—R	"	263	...	40	...	26	30	...	....
Louisville National Medical College.—R	"	34	3	5	1	25	30	...	....
Southwestern Homeopathic Medical College.—H	"	16	3	6	...	27	26	...	....
Medical Department, University of Louisville.—R	"	241	7	71	4	38	30	...	....
Kentucky University, Medical Department.—R	"	340	...	76	...	42	30	...	....
LOUISIANA								90	524
Flint Medical College of New Orleans University.—R	287,104	53	2	7	...	11	24	...	....
Tulane University, Medical Department.—R	"	469	...	83	...	49	30	...	....
MAINE								18	93
Medical School of Maine, Bowdoin College.—R	50,000	93	...	18	...	33	33	...	....
MARYLAND								420	1,681
Baltimore Medical College.—R	508,951	406	...	96	...	59	33	...	....
Baltimore University School of Medicine.—R	"	70	...	14	...	25	30	...	....
College of Physicians and Surgeons of Baltimore.—R	"	298	...	70	...	53	32	...	....
Medical Department Johns Hopkins University.—R	"	269	22	48	5	82	36	...	....
Southern Homeopathic Medical College.—H	"	28	5	7	2	24	30	...	....
University of Maryland, School of Medicine.—R	"	340	...	83	...	60	32	...	....
Woman's Medical College of Baltimore.—R	"	0	36	0	2	33	32	...	....
Maryland Medical College.—R	"	207	...	93	...	44	28	...	....
MASSACHUSETTS								171	943
Boston University School of Medicine.—H	603,163	63	20	12	2	59	33	...	....
College of Physicians and Surgeons.—R	"	149	19	27	1	39	34	...	....
Harvard University Medical School.—R	"	307	0	67	0	145	36	...	....
Tufts College Medical School.—R	"	331	54	62	...	88	32	...	....
MICHIGAN								170	822
Detroit College of Medicine.—R	300,000	208	...	54	...	92	30	...	....
Detroit Homeopathic Medical College.—H	"	36	8	10	2	37	32	...	....
Michigan College of Medicine and Surgery.—R	"	74	4	25	1	57	32	...	....
Grand Rapids Medical College.—R	87,565	48	2	5	...	33	29	...	....
University of Michigan, Dept. of Medicine and Surgery.—R	14,509	348	28	58	3	56	34	...	....
University of Michigan, Homeopathic Medical College.—H	"	53	13	7	5	49	31	...	....
MINNESOTA								85	367
College of Homeopathic Med. and Surg., Univ of Minn.—H	225,000	15	1	4	...	33	34	...	....
College of Medicine and Surgery, Univ. of Minnesota.—R	"	219	9	71	...	104	34	...	....
Medical Department of Hamline University.—R	"	118	5	9	1	45	34	...	....
MISSISSIPPI								.....	18
Medical Department University of Mississippi, Oxford.—R	2,000	17	1	...	...	14	34	...	....

Name of College.	Estimated population of city in which college is located.	No. of students registered session of 1904-5.		Graduates. 1905.		Total number of teachers.	Number of weeks in college year.	Total graduates all colleges in state, 1905.	Total students in all colleges in state, 1904-5.
		Men	Women	Men	Women				
MISSOURI								508	2,182
Medico-Chirurgical College.—R.	163,752	38	...	16	...	54	30	...	....
University Medical College of Kansas City.—R.	"	220	...	58	...	77	31	...	....
Kansas City Hahnemann Medical College.—H.	"	23	9	4	6	43	28	...	....
Kansas City Medical College.—R.	"	116	...	34	...	51	28	...	....
Eclectic Medical University.—E.	"	55	1	16	1	25	30	...	....
Central Medical College.—R.	105,000	65	5	14	3	28	28	...	....
Ensworth Medical College.—R.	"	90	...	22	...	32	29	...	....
Barnes Medical College.—R.	575,238	391	36	98	11	60	32	...	....
Medical Department St. Louis University (Marion-Sims Beaumont College of Medicine).—R.	"	385	...	103	...	105	33	...	....
St. Louis College of Physicians and Surgeons.—R.	"	275	...	29	...	39	28	...	....
American Medical College.—E.	"	62	4	16	0	17	26	...	....
Homeopathic Medical College of Missouri.—H.	"	40	5	5	2	38	28	...	....
Medical Department Washington University.—R.	"	254	...	62	...	114	32	...	....
University of State of Missouri.—R.	5,651	101	7	7	1	30	34	...	....
NEBRASKA								76	340
University of Nebraska College of Medicine.—R.	102,555	87	5	27	1	60	30	...	....
John A. Creighton Medical College.—R.	"	164	3	31	2	49	33	...	....
Lincoln Medical College of Cotner University.—E.	40,169	75	6	14	1	36	29	...	....
NEW HAMPSHIRE								12	60
Dartmouth Medical College.—R.	1,884	60	...	12	...	20	32	...	....
NEW YORK								542	2,565
Albany Medical College.—R.	100,000	172	...	52	...	72	30	...	....
College of Physicians and Surgeons.—R.	3,437,202	568	...	185	...	128	34	...	....
Cornell University Medical College.—R.	"	360	32	66	8	211	34	...	....
Eclectic Medical College.—E.	"	85	14	13	...	34	28	...	....
Long Island College Hospital.—R.	"	414	...	73	...	95	32	...	....
New York Homeopathic Medical College and Hospital.—H.	"	110	...	21	...	78	26	...	....
New York Medical College and Hospital for Women.—H.	"	...	34	...	9	43	29	...	....
University and Bellevue Hospital Medical College.—R.	"	391	...	47	...	103	33	...	....
*Medical Department Fordham College New York.—R.	"								
Syracuse University College of Medicine.—R.	108,374	147	7	31	...	54	36	...	....
University of Buffalo, Medical Department.—R.	352,387	218	13	37	...	82	33	...	....
NORTH CAROLINA								56	335
Leonard Medical School.—R.	13,643	136	...	21	...	10	27	...	....
Wake Forest School of Medicine.—R.	823	18	...	...	...	10	34	...	....
North Carolina Medical College.—R.	904	81	...	26	...	21	30	...	....
Medical Department University of North Carolina.—R.	13,643	100	...	9	...	31	35	...	....
OHIO								230	878
Western Reserve University Medical College.—R.	381,768	73	...	19	...	54	34	...	....
Cleveland College of Physicians and Surgeons.—R.	"	75	9	16	...	59	32	...	....
Cleveland Homeopathic Medical College.—H.	"	61	5	23	1	63	31	...	....
Eclectic Medical Institute.—E.	325,902	131	4	35	2	221	28	...	....
Medical College of Ohio.—R.	"	120	1	33	...	76	33	...	....
Pulte Medical College.—H.	"	13	5	5	...	38	31	...	....
Miami Medical College.—R.	"	82	3	21	1	58	32	...	....
Ohio Medical University.—R.	125,560	152	6	37	0	35	32	...	....
Starling Medical College.—R.	"	105	...	30	...	36	32	...	....
Toledo Medical College.—R.	131,822	32	1	7	0	36	30	...	....
OKLAHOMA									15
University of Oklahoma, Norman.—R.	3,682	8	...	...	...	8	34	...	....
Epworth University College of Medicine, Oklahoma City.—R.	35,000	6	1	...	...	27	27	...	....
OREGON								33	152
University of Oregon, Medical Department.—R.	125,000	90	12	24	2	28	28	...	....
Medical Department Willamette University.—R.	10,000	50	...	7	...	19	24	...	....
PENNSYLVANIA								522	2,366
Temple College of Philadelphia, Department of Medicine.—R.	1,293,697	87	...	2	...	40	38	...	....
University of Pennsylvania, Department of Medicine.—R.	"	546	...	116	...	137	36	...	....
Hahnemann Medical College and Hospital.—H.	"	164	...	44	...	73	32	...	....
Jefferson Medical College.—R.	"	676	...	179	...	111	34	...	....
Woman's Medical College of Pennsylvania.—R.	"	...	151	...	42	48	32	...	....
Medico-Chirurgical College of Philadelphia.—R.	"	461	...	86	...	80	34	...	....
Western Pennsylvania Medical College.—R.	321,616	274	7	52	1	94	34	...	....
PHILIPPINE ISLANDS								14	68
San Tomaso University, Manila.—R.	150,000	68	...	14	...	81	36	...	....
SOUTH CAROLINA								28	87
Medical College of State of South Carolina.—R.	55,807	85	2	28	...	20	27	...	....
TENNESSEE								364	2,015
Tennessee Medical College.—R.	32,637	92	...	13	...	29	26	...	....
Knoxville Medical College.—R.	"	36	11	4	2	12	26	...	....
Medical Department of University of Nashville.—R.	80,865	317	...	75	...	23	24	...	....
Vanderbilt University, Medical Department.—R.	"	158	...	35	...	35	28	...	....
University of Tennessee Medical Department.—R.	"	164	...	44	...	73	32	...	....
Meharry Medical College.—R.	"	328	...	57	2	22	28	...	....
Memphis Hospital Medical College.—R.	102,320	476	...	51	...	28	28	...	....
University of the South Medical Department.—R.	1,200	132	...	36	...	23	25	...	....
Chattanooga Medical College.—R.	30,154	264	4	38	1	30	28	...	....
University of West Tennessee Medical Department.—R.	15,000	33	...	6	...	12	24	...	....
TEXAS								139	762
Medical Department Fort Worth University.—R.	35,000	190	1	21	...	32	26	...	....
University of Texas, Department of Medicine.—R.	37,789	163	5	23	...	27	34	...	....
Baylor University College of Medicine.—R.	55,000	129	3	34	2	35	25	...	....
Physio-Medical College of Texas.—Ph.M.	"	36	6	5	...	28	28	...	....
Southwestern University Medical College, Dallas.—R.	55,000	46	2	14	...	37	30	...	....
College of Physicians and Surgeons, Dallas.—R.	"	67	5	13	1	20	24	...	....
Gate City Medical College, Texarkana.—R.	5,000	109	...	26	...	20	30	...	....
VERMONT								48	185
University of Vermont College of Medicine.—R.	20,000	185	...	48	...	41	26	...	....
VIRGINIA								127	577
Medical College of Virginia.—R.	85,050	209	...	38	...	43	30	...	....
University College of Medicine.—R.	"	223	...	48	...	60	32	...	....
University of Virginia Department of Medicine.—R.	6,449	145	...	41	...	21	34	...	....
WEST VIRGINIA									36
University of West Virginia, Morgantown.—R.	2,100	36	...	...	...	9	36	...	....
WISCONSIN								57	248
Milwaukee Medical College.—R.	300,000	169	5	38	...	63	30	...	....
Wisconsin College of Physicians and Surgeons.—R.	"	72	2	19	...	46	30	...	....

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* First session begins October, 1905.

NAME OF COLLEGE.	Alabama, 548.	Arizona, 9.	Arkansas, 465.	California, 435.	Colorado. 146.	Connecticut, 270	Delaware, 48.	Dist. Colum., 140	Florida, 123.	Georgia, 474.	Idaho, 37.	Illinois, 2,084.	Indian Ter., 219.	Indiana, 881.	Iowa, 916.	Kansas, 493.	Kentucky, 570.	Louisiana, 475.	Maine, 292.	Maryland, 476.	Mass., 1,019.
Birmingham Medical College.—R	69								3	1											
Medical College of Alabama.—R	152								2												
Medical Department Arkansas University.—R.		1	188							1			21	1				1			
Cooper Medical College.—R	1			89							1	2		2	5	2			4		1
Med. Dept. Univ. of California —R				97							1									1	
California Medical College.—E				40																	
Hahnemann Medical Coll. of the Pacific.—H				7								3		2	2	2					1
College of Phys. and Surg., San Francisco.—R.				45		1						7		3	6	4	1	1	1		2
Oakland Coll. of Med. and Surgery.—R				12																	
Coll. of Med. Univ. of So. California.—R				46								5			4			2			
College of Phys. and Surg., Los Angeles.—R		1		4								1		1	1						
Denver and Gross Coll. of Medicine.—R				1	52	2						12		3	1	3				1	2
Denver Homeopathic College.—H				1	15						1	2			1	2					
Colorado School of Medicine				1	34							2		1	0	2			3	1	
Yale University Department of Medicine.—R						90						2			3				2		13
George Washington Univ. Dept. of Med.—R	1		2	3	1	2		49	2	5	1	13		6	3	2	5	4	4	23	6
Georgetown Univ. School of Medicine.—R	1			1		5	2	29				1		1		1	1	1		7	20
Howard University Medical Department.—R	3		1					34	4	10		2		2		3	1	3		5	1
Atlanta College of Phys. and Surg.—R	22								12	181			1				2	1			
Georgia Coll. of Eclectic Med. and Surg.—E.	4		3						3	38			1								
Medical College of Georgia.—R				1	1				4	88											
American Medical Missionary College.—R				4										1	11	1			1		1
Bennett Coll. of Eclectic Med. and Surg.—E.			1			1					1	48		8	4	1	1				
Illinois Medical College.—R	1		3							1	1	72	1	39	6	1	3	2	1		1
College of Medicine and Surgery.—Ph.M				1								27		1	5		1				
College of Physicians and Surgeons.—R			2	4	1	1		1		1	1	369	1	34	43	10	3	2	1		1
Hahnemann Med. Coll. and Hospital.—H.*																					
Harvey Medical College.—R												210									
Hering Medical College—H				2							1	24		5	3	1					
Jenner Medical College.—R												102									
Northwestern University Med. School.—R			1	3	2						5	260		23	70	9	2	4			
Rush Medical College.—R	4	4		9	1	1		1		2	3	170		51	68	20	3		1	2	3
National Medical University*																					
American Coll. of Med. and Surgery.—R.*																					
Dearborn Medical College.—R												181									
Central College of Physicians and Surgs.—R.												9		118	2						
Medical College of Indiana.—R				1			1					7		244							
Physio-Medical College of Indiana.—Ph.M												1		15							
Eclectic Medical College of Indiana.—E												6		22		3	4				
Fort Wayne College of Medicine.—R														35							
Indiana University School of Medicine.—R														14							
Drake University Coll. of Medicine.—R												1			51	1					
Keokuk Med. Coll. of Phys. and Surgs.—R				1	1						1	55			111	8					
Sioux City Coll. of Med.—R												8		1	45						
State Univ. of Iowa, Homeo. Med. Dept.—H															38						
State Univ. of Iowa, Med. Department.—R												9			252	1					1
Coll. of Phys. and Surgs. of Kansas City.—R					1								2			30					
Kansas Medical College.—R		1		1	2									1		76					
School of Medicine, Univ. of Kansas.—R																32					
Hospital College of Medicine.—R.*																					
Kentucky School of Medicine.—R.*																					
Louisville Medical College.—R	10		5		1				3	5		2	8	22	2	9	54	11			
Louisville National Medical College.—R	2									2			1	6			24				
Southwestern Homeopathic Med. College.—H.														7			11				
Medical Dept. Univ. of Louisville.—R	2		4			1						6	3	21	2		132	2		3	
Kentucky University Medical Dept.—R	7		2	1					2	5		3	1	49	3	2	158	3	1		
Flint Med. Coll. of New Orleans Univ.—R												1						26			
Tulane University. Medical Department.—R	40		13						8	9		1	4					214			
Medical School of Maine. Bowdoin Coll.—R																			85		6
Baltimore Medical College.—R	3			1		22	1	2	2	3		2		2		1	1		16	50	57
Baltimore Univ. School of Medicine.—R.*																					
College of Phys. and Surgs. of Baltimore.—R.	3					15	2			4				3		1			1	42	26
Johns Hopkins Medical School.—R	7		3	12	2	16	1	4	3	7		2		6	11		5		10	56	6
Southern Homeopathic Medical College.—H							2	1									1			15	1
Woman's Medical College of Baltimore.—R						2		1						1					1	15	
University of Maryland, School of Med.—R			1			4	3		5	11				2		1	1	1		148	6
Maryland Medical College.—R	5					3	3		2	3			1					4	3	74	5
Boston University School of Medicine.—H				1					1										4		48
College of Physicians and Surgeons.—R						3	3			1		1							5	1	112
Harvard University Medical School.—R	1			6	1	2		1	1			5		1	1	1			11		212
Tufts College Medical School.—R						5				1									10		322
Detroit College of Medicine.—R								1			1			3			1				
Detroit Homeopathic Medical College.—H																					
Michigan College of Med. and Surgery.—R														2							
Grand Rapids Medical College.—R																	1				
Univ. of Michigan Dept. of Med. and Surg.—R.	1			2	2	1			1	3	1	20	1	24	9		3				5
Univ of Mich. Homeo. Med. College.—H												2		3		1			2		
Coll. of Hom. Med. and Surg., U. of Minn.—H.																					
College of Med. and Surg., Univ of Minn.—R.						1						1		1	5						
Medical Dept. of Hamline Univ.—R																					
Med. Dept., Univ. of Mississippi, Oxford.—R																		1			
Medico-Chirurgical College.—R	1		2			1					1	2	1		2	8		1			
Medical Department, Washington Univ.—R	2		7		3						2	69	2	1	2	4	1	1			
Univ. Med. Coll. of Kansas City.—R			1	3	2							2	4		5	79					
Kansas City Hahnemann Med. Coll.—H				1											1	8					
Kansas City Medical College.—R												3	2			58					
Eclectic Medical University.—E				1									10			12					
Central Medical College.—R					1						2	1	1		5	10					
Ensworth Medical College.—R												1			7	9					
Barnes Medical College.—R			10	1	1						4	78	19	7	10	14	11				
Marion-Sims Beaumont Coll. of Med.—R			6	1	3			1			3	120	2	6	10	19	2	4			2
St. Louis Coll. of Phys. and Surgs.—R			5		1					1		89	6	5	30	2	10				
American Medical College.—E			8	1	1						1	4						1			
Homeo. Med. College of Missouri.—H		1	2									8		2	3						
Dept. of Med. of the Univ. of Missouri			3		1							2		3	7	2	2			1	
Univ. of Nebraska College of Medicine.—R															11						
John A. Creighton Med. College.—R				1							1		1	1	34	6					
Lincoln Med. Coll. of Cotner University.—E			2	2	1							3			2	6					
Dartmouth Medical College.—R						2													3		24
Albany Medical College.—R																					6

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* Information not obtainable.

Michigan, 646.	Minnesota, 427.	Mississippi, 557.	Missouri, 1,138.	Montana, 30.	Nebraska. 361.	N. Hamp., 118.	New Jersey, 487.	New Mexico, 19.	New York, 2,423.	Nevada, 13.	N. Carolina, 445.	N. Dakota, 70.	Ohio, 1,065.	Oklahoma, 117.	Oregon, 158.	Penna., 2,022.	R. Island, 108.	S. Carolina, 232.	S. Dakota, 93.	Tennessee, 683.	Texas, 1,012.	Utah, 68.	Vermont, 137.	Virginia, 596.	Washington, 102.	W. Virginia, 366.	Wisconsin, 530.	Wyoming, 13.	Canada, 183.	Foreign, 398.	P. Islands, 68.	Total, 26,147.
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...	...	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	..	..	..	..	170
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1	3	...	...	1	...	...	...	...	3	7	...	...	2	...	4	3	1	...	1	...	3	2	...	...	2	...	...	..	4	11	..	155
...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	..	1	1	..	104
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1	...	...	2	1	2	...	...	...	5	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	2	...	...	..	..	1	..	34
5	...	...	5	1	2	...	1	...	2	2	...	...	4	...	2	1	1	...	...	...	1	6	...	...	2	...	2	..	6	30	..	144
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	12
...	...	...	5	...	2	...	...	...	17	...	...	...	6	...	...	3	...	...	...	...	...	...	...	...	2	...	2	..	13	8	..	115
...	...	...	4	...	...	...	...	2	...	...	...	1	1	...	...	1	...	...	1	...	1	2	...	...	...	...	...	..	1	3	..	25
...	...	...	3	...	3	...	1	2	5	...	1	...	3	...	...	5	...	...	1	...	...	1	...	...	2	...	2	2	2	5	..	115
...	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	2	...	...	...	...	1	...	...	...	...	...	1	..	..	..	..	29
1	1	...	...	...	1	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	2	...	...	1	...	...	1	..	..	..	..	54
1	...	...	...	...	1	...	2	...	9	...	...	...	2	...	2	1	2	1	...	...	...	...	1	...	...	...	1	..	3	2	..	138
2	3	6	7	1	4	2	7	...	24	...	14	2	7	2	1	23	...	5	1	2	9	3	2	28	1	4	5	..	..	1	..	298
3	1	1	...	...	...	1	...	...	20	...	1	1	1	...	...	12	6	2	...	...	...	...	...	8	1	3	...	..	..	2	..	133
...	...	...	3	...	...	...	3	...	2	...	3	...	3	...	1	9	2	12	...	4	2	...	...	16	...	4	...	..	1	19	..	153
1	...	5	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	9	...	2	7	...	...	...	...	...	...	..	1	3	..	250
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9	3	...	...	1	3	...	...	...	4	...	2	...	9	...	...	3	...	...	...	...	1	1	1	...	2	1	6	..	2	13	..	80
6	5	...	3	...	6	...	...	...	...	...	...	...	5	...	2	1	...	...	...	...	1	...	...	...	...	...	6	1	..	2	..	103
2	1	6	2	...	3	...	...	1	5	...	...	3	8	1	...	3	...	...	...	1	5	2	...	1	1	4	6	..	1	4	..	192
1	3	...	...	...	2	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	1	...	...	...	...	3	..	..	2	..	50
21	16	1	11	5	8	...	...	...	5	...	1	3	15	1	...	3	...	2	9	...	3	2	...	1	2	1	61	..	4	4	..	654
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	220
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3	3	...	1	...	1	...	...	...	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	2	..	50
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19	16	...	5	1	17	...	...	...	2	...	2	9	8	3	8	2	...	...	16	1	5	6	...	...	7	2	74	..	7	4	..	593
16	10	2	5	2	15	...	...	1	2	...	2	8	18	3	3	3	...	...	5	3	4	2	1	...	4	...	63	..	4	3	..	522
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2	...	...	...	1	1	...	...	...	1	...	...	...	8	...	...	...	...	...	...	2	...	...	...	...	...	...	1	..	..	..	..	269
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3	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	1	...	...	...	1	...	...	...	...	...	...	...	..	..	..	..	45
2	2	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	43
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1	2	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	1	..	..	60
1	7	...	22	...	1	...	1	...	...	...	1	1	1	1	...	2	...	...	5	...	...	...	...	...	...	1	7	..	1	1	..	230
...	1	...	...	...	12	...	...	...	...	...	...	...	2	...	...	1	...	...	6	...	...	...	...	...	...	...	1	..	..	..	..	72
1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	..	..	..	..	41
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1	...	...	9	...	...	...	...	...	...	...	2	...	3	5	...	...	...	...	...	...	...	...	...	...	...	...	...	..	2	..	..	55
...	...	...	1	...	1	...	...	...	...	...	...	1	1	2	...	2	...	...	...	...	1	...	...	...	1	...	...	..	..	..	..	91
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	32
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1	...	26	3	...	...	...	...	1	4	...	3	...	7	6	...	6	...	2	...	6	32	...	...	4	2	23	2	..	1	2	..	263
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	..	..	..	..	37
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	19
1	...	4	9	...	...	...	1	1	1	...	...	...	8	...	...	...	...	1	...	10	15	...	1	2	1	14	2	..	..	1	..	248
...	...	13	11	...	1	...	1	...	4	...	1	...	7	...	...	5	...	3	1	11	8	...	...	4	1	32	...	..	..	..	..	340
...	...	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	..	..	2	..	55
...	1	82	1	...	...	...	...	...	...	...	4	...	...	3	...	...	...	...	4	1	79	...	...	...	...	...	...	..	..	5	..	469
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	..	1	..	..	93
3	...	...	...	...	2	13	36	...	33	...	7	1	8	...	...	72	8	1	...	...	1	1	6	9	...	26	...	..	5	11	..	406
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	70
...	...	2	...	...	...	...	19	...	13	...	12	...	14	...	...	51	12	...	...	1	...	12	...	11	...	32	...	..	10	12	..	298
2	2	2	4	...	2	4	8	...	26	...	6	3	8	...	4	26	3	1	1	1	5	2	...	13	...	3	14	..	..	..	..	291
...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	9	...	...	...	...	...	...	...	1	...	1	...	..	..	1	..	33
...	...	...	...	...	...	...	2	...	1	...	2	...	...	...	...	4	...	1	...	...	...	...	...	1	...	3	1	..	..	1	..	36
...	...	...	...	...	...	2	6	1	19	...	35	...	2	...	...	13	3	21	1	1	1	...	2	20	...	12	...	..	4	14	..	340
...	...	3	...	...	...	2	6	...	10	...	3	...	3	...	...	10	1	4	...	1	9	...	...	8	...	30	...	..	2	12	..	207
1	...	...	...	...	...	5	...	...	3	...	...	...	1	...	...	4	7	...	...	...	...	...	2	1	...	...	...	..	2	3	..	83
...	...	...	...	...	...	6	1	...	8	...	1	...	1	...	...	5	6	...	...	...	...	...	3	1	...	...	...	..	4	6	..	168
1	3	...	1	...	1	1	4	...	8	...	...	1	6	...	...	4	17	...	...	1	1	...	7	...	1	1	2	..	4	..	..	307
1	...	...	...	...	...	23	1	...	3	...	...	...	...	...	...	...	9	...	...	1	...	...	4	...	...	...	...	1	1	3	..	385
150	...	...	...	...	...	1	1	...	3	...	...	3	4	...	...	1	...	...	...	...	...	...	2	...	...	...	2	..	33	2	..	208
28	...	...	...	...	...	...	...	...	6	...	...	...	3	...	...	4	...	...	...	...	...	...	...	...	...	...	...	..	2	1	..	44
55	...	...	1	...	...	...	...	...	8	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	..	10	..	..	78
46	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	50
187	4	...	2	3	1	...	2	...	28	1	...	3	29	1	...	16	...	...	3	1	1	1	1	1	3	1	4	1	..	9	..	376
31	...	...	1	1	...	...	...	...	10	...	...	...	8	1	...	6	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	66
...	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	16
...	195	...	...	...	1	...	...	1	...	...	...	13	...	...	...	...	...	...	5	...	...	1	...	...	...	...	4	..	..	..	..	228
...	102	...	...	2	...	...	...	...	...	...	...	6	1	...	...	1	...	...	1	...	...	...	...	...	1	...	8	..	1	..	..	123
...	...	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	18
...	...	...	13	1	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	..	..	..	..	38
1	...	...	126	...	1	...	...	...	...	...	...	2	2	2	...	1	...	...	...	1	5	...	...	3	4	...	1	..	1	10	..	254
...	...	...	103	...	2	...	...	...	...	...	...	...	...	10	...	1	...	...	...	2	2	...	...	1	...	1	...	1	1	..	..	220
...	...	...	17	...	1	...	...	...	1	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	..	..	32
...	1	...	40	...	1	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	5	...	...	..	..	..	..	116
...	...	...	27	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	2	...	...	...	...	...	...	..	..	..	..	56
...	...	...	32	...	9	...	...	...	1	...	...	...	...	5	...	1	...	...	...	...	...	...	...	...	1	...	...	..	1	..	..	70
...	...	...	68	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	..	..	..	..	90
2	1	4	191	2	7	...	...	1	1	...	1	2	7	2	...	...	...	...	4	1	32	...	...	2	2	6	...	..	..	..	..	427
2	2	2	134	...	4	...	...	1	...	...	...	1	2	6	2	2	...	...	1	1	7	9	...	1	7	3	8	1	1	9	..	385
2	1	2	84	1	1	...	...	1	1	...	...	...	1	4	3	3	...	...	...	...	14	...	...	...	4	...	2	..	1	1	..	275
...	...	...	44	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	3	1	...	...	...	...	1	..	..	..	..	66
...	...	...	25	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	..	1	1	..	45
1	...	...	59	...	...	1	1	1	3	...	...	...	1	...	...	4	...	...	...	...	1	...	...	...	...	...	...	..	1	14	..	108
...	1	...	...	...	76	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	..	..	..	..	92
2	1	...	2	1	102	...	...	1	1	...	...	1	...	...	...	...	...	...	9	...	...	...	...	...	...	...	...	2	1	..	..	167
...	2	...	4	...	52	...	...	...	...	...	...	...	1	...	...	...	...	...	5	...	...	...	...	...	...	...	...	..	..	1	..	81
...	...	...	...	...	...	21	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	7	1	...	...	...	..	..	..	..	60
...	...	...	...	...	...	...	...	...	161	...	...	...	...	...	...	2	...	...	...	...	...	...	2	...	...	...	...	..	..	1	..	172

Name of College.	Alabama, 548.	Arizona, 9.	Arkansas, 465.	California, 435.	Colorado, 146.	Connecticut, 270	Delaware, 48.	Dist. Colum., 140	Florida, 123.	Georgia, 474.	Idaho, 37.	Illinois, 2,084.*	Indian Ter., 219.	Indiana, 881.	Iowa, 916.	Kansas, 493.	Kentucky, 570.	Louisiana, 475.	Maine, 202.	Maryland, 476.	Mass., 1,019.
College of Physicians and Surgeons.—R	4	...	...	4	2	14	1	...	3	2	...	2	...	2	1	1	1	...	5	1	18
Cornell University Medical College.—R	2	...	1	2	...	11	...	...	...	...	...	2	...	...	...	...	1	1	2	...	6
Eclectic Medical College.—E	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Long Island College Hospital.—R	...	...	...	...	1	5	...	...	...	...	...	...	...	...	...	...	...	...	1	3	10
New York Homeo. Med. Coll. and Hosp.—H	...	...	...	1	...	10	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2
N. Y. Med. Coll. and Hosp. for Women.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Univ. and Bellevue Hosp. Medical Coll.—R	2	...	...	1	...	16	...	...	1	1	...	...	...	3	...	1	...	...	1	...	6
Syracuse Univ. Coll. of Med.—R	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	2	2
University of Buffalo, Medical Dept.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Leonard Medical School.—R	10	...	3	...	...	...	...	3	2	8	...	...	...	...	...	...	...	1	...	...	...
Wake Forest School of Medicine.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
North Carolina Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Med. Department, University of N. Car.—R	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Western Reserve University Med. Coll.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	1
Cleveland Coll. of Physicians and Surgs.—R	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	...	...	...
Cleveland Homeopathic Med. College.—H	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Eclectic Med. Institute—E	...	...	1	...	1	...	...	...	3	1	...	12	1	11	2	1	16	...	...	...	...
Medical College of Ohio.—R	...	...	...	...	...	...	...	...	...	...	...	3	...	8	...	...	16	...	...	...	...
Pulte Medical College.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...
Miami Medical College.—R	1	...	...	...	...	...	...	...	...	...	...	...	...	7	...	1	6	...	...	1	...
Ohio Medical University.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	1	...	...
Starling Medical College.—R	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Toledo Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
College of Medicine, Epworth University.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
School of Med., University of Oklahoma.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
University of Oregon, Medical Dept.—R	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Medical Department, Willamette Univ.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Temple Coll. of Phila., Dept. of Medicine.—R	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
University of Pennsylvania, Dept. of Med.—R	2	...	1	2	2	4	4	4	2	1	...	3	...	6	3	2	5	...	3	7	15
Hahnemann Med. Coll. and Hospital.—H	...	...	...	7	...	...	3	1	...	...	...	...	...	1	...	1	1	...	...	3	2
Jefferson Medical College.—R	1	...	2	3	1	11	11	1	2	3	3	5	1	9	7	...	4	...	4	2	27
Woman's Med. Coll. of Pennsylvania.—R	...	...	...	1	...	1	2	2	...	...	...	2	...	1	...	2	1	...	4	...	6
Medico-Chirurgical Coll. of Philadelphia.—R	...	...	...	1	...	3	4	...	1	...	...	1	...	...	1	...	1	1	2	2	5
Western Pennsylvania Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	4	...	7	...	...	...	...	...	...	...
San Tomaso University, Manila.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Med. Coll. of State of South Carolina.—R	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	...
Tennessee Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...
Knoxville Medical College.—R	3	...	2	1	...	...	...	1	4	3	...	1	2	1	...	...	4	1	...	1	...
Medical Dept., University of Nashville.—R	38	...	14	1	...	...	...	...	1	3	...	1	1	1	...	...	9	39	...	...	...
Vanderbilt University Med. Department.—R	15	...	5	4	...	...	...	...	...	7	...	1	1	...	...	...	13	6	...	1	...
University of Tennessee, Medical Dept.—R	10	...	6	...	...	1	...	...	1	1	...	2	1	...	...	1	9	2	...	...	...
Meharry Medical College.—R	20	...	24	...	1	...	...	...	24	20	...	3	2	1	...	8	15	9	...	1	...
Memphis Hospital Medical College.—R	23	...	70	...	...	...	...	...	1	2	...	...	19	2	...	1	1	85	...	...	...
University of the South.—R	8	...	4	...	...	...	...	...	1	15	...	2	...	1	...	...	1	13	...	...	2
Chattanooga Medical College.—R	54	...	11	2	4	2	1	...	8	16	1	1	6	...	3	1	5	2	...	...	1
Univ. of West Tennessee, Med. Dept.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Med. Dept., Ft. Worth University.—R	...	...	6	...	...	...	...	...	...	...	...	...	44	1	...	1	...	5	...	...	...
University of Texas, Dept. of Med.—R	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Baylor University College of Medicine.—R	1	...	2	...	...	...	...	...	...	1	...	...	16	...	...	...	...	2	...	...	...
Physio-Medical Coll. of Texas.—Ph.M	1	...	1	...	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...
Gate City Medical College.—R	...	...	30	...	...	...	...	...	...	1	...	1	16	1	...	...	1	14	...	...	...
Southwestern Univ. Medical College.—R	...	1	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	2	...	...	...
College of Physicians and Surgeons.—R	...	...	3	...	...	...	...	...	...	...	...	1	5	...	...	1	...	...	...	...	...
University of Vermont, Medical Dept.—R	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	7	...	19
Medical College of Virginia.—R	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	1
University College of Medicine.—R	1	...	...	1	...	...	2	...	3	...	...	...	...	...	...	...	...	...	...	1	1
Univ. of Virginia, Dept. of Med.—R	6	...	2	...	...	2	1	2	3	2	...	...	...	1	...	1	5	1	...	4	2
University of West Virginia.—R	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Milwaukee Medical College.—R	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wisconsin Coll. of Phys. and Surgs.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

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* Information not obtainable.

progress in art, science and letters. (The examination to avoid exact dates and minor details.)

5. Latin Language. (a) Grammar; (b) four books of Cæsar, or its equivalent.

The colleges recognized as in good standing by this organization are: Hahnemann Medical College of the Pacific; Denver Homeopathic Medical College; Hahnemann Medical College, Chicago; Hering Medical College; Homeopathic Medical Department of the State University of Iowa; Southwestern Homeopathic College, Louisville, Ky.; Kansas City Hahnemann Medical College; Southern Homeopathic Medical College, Baltimore, Md.; Boston University School of Medicine; Homeopathic Medical College of University of Michigan; Detroit Homeopathic College; College of Homeopathic Medicine and Surgery of University of Minnesota; Homeopathic Medical College of Missouri; New York Homeopathic Medical College; New York Medical College for Women; Cleveland Homeopathic Medical College; Pulte Medical College, Cincinnati; Hahnemann Medical College of Philadelphia.

The Secretary is Dr. Chas. Gatchell, 100 State St., Chicago.

NATIONAL CONFEDERATION OF ECLECTIC MEDICAL COLLEGES.

The following are the present minimum requirements for admission to colleges members of this Association:

1. Good English education, to be attested by (a) first grade teacher's certificate; or (b) a diploma from a graded high school, or literary or scientific college or university; or (c) regents medical students certificate; or (d) entrance examination covering a good English education including an elementary knowledge of natural history, physics and Latin.

2. Graduates from pharmaceutical, dental and veterinary colleges may be allowed one year's time on a four-year medical course, only on condition that they comply with the entrance requirements, and pass all examinations and perform all laboratory work embraced in the course of study of the Freshman year. One year's advanced standing may be given students with degrees from a recognized literary college.

3. The course of instruction shall consist of a four-year graded course or its equivalent, as herein prescribed, including four sessions of six months each in four different calendar years.

The following colleges are members of this confederation:

American Medical College, St. Louis, Mo.; Bennett College of Eclectic Medicine and Surgery, Chicago, Ill.; California Medical College, San Francisco, Cal.; Eclectic Medical College of the City of New York, New York, N. Y.; Eclectic Medical Institute, Cincinnati, Ohio; Georgia College of Eclectic Medicine and Surgery, Atlanta, Ga.; Lincoln Medical College, Lincoln, Neb.; Kansas City Eclectic Medical University, Kansas City, Mo.

The secretary-treasurer is John K. Scudder, M.D., 1009 Plum St., Cincinnati, Ohio.

Michigan, 646.	Minnesota, 427.	Mississippi, 557.	Missouri, 1,138.	Montana, 30.	Nebraska, 361.	New Hamp., 118.	New Jersey, 487.	New Mexico, 19.	New York, 2,423.	Nevada, 13.	N. Carolina, 445.	N. Dakota, 70.	Ohio, 1065.	Oklahoma, 117.	Oregon, 158.	Penna., 2,022.	Rh. Island, 108.	So. Carolina, 232.	So. Dakota, 93.	Tennessee, 683.	Texas, 1,012.	Utah, 68.	Vermont, 137.	Virginia, 596.	Washington, 102.	West Va., 366.	Wisconsin, 530.	Wyoming, 13.	Canada, 183.	Foreign, 398.	P. Islands, 68.	Total, 26,147.
1	1	2	3	...	...	3	76	...	360	1	1	...	8	...	2	9	7	3	...	2	2	...	2	1	1	...	2	...	4	16	...	568
1	...	2	2	...	1	1	36	...	297	...	...	...	5	...	2	2	4	...	...	...	...	...	1	...	1	...	...	...	3	6	...	392
...	...	...	...	...	...	...	3	...	94	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	99
...	...	...	...	...	...	...	32	...	324	...	...	...	1	...	...	3	3	...	...	1	1	...	...	1	...	...	...	...	1	27	...	414
...	...	...	...	...	...	...	18	...	72	...	...	...	1	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	110
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3	...	...	...	...	...	3	47	...	266	...	...	...	6	...	...	7	...	...	...	1	2	4	2	...	...	...	...	2	5	11	...	391
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...	2	2	1	1	2	2	44	...	16	...	16	...	22	...	5	418	6	1	2	...	4	2	2	4	2	8	...	2	4	11	...	676
2	...	3	...	...	2	2	13	...	7	...	2	...	2	...	1	70	2	2	...	1	3	...	...	1	1	...	...	...	2	13	...	151
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3	...	8	...	...	...	...	...	1	3	...	11	...	3	1	1	...	2	8	...	83	4	1	...	8	1	8	...	...	...	4	...	268
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States that Have no Medical School.—The following states and territories contain no medical college: Arizona, Delaware, Florida, Hawaii, Idaho, Indian Territory, Montana, Nevada, New Jersey, New Mexico, North Dakota, Porto Rico, Rhode Island, South Dakota, Utah, Washington, and Wyoming.

Philippine Islands.—Owing to the scarcity of physicians in the Philippine Islands, and also for the purpose of improving the present medical service, the Philippine Islands Medical Association, at its second annual meeting held in March, 1905, recommended the establishment of a modern school of medicine in Manila as a part of a general university.

Proposed Mergers.—It has been rumored that the Detroit College of Medicine will be merged with the University of Michigan with a view of teaching the last two years of the medical course at Detroit instead of at Ann Arbor.——Owing to the severity of the entrance requirements to medical colleges of Ohio, the number of matriculants fell off considerably last year. This scarcity of pupils has brought about a revival of the talk of consolidating two and possibly three of the Cincinnati medical colleges into one big institution. Nothing positive has been done in the matter.

New College and Colleges Discontinued.—During the year only one new college has been formed, a most unusual occurrence. However, some changes of interest have taken place in the medical college world. The Kansas City Medical College, the Medico-Chirurgical College of Kansas City, Mo., and the College of Physicians and Surgeons of Kansas City, Kan., have been absorbed by the University of Kansas, and hereafter this institution will teach the four years of medicine. The first two years of the course will be given at Lawrence, the last two at Kansas City, Kan., Kansas City, Mo., and Rosedale, Kan., where a new hospital has been erected by authority of the state.——In St. Joseph, Mo., the Ensworth Medical College and the Central Medical College have combined, assuming the name of Ensworth-Central Medical College.——Dallas Medical College, Dallas, Texas, has been merged with the Medical Department of Baylor University of the same city.——Bell Medical College, Dallas, Tex., has changed its name to College of Physicians and Surgeons.——The Columbian University, Washington, D. C., is now known as the George Washington University.—The new college formed during the year is the Eclectic Medical Institute of Dallas, Texas. The Epworth University, Oklahoma City, Okla., which last year gave instruction in the first year of the medical course, now proposes to teach the full four years.——The Fordham College Medical Department, which was instituted last year, will open its first session in October, 1905.——The Medical Department of the University of Porto Rico has not yet been organized.——Harvey Medical College, Chicago, has ceased to exist.——Lombard College, Galesburg, Ills., has discontinued teaching the first year of the medical course.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Bronchial Asthma.

In considering the treatment of bronchial asthma *The Practitioner*, London, calls attention to the importance of distinguishing it from the other forms of asthma, such as cardiac asthma, renal asthma, hay asthma, thymic asthma or laryngismus stridulus due to enlargement of the thymus gland.

Bronchial asthma or spasmodic asthma is the condition in which there is a marked neurotic element and is caused by a sudden contraction of the unstriped muscular fibers in the walls of the bronchioles, which are innervated by the pneumogastric nerve. The spasms usually occur at night, accompanied by wheezing through the day.

The treatment, as described by the *Practitioner*, is arranged under two heads:

1. That to be resorted to during the attack.
2. That to be adopted during the intervals to prevent their recurrence if possible.

During the attack a little chloroform should be inhaled to produce rapid relaxation of the bronchial muscles. Cigarettes of stramonium leaves may be of service. A powder consisting of pulverized belladonna, stramonium and hyoscyamus leaves with some potassium nitrate burnt and the fumes inhaled will often bring relief. An inhalation of from three to five minims (.20-.30) of the nitrite of amyl from a crushed capsule frequently relieves the paroxysm. Between the attacks the following combinations, containing potassium iodid, is recommended:

℞.	Potass. iodidi	gr. x		65
	Tinct. lobeliæ	ʒss	2	
	Vini ipecacuanhæ	m. xii		75
	Aquæ chloroformi q. s. ad	℥i	30	

M. Ft. mistura. Sig.: Two tablespoonfuls three times a day after food. Or:

℞.	Potassii iodidi	gr. xii		75
	Ext. stramonii	gr. 1-6		01
	Spts. chloroformi	m. xx	1	30
	Spts. ammon. arom	m. xx	1	30
	Aquæ q. s. ad	℥ss	15	

M. Sig.: To be taken at one dose on retiring at night.

[Hypodermic injections of morphin with cocain, or morphin grain 1-3 (0.2) and atropin grain 1/100 (.066) are also recommended, but it is not advisable to use these drugs in this condition unless in extreme and aggravated cases after all other remedies have been tried.]

Two other considerations are of importance in the treatment of bronchial asthma. 1. The place of abode must suit the patient. High, dry altitudes are preferable in some cases, in others, the seaside, country, or city may best suit the individual. 2. The diet must be carefully looked after and regulated. Heavy meals should not be taken in the evening, as dyspepsia is often the starting point of an attack. Whisky and a few minims of the spirits of chloroform often relax the bronchioles and check an oncoming attack.

Other combinations containing lobelia are recommended by some authors as follows:

℞.	Tinct. lobeliæ ether	ʒii	8
	Aquæ minth. pip	℥iv	120

M. Sig.: One tablespoonful every half hour until relieved. Or:

℞.	Tinct. lobeliæ	ʒi	4	
	Tinct. belladonnæ	ʒi	4	
	Tinct. aconiti	m. xx	1	30
	Aquæ cinnamomi q. s. ad	℥iii	90	

M. Sig.: One tablespoonful every three or four hours until relieved.

Between the attacks the following may be given:

℞.	Potass. iodidi	ʒiiss	10
	Potass. bicarb.	ʒv	20
	Tinct. bellad.	ʒiii	12
	Infus. gent. co. q. s. ad	℥iv	120

M. Sig.: One teaspoonful in water three times a day, after food.

Stramonium may be administered during or at the beginning of an attack, combined as follows:

℞.	Tinct. stramonii	ʒiv	15
	Tinct. aconiti	ʒii	8
	Potass. bromidi	℥i	30
	Aquæ chloroformi q. s. ad	℥iii	90

M. Sig.: One teaspoonful in water at the beginning of the attack. Or:

℞.	Ext. stramonii	gr. vi		40
	Pulv. opii	gr. iv		25
	Camphoræ	gr. xx	1	30
	Mft. cap.	no. xii		

Sig.: One capsule three times a day.

High Arterial Blood Pressure.

H. D. Rolleston, in an article in the *Clinical Journal* (London), enumerates in a general way the following most important causes of high arterial tension:

1. Poison taken into the body, such as lead.
2. Autointoxication.
3. Imperfect elimination by the kidneys, skin or blood.
4. Nervous influences, such as worry and strenuous living.
5. Excessive influence of the adrenal glands.

The results of this continued high arterial pressure are hypertrophy of the left ventricle, atheroma, endarteritis and granular kidney.

The symptoms arising from such conditions are numerous, including mental weakness, senility, syncopal attacks, dilated heart, angina pectoris, granular kidney, pleural effusions, diabetes, loss of weight and neurasthenic conditions.

In the treatment of this important pathologic condition the cause in each case must be considered. The general conditions of life should be made simple and healthy. Food must be taken in moderation. Without becoming vegetarian, the author recommends less proteid and relatively more carbohydrate. Mastication should be thorough. Extreme moderation in the use of alcohol or total abstinence should be insured. Exercise, but not to excess, is very important in preventing high tension. The exercise should be taken regularly and in the open air. Passive exercise, or massage to the muscles of the limbs, lowers blood pressure and is of benefit in this condition. Superficial massage raises arterial tension. Elimination by the skin must be kept up and if necessary Turkish baths may be taken to dilate the peripheral vessels and thus lower the blood pressure. The reduction of blood pressure by medicinal means is a difficult task, according to this author. The number of drugs which will do this effectively is small and at the same time a too sudden reduction of blood pressure may produce harmful results.

The author calls attention to the danger of producing an irregular pulse and cardiac failure, as in one case, by the reduction of arterial pressure from 220 to 110 mm. of mercury, by administration of the tincture of aconite in five minim (.30) doses. Of the vasodilators, nitrite of amyl has only transient action, the nitrite of soda having a more persistent effect. In this connection, he states that it is highly probable that insufficient doses of these preparations are given and disappointment in the results follow.

The official dose of sodium nitrite is from one to two grains (.06-.12), but he quotes the use of this preparation in doses ranging from one and a half (.90) to five grains (.30) often repeated.

Spiritus Glycerylis Nitratis (U. S. P., Eighth Dec. Rev.) (1 per cent.) should be given in doses ranging up to ten minims (.65). The iodids are commonly employed to bring down the arterial tension, but in ordinary doses the author does not believe they have much effect unless by possibly stimulating the thyroid gland to increased secretion, and in that way reducing arterial tension.

Loomis recommends chloral hydrate in five grain doses (.30) as of more benefit than spirits of glyceryl trinitrate. Salines and small doses of mercurials are of value in preventing intestinal fermentation, the products of which, when absorbed, tend to constrict the blood vessels and to increase the arterial tension.

In Bright's disease, accompanied by high arterial tension, the following combination is of value:

℞. Nitroglycerini	gr. 1/4	015
Tinct. strophanthi	ʒii	8
Tinct. belladonnæ	ʒi	4
Elix. simplicis q. s. ad	℥iii	90

M. Sig.: One teaspoonful from every four to six hours until the effects on the pulse are shown.

N. S. Davis, in the *Sys. of Phys. Therapeutics*, recommends, when the arteries are sclerosed, that milk should form a considerable element of the diet, vegetables, breads, cereals, fruits and eggs moderately, fish, oysters and the white meat of fowls may be used.

The red meats, such as beef and mutton are the chief sources of alimentary toxins and should be eaten daily and should be entirely excluded from the diet if headache, insomnia, nocturnal distress, sighing respiration or dyspnea suggests autointoxication. When such symptoms arise, a milk diet should be prescribed for a few days or otherwise modified by the addition of cereals, bread and a small quantity of vegetables and fruits.

The necessity of eating sparingly rather than heartily is greater in proportion as the lesions of the arteries become more pronounced.

At all times pork and 'high' game, meat stews, rich gravies, greasy soup, preserved meat, crabs, and lobsters must be avoided.

Medicolegal

Liability for Performance of Unauthorized Operation.—The Supreme Court of Minnesota says that the question raised in the case of Mohr vs. Williams as to whether the consent of a patient is necessary to the performance of an operation is new in that state. At least, no case was called to the court's attention wherein it has been discussed or decided, and very few cases were cited from other courts. Continuing, it says that it has given the matter very deliberate consideration, and is unable to concur with counsel for the defendant in their contention that the consent of the plaintiff was unnecessary in this case. It can not be doubted that ordinarily the patient must be consulted, and his consent given, before a physician may operate on him. 1, Kinkead on Torts, section 375, states the general rule on this subject as follows: "The patient must be the final arbiter as to whether he will take his chances with the operation, or take his chances of living without it. Such is the natural right of the individual, which the law recognizes as a legal one. Consent, therefore, of an individual, must be either expressly or impliedly given before a surgeon may have the right to operate." There is logic in the principle thus stated, for, in all other trades, professions or occupations, contracts are entered into by the mutual agreement of the interested parties, and are required to be performed in accordance with their letter and spirit. No reason occurs to the court why the same rule should not apply between physician and patient. If the physician advises his patient to submit to a particular operation, and the patient weighs the dangers and risks incident to its performance, and finally consents, he thereby, in effect, enters into a contract authorizing his physician to operate to the extent of the consent given, but no further.

It was not, however, contended by the defendant that under ordinary circumstances consent is unnecessary, but that, under the particular circumstances of this case, consent was implied; that it was an emergency case, such as to authorize the operation without express consent or permission. The defendant was a physician and surgeon of standing and character, making disorders of the ear a specialty and having an extensive practice. He was consulted by the plaintiff, who complained to him of trouble with her right ear, and, at her request, made an examination of that organ for the purpose of ascertaining its condition. He also at the same time examined her left ear, but, owing to foreign substances therein, was unable to make a full and complete diagnosis at that time. The examination of her right ear disclosed a large perforation in the lower portion of the drum membrane, and a large polyp in the middle ear, which indicated that some of the small bones of the middle ear (ossicles) were probably diseased. He informed the plaintiff of the result of his examination, and advised an operation for the purpose of removing the polyp and diseased ossicles. After consultation with her family physician, and one or two other consultations with the defendant, the plaintiff decided to submit to the proposed operation. She was not informed that her left ear was in any way diseased, and understood that the necessity for an operation applied to her right ear only. She repaired to the hospital, and was placed under the influence of anesthetics; and, after being made unconscious, the defendant made a thorough examination of her left ear, and found it in a more serious condition than her right one. A small perforation was discovered high up in the drum membrane, hooded, and with granulated edges, and the bone of the inner wall of the middle ear was diseased and dead. He called this discovery to the attention of the plaintiff's family physician, who attended the operation at her request, who also examined the ear and confirmed the defendant in his diagnosis. The defendant also further examined the right ear, and found its condition less serious than expected, and finally concluded that the left, instead of the right, should be operated on, devoting to the right ear other treatment. He then performed the operation of ossiculectomy on the left ear, removing a portion of the drum membrane and scraping away the diseased portion of the inner wall of the ear. The operation was in every way successful and skillfully performed. But the plaintiff claimed that the operation greatly impaired her hearing, seriously injured her person, and, not having been consented to by her, was wrongful and unlawful, constituting an assault and battery. She obtained a verdict for $14,322.50 damages, but a new trial was granted on the ground that this was excessive.

The Supreme Court affirms the order granting a new trial, but holds that the defendant had no authority to perform the operation without the plaintiff's consent, express or implied. That her consent was not expressly given, and whether it should be implied from the circumstances of the case was a question for the jury to determine. That, if the operation was not authorized by the express or implied consent of the plaintiff, it was wrongful and unlawful and constituted in law an assault and battery. It is unnecessary to show in a civil action for assault and battery that the defendant intended by the act complained of to injure the plaintiff. It is sufficient if it appear that the act was unlawful.

The medical profession, the Supreme Court says, has made signal progress in solving the problems of health and disease, and they may justly point with pride to the advancements made in supplementing Nature and correcting deformities and relieving pain and suffering. The physician impliedly contracts that he possesses, and will exercise in the treatment of patients, skill and learning, and that he will exercise reasonable care and exert his best judgment to bring about favorable results. The methods of treatment are committed almost exclusively to his judgment, but the court is aware of no rule or principle of law which would extend to him free license respecting surgical operations. Reasonable latitude must, however, be allowed the physician in a particular case; and the court would not lay down any rule which would unreasonably interfere with the exercise of his discretion, or prevent him from taking such measures as his judgment dictated for the welfare of the patient in a case of emergency. If a person should be injured to the extent of rendering him unconscious, and his injuries were of such a nature as to require prompt surgical attention, a physician called to attend him would be justified in applying such medical or surgical treatment as might be necessary for the preservation of his life or limb, and consent on the part of the injured person would be implied. And, again, if, in the course of an operation to which the patient consented, the physician should discover conditions not anticipated before the operation was commenced, and which, if not removed, would endanger the life or health of the patient, he would, though no express consent was obtained or given, be justified in extending the operation to remove and overcome them.

But such was not the case at bar. The diseased condition of the plaintiff's left ear was not discovered in the course of an operation on the right, which was authorized, but, on an independent examination of that organ, made after the authorized operation was found unnecessary. Nor was the evidence such as to justify the court in holding, as a matter of law, that it was such an affection as would result immediately in the serious injury of the plaintiff, or such an emergency as to justify proceeding without her consent. She had experienced no particular difficulty with that ear, and the questions as to when its diseased condition would become alarming or fatal, and whether there was an immediate necessity for an operation were, under the evidence, questions of fact for the jury. The evidence also made the qeustion of whether, if the family physician by his conduct assented to the operation, the plaintiff was bound thereby, one of fact for the jury to determine.

The amount of the plaintiff's recovery, if she was entitled to recover at all, must depend on the character and extent of the injury inflicted on her, in determining which the nature of the malady intended to be healed and the beneficial nature of the operation should be taken into consideration, as well as the good faith of the defendant.

Current Medical Literature

American Medicine, Philadelphia.

August 5.

1 Normal Malay and the Criminal Responsibility of Insane Malays. C. E. Woodruff, New York.
2 *Why Surgical Fixation of a Movable Kidney Will Not Relieve Dyspeptic and Nervous Symptoms. C. D. Aaron, Detroit, Mich.
3 *Management of Transmissible Diseases. D. H. Bergey, Philadelphia.
4 *Hypnotic Cumulative Action as a Therapeutic Guide. G. F. Butler, Chicago.
5 Systematic Examination of the Eyes of Defectives. F. P. Lewis, Buffalo, N. Y.
6 *Arteriosclerosis. G. Stockton, Columbus, Ohio.
7 *The Busy Practitioner from a Business Point of View. A. J. Colton, Buffalo, N. Y.

2. **Why Surgical Fixation of a Movable Kidney Will Not Relieve Dyspeptic and Nervous Symptoms.**—Aaron says that the study of several hundred cases in his own practice has led him to the belief that movable kidney in itself can not produce all the dyspeptic and nervous symptoms of which patients complain, unless there is a displacement of some other organ in the abdomen. Cases in which the kidney alone is movable are those that give few or no symptoms. The author's results in over 600 cases, with a properly fitting band, have proved eminently satisfactory. Before fitting a band to patients with movable kidney, the location of all the abdominal organs must be accurately made out by palpation, auscultatory percussion, transillumination, inflation, *x*-ray, etc. A movable kidney is only pathologic when it is palpable. The irrationality of producing a pathologic condition by fixing a kidney that ought to be mobile, therefore, can readily be seen. When a patient is in the dorsal decubitus position, gravity carries the kidney back to its normal position. This can not take place when a kidney is surgically fixed, and under these circumstances there is always an abnormal condition. In cases of movable kidney, surgeons irrationally endeavor to bring about an abnormal adhesion, and in this way induce a condition that may aggravate the symptoms they are endeavoring to relieve.

3. **Management of Transmissible Diseases.**—Bergey says that the general prevalence of some of the transmissible diseases may be attributed to two important causes: (1) The infection of large numbers of individuals through mild and often unrecognized cases; and (2) the failure to enforce the sanitary precautions that would prevent the dissemination of infectious materials. The difficulty experienced in the satisfactory isolation of cases of transmissible disease in private houses calls for the more general treatment of these diseases in proper isolation hospitals. There are at least four important sources of danger from such hospitals, yet with proper equipment and management all these dangers may be eliminated. They are (1) the danger of the dissemination of infectious materials through the drainage; (2) the danger of the dissemination of infectious materials by means of air currents; (3) the danger of the dissemination of infectious materials by insects or vermin; (4) the danger of the dissemination of infectious materials by the physicians, nurses, attendants, visitors, or the convalescents.

4. **Hypnotic Cumulative Action as a Therapeutic Guide.**—Butler discusses the principle of aggravation of symptoms from the standpoint of therapeutic indication, so far as hypnotics are concerned. The cumulative effects of the hypnotics, as shown by their extreme effect hours after their first administration, indicate that this can be secured by broken doses given at intervals, so as to secure the acme of influence during the hours after 12, midnight, when this influence is most needed. The various alterative effects of the hypnotics serve as an indication that they will counteract the effects occasioned by the products of altered metabolism which are irritating the monarchical vasomotor center of the medulla. The synthetics, which are more potent in these particulars, can be aided, and their injurious effects removed by the addition of vegetable hypnotics, like conium, and those derived from the solanacea, as well as certain opium derivatives.

6. **Arteriosclerosis.**—Stockton states that heredity, together with syphilis, alcohol, gout, etc., are, in his opinion, the most prominent etiologic factors. He discusses the pathologic changes in the blood vessels and calls attention to the symptoms in the various forms of the disease, particularly the cardiac form. He directs attention to renal sclerosis, and regards chronic interstitial nephritis as an important cause of the cardiac form of the disease and also of sclerosis of the encephalon. The importance of recognizing the disease in the early stages is emphasized and treatment is fully discussed.

7. **The Busy Practitioner from a Business Point of View.**—Colton has devised a card index system, whereby a physician can keep his own books as easily as he can keep the ordinary visiting list.

Medical Record, New York.

August 5.

8 *Syphilitic Spinal Paralysis, with Special Reference to the Type Described by Erb. W. J. Dougherty, New York.
9 *Copper and Zinc Poisoning—Brass Poisoning. M. H. Sicard, New York.
10 *Rheumatism of the Feet. L. W. Ely, New York.
11 *Gases of the Body. L. H. Watson, Chicago.
12 *Importance of Early Recognition of Valvular Disease in Children. A. E. Childs, New York.
13 *Fibroma of the Ileum, Producing Obstruction by Invagination; Enterotomy; Recovery. H. A. Royster, Raleigh, N. C.

8. **Syphilitic Spinal Paralysis.**—According to Dougherty, the time that has elapsed between the primary infection and the onset of symptoms indicating medullary involvement must be taken into consideration, and those cases developing within a few years after the luetic infection, even though slow in onset may be looked on as an expression of secondary or tertiary syphilis, whereas, if a considerable period of time has elapsed before the beginning of the symptoms referable to the cord, the changes must be due to what he calls the terminal syphilitic stage. He describes the histories and pathologic findings in two cases of the former class, which lead him to conclude that it is the distribution and dissemination of the vascular lesion rather than any special difference in their nature which determines which type of spinal syphilis shall ensue, and that the so-called Erb's syphilitic spinal paralysis is not, as Erb is inclined to believe, necessarily dependent on a system disease of the spinal cord.

9. **Copper, Zinc and Brass Poisoning.**—Sicard describes the technical processes employed in the production of copper, zinc, and brass, and the toxic effects to which the workmen engaged in them are subject.

10. **Rheumatism of Feet.**—Ely says that among the patients seeking relief at an orthopedic clinic probably the most frequent complaint is "rheumatism of the feet." There is no "rheumatism of the feet." One of the commonest affections giving rise to pain in the feet is flat foot. Another is anterior metatarsalgia, or Morton's toe. Gonorrheal arthritis or periarthritis of the ankle has often been observed, and the author says that there is a form of gonorrheal infection characterized by extreme sensitiveness about the sole, to which he gives the name of gonorrheal foot. The pathology of this affection is still a matter of doubt. Hysteria may simulate rheumatism of the feet, and tuberculosis of the ankle and tarsus must also be carefully excluded, as any circumscribed, persistent, painful swelling in the foot, especially of a child, is to be viewed with extreme suspicion. The sequelæ of fractures, and the pains of late syphilis or of locomotor ataxia must also be kept in mind.

Gout and acute rheumatism itself close the list of such affections, and it is pointed out that acute articular rheumatism never leaves behind it a damaged joint. The treatment of these conditions is briefly outlined, the chief adjuvants required being zinc oxid plaster, plaster of Paris, a few drugs, and some assistance from the bracemaker and shoemaker.

11. **Gases of Body.**—Watson says that some of the gases, like oxygen, nitrogen, and carbon dioxid, are essential to our existence, but others are waste products, and appendicitis, intestinal obstruction, ovarian disease and heart troubles may be simulated by their presence in the intestinal tract. Nitrogen, oxygen, carbon dioxid, sulphureted and carbureted hydrogen, and marsh gas are the principal gases of the body. Carbon dioxid is the greatest in volume and the most widely diffused. It has usually been designated as a poisonous gas, but modern physiologic chemistry takes a different view of it, and it can be considered poisonous only when it is an obstruction of respiration. Large amounts may be found in the stomach and bowels in health, and still more in neurotic conditions, but its coefficient of absorption is high and but little inconvenience results. The accumulation of gas in the bowels may give rise to diagnostic difficulties, and the author cites several such cases. Lactic, acetic, and butyric acid fermentation, and the decomposition of fats, proteid matter and cellulose are all concerned in the formation of intestinal gases. When loops of gut are strangulated, first water and later gas forms in them, giving rise to meteorism. Phantom tumors are of this order. Headache, vertigo, and nausea are often the result of the presence of sulphureted hydrogen in the bowel. The formation of intestinal gases must be controlled by proper management of the diet.

12. **Importance of Early Recognition of Valvular Disease in Children.**—Childs speaks principally of valvular disease of rheumatic origin. He defines rheumatic endocarditis by saying that it is an inflammation of the lining membrane of the heart commonly confined to the valves, manifested by stiffness or pain in the joints or tendon sheaths, or in any of the muscles of the body, from the most trivial or obscure form to a well-marked arthritis. It is usually accompanied by rapid heart action without regard to intermittency or irregularity, a low grade of fever, ofttimes but a half degree, a soft blowing, usually systolic murmur at the apex of the heart, and by a well-marked leucocytosis. He calls attention to the necessity for careful physical examination of children, emphasizing the fact that endocarditis in children is very often overlooked in its early stages because the manifestations of rheumatism in children are usually very obscure. They may appear only as the so-called wandering or growing pains, or there may be only stiffness, or definite joint pains alone, or joint pains plus swelling and redness. Any muscular pain, no matter how slight or where located, may mean an associated endocarditis. In the treatment especial attention must be paid to the heart muscle by rest and general systematic treatment to prevent anemia and malnutrition.

13. **Fibroma of Ileum, Producing Obstruction by Invagination.**—Royster gives the history of a man of 42 who for about six months had suffered from symptoms pointing to a progressive growth of the intestine. Finally there came an attack of obstruction, which on opening the abdomen was found to be caused by an invagination of the ileum secondary to the presence in the gut of a pedunculated fibroma, the size of a walnut. This was removed through a longitudinal incision by excising the ellipse of mucous membrane surrounding its base, and the intestinal wound closed with three rows of continuous sutures of silk, one for each coat and an extra interrupted Lembert stitch on the peritoneal coat. The patient made a good recovery.

Medical News, New York.

August 5.

14 Beginnings of the Psychoses. W. K. Walker, Dixmont, Pa.
15 *Galvanism as a Curative Agent in Nervous Diseases: Importance of Equipment and Technic. W. B. Pritchard, New York.
16 *Appendicitis: Medical and Surgical. R. R. Kime, Atlanta, Ga.
17 Attempt to Adapt for Clinical Purposes, Tests for Electric Conductivity of Urine. G. Kollscher and L. E. Schmidt, Chicago.
18 *Stricture of the Urethra: Preliminary Note on a Tunneled and Grooved Sound and a Tunneled and Grooved Catheter for Dilatation. V. C. Pedersen, New York.
19 Cystic Kidney and Liver. H. A. Reque, Chicago.

15. **Galvanism in Neurology.**—Pritchard is convinced of the efficacy of galvanism in neurology, though it is by no means indiscriminately applicable. On the contrary, its field is relatively limited, and it has no place as yet in the numerical majority of neurologic cases, or, if a place at all, only as an aid in some collateral way to the end desired. In the field of peripheral nerve diseases, including many of the neuroses, nearly all forms of neuritis, the tics, vasomotor and trophic affections, and the paresthesiæ of whatever cause, galvanism occupies a position of positive and indispensable importance. The fatigue psychoses, the headaches and cerebral conditions underlying the obsessions of neurasthenia, and of simple affective melancholia, are really the field of selective usefulness for this agent. Even in this field of selection, however, galvanism is rarely, if ever, a specific. To get the best results, it is necessary to have a proper equipment and to know how to use it.

16. **Appendicitis.**—Kime says that the average surgeon will save more lives by operating only in the severe cases of appendicitis within the first forty-eight hours and in those in which the patients suddenly grow worse after a few days of improvement; doing the interval operation on all patients who do not completely recover from first attack and in relapsing cases. Internal treatment properly conducted should have a death rate of not over from 2 to 5 per cent. The death rate can be reduced nearest to zero by the average surgeon doing the interval operation on those patients who do not fully recover or who have relapses, and operating in the severe cases within from twenty-four to forty-eight hours and in those that suddenly grow worse after a few days of improvement, leaving the remainder of the cases to judicious medical treatment. There is also a field for medical treatment in many cases after the appendix has been removed in correcting the original cause of appendicitis or looking after existing complications. The surgeon should not dogmatically assert that appendicitis has no medical treatment, nor decry or exclude judicious medical treatment in these cases; neither should the general practitioner exclude the surgeon, but each should assist the other.

18. **Stricture of Urethra.**—Pedersen calls attention to a tunnelled and grooved sound and catheter devised by him. The curve of the sound is of the same radius as the standard urethral sound, but one inch shorter. This decrease in length has been compensated for by an increase of one inch in the length of the shank. The object and advantage of the short curve lie in the fact that there is very much less leverage on the face of a stricture in a short curve than in a long curve, thus the danger of injuring the filiform and of making false passages in the urethra is greatly decreased. The taper of the curve is uniform from its base to its tip and regularly includes six sizes from No. 12 F. upward. The smallest point of the instrument is made 6 F. for the reason that this is the size of the Maisonneuve instrument. The small sizes, therefore, below 12 F. are uniformly at the tip No. 6 F. and regularly taper upward as follows: Two sizes for 8 F., three sizes for 9 F., four sizes for 10 F. and five sizes for 11 F. The uniformity of the taper has the object of rendering the dilatation much more secure on the following grounds: The middle of the curve of the 21 F. sound, for example, is 18 F., while the sizes 19 and 20 F. occur at equal distances between the middle of the curve and the full size of the shank. If, therefore, a No. 20 F. sound has already been passed through the stricture, the beak of a 21 F. sound will be almost entirely through the same stricture before the dilating begins. The safety of this plan is obvious and becomes much more important when, for any reason, the dilating is being done more rapidly than one size at a time. The tunnel of the sound is one-third larger in diameter than the diameter of a small filiform and is five-eighths of an inch long. These dimensions are uniform throughout the set of sounds, thus securing entire uniformity of action and correcting the mistake in the standard tunneled sound by which the tunnels in the upper sizes are so large as to permit an inconvenient amount of play over the filiform. The length of

the tunnel secures the sounds from twisting, buckling, breaking or cutting the filiforms, accidents which are not infrequent in the standard instrument. The length, however, is not sufficient to cause binding of the sound on the filiform, provided ordinary skill is employed. The groove of the sound passes along the shank three-quarters of the length thereof, thus insuring ease of testing the freedom of the filiform. The grooves, like the tunnels, are also of the same size and length throughout the set. There is no reason whatever for increasing the width and depth thereof as the size of the sounds advances, thus the inconvenient dipping of the mucous membrane into a wide groove in a large sound is largely corrected and consequent pain to the patient avoided. The tunneled and grooved silver catheter alluded to in the title are designed in the same manner, namely: With a short curve of uniform taper of six sizes, a shank one inch longer than the standard, tunnels of uniform diameter, five-eighths of an inch long, and grooves of uniform length, depth and width throughout the series. The set which the author has employed consists of a 6 F., 12 F. and 18 F., tunneled and grooved catheter and sounds of all numbers from 8 to 20 F., both inclusive, also 22 and 24 F. The ordinary practitioner can do perfectly good work with catheters 6 and 12 F. and the even numbered sounds from 8 to 20 F., both inclusive. Only the specialist who is certain to encounter difficult cases frequently needs every size of sound. The technic of employing these instruments is as follows: After the filiform has been inserted in the usual manner, the 6 F. catheter is passed over the filiform, the bladder, if distended, is partially evacuated through the silver catheter or, if empty, is moderately filled with any mild antiseptic solution, such as boric acid, permanganate of potash, Thiersch or silver nitrate solution. The catheter is then removed, leaving the filiform *in situ*, and the sounds are taken in order, beginning with 8 F., and gently passed over the filiform through the stricture until that size is reached which the patient states to be moderately painful. Pedersen finds that, as a rule, most strictures may be thus dilated to about 10 F. with very little inconvenience to the patient. The sound is then left *in situ* for ten or fifteen minutes in order to get the full benefit of the dilatation. After this the filiform and sound are removed and the patient is allowed to evacuate the contents of his bladder. If the contents of the bladder be urine, as in cases of distention, the sound is removed and the filiform is left in place, and the silver catheter is then again passed and the bladder carefully washed with rather hot antiseptic fluid, some of which is left in the bladder to prevent bleeding, such as sometimes occurs when an overdistended bladder is emptied. After four or five days the patient returns for the passing of larger sounds. Usually in from four to six weeks dilatation is carried to the point where a filiform becomes unnecessary. A very few strictures are so tortuous and deeply seated that tunneled and grooved sounds 22 and 24 F. should be passed over a filiform before use of the latter is abandoned.

New York Medical Journal.

August 5.

20 Recent Advances in Surgery. H. Lillienthal, New York.
21 *Recurrent Tuberculous Peritonitis After Incomplete Operation, with Report of Case Treated by X-Rays. J. B. Shober, Philadelphia.
22 *Treatment of Pott's Disease, and of Rotary Lateral Curvature, by the Plaster-of-Paris Jacket and the Aluminum Corset. C. Ogilvy, New York.
23 *Management of Summer Diarrhea in Infants and Young Children. Observations Based on 5,000 Cases in Private and Dispensary Practice. E. M. Sill, New York.
24 The Premature Infant. D. H. Sherman, Buffalo, N. Y.
25 Case of Foreign Body in the Rectum. C. S. White, Washington, D. C.
26 Significance of Sudden, Severe, Abdominal Pain. E. A. Babler, St. Louis.
27 Suggestions in Treatment of Wounds. H. D. Collins, New York.

21. **Tuberculous Peritonitis.**—As the result of personal experience and a study of the literature, Shober concludes that until we have more precise methods of differentiation most patients with tuberculous peritonitis will be operated on under some other diagnosis. Celiotomy and removal of the primary focus of the disease offers the best prospect of cure. The abdomen should be thoroughly irrigated and closed without drainage. A short course of x-ray treatment immediately following operation is advisable in all cases, but it is especially important in those cases in which the primary focus has not been removed. Should recurrence take place in these cases, a secondary operation—to remove, if possible, the primary focus—is advisable; and this operation should be followed by a course of x-ray treatment.

22. **Aluminum Corset in Pott's Disease.**—Ogilvy favors the aluminum corset, made from sheet aluminum of various thicknesses. To make an aluminum corset, a plaster of Paris cast of the body is taken. This is made exactly as is a plaster of Paris corset, except that the trimming of the upper and lower edges is omitted. Around this, after it has been removed from the body, an additional bandage is tightly wound, from top to bottom, drawing it closely together. This is then filled in with soft setting plaster of Paris. The outer cast of bandages is then removed and the model obtained over which the aluminum is molded. The hammering of the aluminum, in working it up to fit the model, so tempers it as to make it almost as durable as steel. It is made in two halves, which are swung from behind on two double-hinged joints. It is then perforated and polished. This makes not only a light, durable, comfortable and firm support, but also one which can be easily remodeled from time to time as occasion requires, and for this reason particularly is it of the greatest usefulness in spinal curvature, for it allows us to keep up a firm, even, constant pressure against the deformity without pain or discomfort. Before the cast for a corset is made, the rigidity and spasm of muscle, if present, should be as much as possible relieved to obtain a better correction of the deformity. This may be accomplished by manipulation and extension, which should be employed for several weeks, if necessary, previous to the application of the corset. The results obtained by the use of the aluminum corset with corrective exercises are these: Not only are the general development, health and muscle tone much improved, but the deformity is arrested, and to some extent—in some cases to a very great extent—corrected.

23. **Management of Summer Diarrheas in Children.**—Sill summarizes his views as follows: First, absolute rest for the inflamed mucous membrane of the stomach and intestines, attained by stopping all food and giving nothing but water; second, eliminate the cause—namely, a foreign substance which is causing irritation, as fermenting or indigestible food, this being done by the use of castor oil or calomel; third, success lies in the mode of gradually increasing the strength and quality of milk, beginning in all cases irrespective of the age up to a year with a very weak cream mixture.

Boston Medical and Surgical Journal.

August 3.

28 *Influence which the Acquisition of Tropical Territory by the United States Has Had, and Is Likely to Have, on American Medicine. G. Blumer, San Francisco.
29 Case Illustrating the Local Conditions After a Suprapubic Enucleation of the Prostate. A. L. Chute, Boston.
30 Observations on the Treatment of Epilepsy. D. R. Brower, Chicago.
31 Dietary in Epilepsy. L. P. Clark, New York.
32 Photography of Gross Specimens. M. D. Miller, Cambridge.

28.—See The Journal, July 15, 1905, page 169.

Lancet-Clinic, Cincinnati, Ohio.

August 5.

33 Conservative Treatment of Pelvic Diseases in Women. H. F. Lewis, Chicago.
34 *Strictures of the Male Urethra. A. Ravogli, Cincinnati.

St. Louis Medical Review.

July 29.

35 Antitetanic Serum in Gunshot Wounds. H. J. Scherck, St. Louis.
36 Curiosities of Ancient Japanese Medicine. J. Knott, Dublin, Ireland.

August 5.

37 Law of Consent in Regard to Operations. A. N. Taylor, New York.

34.—See abstract in The Journal, Nov. 5, 1904, page 1409.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

July 22.

1 Relation of Medical Men to Official and Public Bodies. R. Maclaren.
2 *The Opsonic Power of People Suffering from Tuberculosis. R. H. Urwick.

3 Incidence of the Hair's Greyness. G. L. Cheatle.
4 *Perception of Light and Color. F. W. Edridge-Green.
5 Royal College of Surgeons of Edinburgh; Its Early Connection with Medical Teaching. R. Mc. Johnston.
6 Report of Special Chloroform Committee.

2. **Opsonic Power of the Tuberculous.**—Urwick studied the opsonic power of the blood of 54 people suffering from various tuberculous affections, employing the method described by Wright, and found that this power may be either high or low. A low power is due to an inherent deficiency or to an exhaustion of the machinery of immunization. A high power is due to an active response by the machinery of immunization to the stimulus of infection. This power in the tuberculous varies from day to day, and the curve thus produced shows in many cases negative and positive phases following autoinoculation. The opsonic power of healthy people is nearly the same and does not vary from day to day.

4. **Perception of Light and Color.**—Edridge-Green attempts to show how his theory of light and color perception explains known facts of light and color vision. He assumes that light falling on the eye liberates the visual purple from the rods and a photograph is formed. The decomposition of the visual purple by light chemically stimulates the ends of the cones and a visual impulse is set up which is conveyed through the optic nerve fibers to the brain. These visual impulses probably differ in character according to the wave length of the light causing them. The author has examined the retina of several monkeys after they have been kept in a dark room and found that the visual purple was in the yellow spot between the cones. He discusses the evolution of the color sense, color blindness, color mixing, color vision of the periphery and of the retina, and color contrast.

The Lancet, London.

July 22.

7 Hemomanometry in Man. G. Oliver.
8 Neuroses of Early Life. H. Ashby.
9 *Influence of Feeding on the Mortality of Infants. W. J. Howarth.
10 Three Cases of Separation of the Descending Process of the Upper Tibial Epiphysis in Adolescents. G. H. Makins.
11 *Practical Value of Grocco's Parovertebral Triangle as a Physical Sign for the Diagnosis and Estimation of Pleural Effusions. W. Ewart.
12 Chondrodystrophia Fetalis or Achondroplasia. H. M. Joseph.
13 *Digestive and Other Actions of Certain Fruits. J. G. Sharp.
14 *Oral Sepsis as a Cause of Iritis. E. K. Campbell.

9. **Influence of Feeding on Infant Mortality.**—Howarth has investigated this question in the case of 8,348 children, 63.3 per cent. of whom were breast fed, 19.5 per cent. hand fed and 17.3 per cent. breast fed at first and afterward hand fed, or partly breast fed and partly hand fed. The highest death rate (197.5) was observed among the hand fed children. It was nearly three times that recorded among breast-fed children (69.8), and twice that of children reared partly by hand and partly naturally (98.7). Among hand-fed children, diarrheal diseases and deaths from defective nutrition prevailed. Next in importance are chest ailments and then convulsions due to disorders of digestion. Among breast-fed children the most common causes of death are bronchitis, pneumonia and convulsions. Among children who were first breast fed and subsequently hand fed the death rate is not so high as among the purely hand fed, although the aggregate mortality is considerably higher than that of breast-fed children; in one or two diseases the mortality is lower. This result obviously points to the advantages which accrue to children who have natural food supplemented by artificial food rather than an entire supply of the latter. Children fed on condensed milk show a very high mortality, 255 deaths per 1,000 children. Next come the children reared on bread, rusks, arrowroot and other farinaceous foods, 252 per 1,000. The deductions made by Howarth are as follows: The use of sweetened condensed milk, either whole or skimmed, invariably should be discouraged and whole unsweetened condensed milk only should be permitted when one is satisfied that the milk is being used with a proper degree of dilution and with the necessary additions as in the case of modified cows' milk; also that since the death rate among children reared on patent foods is, on the average, higher than among those fed on diluted cows' milk, every attempt should be made to encourage parents to use this latter food and to educate them to an appreciation of the necessity for the additions to, and the dilution of, cows' milk to render it suitable for infant's food. The addition of patent foods to the dietary of very young infants is unnecessary, sometimes dangerous, and always expensive. Furthermore, it must not be forgotten that the risks to which hand-fed children are exposed are considerably minimized by mixed feeding and that, therefore, every mother who is unable fully to satisfy her infant should be encouraged to continue to feed her child and to supplement any deficiency by means of artificial food, and that only in case of absolute necessity should resort be had to artificial feeding alone.

11. **Practical Value of Grocco's Paravertebral Triangle in Pleural Effusions.**—Ewart recommends observance of this sign in cases in which the size of the pleural effusion is less than a fifth of that of the pleura. Whenever fluid collects within a free pleura, a paravertebral patch of partial dullness, triangular in outline, is obtainable in the other, the "dry," pleura. The crucial proof employed to test the genuineness of the trianguar dullness is its disappearance when the patient assumes the lateral decubitus on the side of the effusion, and its reappearance immediately he sits up or turns on to the sound side. This is at the same time a demonstration of the significance of the dullness, and is sufficient proof that its production is due to the influence of a mobile fluid. When, however, the pleura is overdistended, the mobility of the fluid is much reduced. The complete disappearance of Grocco's triangle does not then seem to occur, but the height of the triangle becomes much less with the change to the lateral posture. If there is no Grocco triangle of dullness there can be no free effusion in the chest. The extent of the effusion can also be determined by this sign; for, whereas the base of the triangle, corresponding in position to the twelfth rib and to the pleural sinus, varies only slightly with the bulk of different effusions, the length of the vertical side of the triangle varies exactly with the upper limit of the effusion.

13. **Digestive and Other Actions of Fruits.**—In this article Sharp shows that many common fruits contain ferments which play the part of papain and bromelin (ferment of pineapple), and that they can digest both egg and serum albumin to some limited extent. The fruits experimented with were strawberries, cherries, oranges, pears and apples. To obtain most benefit from the succulent fruits they should be eaten at the end of the chief meal. Stewed fruit, as a stimulant to the lethargic gut in constipation, should be eaten half an hour before breakfast. Oranges, if peeled and cut into thin slices and with castor sugar strewn over them, are highly efficacious as an aid to digestion. Grapes should only be eaten at the end of the chief meal of the day.

14. **Oral Sepsis as a Cause of Iritis.**—Campbell urges that the constitutional treatment of iritis should be directed to the removal of oral sepsis, for although about 50 per cent. of cases of iritis are undoubtedly due to syphilis, there is even here the possibility of a mixed infection. He has seen three cases of iritis in which there was an absolutely negative history of either syphilis or rheumatism in any shape or form, but in all three there was marked evidence of oral sepsis. The teeth were scaled, filled or extracted, suppurating pockets were purified and the mouth was rendered as pure as possible. This, combined with the use of mydriatics and tonics, cured all three patients rapidly.

Glasgow Medical Journal.

July.

15 *Secondary Operation for Complete Rupture of the Perineum. C. J. Cullingworth.
16 Enlargement of the Spleen and Liver in a Child, the Second Case in the Same Family: Splenic Anemia or Banti's Disease. J. L. Steven.
17 Movable Displacement of the Kidney. D. Newman.
18 Treatment of Endometritis. J. K. Kelly.

15. **Secondary Perineorrhaphy.**—Cullingworth describes a secondary operation for complete rupture of the perineum which he has employed for many years. The operation appears to be a modification of Lawson Tait's. Having made lateral traction with the fingers on each side of the anus so as to efface the appearance of a triangle, forming a single, tense, transverse white line, Cullingworth plunges one blade of a pair of angular scissors deeply into the tissues of the rectovaginal septum at the left extremity of this white line,

dividing the septum into two layers from one end of the white line to the other. From each extremity of this first incision a cut is made, running forward, and another running backward, the whole series of incisions representing the letter H. The forward incisions will mark the outer boundaries of the vaginal flap, and their length will determine the length of the new perineum. It will generally suffice for these incisions (which are carried along the line at the sides of the vulva where skin and mucous membrane meet, or, to be more exact, where the skin alters in character) to be made to terminate where scar tissue ends, i. e., where the original perineum ended. If this is difficult to recognize, it will usually be safe to let them terminate where the labia minora commence. The two backward cuts are much shorter. Their object is to facilitate (1) the exposure and (2) the union of the divided ends of the sphincter. The completion of the vaginal flap may be accomplished either with the scissors or with the knife, the left forefinger being on guard in the vagina. The line of reflection of the flap should be nearly horizontal, and should extend completely across from the anterior end of one lateral incision to the anterior end of the other. Lateral traction is now removed, when the triangular shape of the gap in the torn anterior wall of the rectum again becomes apparent. This gap will be represented in the flap which has been dissected up. Care must be taken not to carry the anterior border of the new perineum far forward. The first suture passed is the buried perineal suture. The perineal needle is introduced into the skin about one-sixth of an inch from the margin of the denuded surface at a point immediately below the angle of reflection of the vaginal flap. It is passed completely round from one side to the other in the substance of the rectovaginal septum just above the line of reflection of the flap, and the point is made to emerge on the right side at a spot corresponding to the aperture of entrance on the left side. The needle should not, during its course, make its appearance either in the rectum, in the vagina or in the wound. The suture should be a buried suture throughout. Its use is to brace up the whole perineum and to prevent spaces being left in the deeper part of the wound, where the raw surfaces are not in contact, and in which fluids can accumulate. In cases in which no such spaces seem likely to occur, the buried suture may be dispensed with. When the needle has been successfully passed the eye is threaded with a stout silkworm-gut suture and the needle is withdrawn, the suture being left in position but not tied. The rectal tear is now sutured from above downward, the sutures being introduced by means of a full-curved needle, held in a firm needle-holder, at the edge of the rectal mucous membrane on one side of the rent. The point of the needle is brought out on the denuded surface at a point distant about half an inch from the point of entrance, in order to insure the inclusion in the stitch of a sufficient amount of tissue. It is then carried across to enter at a corresponding point in the raw surface of the opposite side, and to emerge at the margin of the rectal mucous membrane at a point exactly opposite the original point of entrance. The needle being now removed, the suture is tied and the ends are dropped into the rectum before the next suture is introduced. Two, three or four other sutures, according to the requirements of the case, are then introduced in the same manner, care being taken that the ends of each suture, as it is tied, are dropped into the rectum and kept back out of the way. Cullingworth always uses catgut for the rectal sutures, so that it may not be necessary to disturb the parts for their removal. When all have been introduced and tied, and not before, the ends may be cut off at the anus. The vaginal side of the laceration is now closed by means of a series of interrupted sutures of silkworm gut, the ends of which are left long so that they can be loosely tied together and turned into the vagina, whence they can be easily withdrawn for removal. The remaining perineal sutures, stout silkworm gut, are introduced through the skin at the same distance from the edge as in the case of the buried suture, about one-sixth of an inch. These sutures are made to pass deeply, and they remain almost, but not completely, buried. They cross from one raw surface to the other at the deepest part of the wound, and emerge at a point on the skin of the opposite side exactly corresponding in position to the point of entrance. The number required varies; usually it is three or four. Cullingworth generally passes them in order from before backward, leaving them untied until all have been passed. The tying is done in reverse order, viz., the hindmost first. This hindmost stitch should bring together the ends of the anus. Immediately before the perineal stitches are tied the wound receives a final irrigation and cleansing. The closure of the perineal wound will have the effect of completing the folding on itself of the vaginal flap, and the edges of the flap should be united by interrupted silkworm-gut sutures, continuing forward, as it were, the row of perineal sutures, but not passing them so deeply. Now is the time to introduce any superficial sutures that may be required in order to bring the edges of the skin neatly together. Sometimes no such sutures are required; sometimes three or four. Cullingworth is in the habit of leaving the ends of the perineal sutures long and tying them loosely together in a bunch. The advantages of this are as follows: 1, It adds to the patient's comfort by avoiding the pricking of the skin by the ends of the sutures, which almost always happens when they are cut off short; 2, if any dressings are necessary they can be applied much more easily than when the sutures are cut short; 3, it greatly facilitates the removal of the sutures, for, when the time comes for this to be done, the sheaf is untied and each suture in turn is slightly pulled on by means of its long ends, so that the knot can be easily made visible and the suture divided. The less elaborate the dressing of the newly-repaired perineum the better. Two little strips of lint, three inches long by three-quarters of an inch wide, anointed with vaselin and laid parallel with each other on each side of the wound, are all that is required. When the thighs, now flexed on the abdomen, come to lie in their natural position, these two bits of lint will be found to have their unanointed surfaces in contact, the bunch of perineal sutures projecting between them. It is quite obvious that the less interference there is with the newly united parts the better. Vaginal douching should be ordered only when there is a purulent or offensive discharge. Otherwise the internal parts should be kept clean by means of wool sponges and warm water. This local cleansing and changing of dressings can be done with least disturbance of the patient by flexing the legs on the thighs and the thighs on the abdomen in such a way as to afford a full view of the wound. If the patient can not, by grasping each leg under the knee, hold the limbs sufficiently out of the way for the nurse's purpose, the nurse should have an assistant support the heels of the patient while the wound is being attended to. The catheter is usually required for the first two or three days. As soon as the patient is able to dispense with the catheter she should do so. The patient must remain in the recumbent posture absolutely for at least fourteen days. A full dose of castor oil is administered sixty hours after the operation. If it has not acted in four hours the dose should be repeated. The perineal stitches are removed on the eighth day.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and Other Topics of Interest to Students and Practitioners by Leading Members of the Medical Profession throughout the World. Edited by A. O. J. Kelly, A.M., M.D., with the collaboration of Drs. Wm. Osler, J. H. Musser, J. Stewart, J. B. Murphy, A. McPhedran, T. M. Rotch, J. G. Clark, J. J. Walsh, J. W. Ballantyne, J. Harold, E. Landolt, and R. Kretz. Vol. II. Fifteen series. Cloth. Pp. 310. Price, $2.00. Philadelphia: J. B. Lippincott Co. 1905.

Psychic Treatment of Nervous Diseases. P. DuBois. Translated and edited by S. E. Jelliffe, M.D., Ph.D., and W. A. White, M.D. Cloth. Pp. 466. Price, $3.00 net. New York: Funk & Wagnalls Co. 1905.

Superstition in Medicine. H. Magnus. Authorized translation from the German. Edited by J. L. Salinger. Cloth. Pp. 205. Price, $1.00 net. New York: Funk & Wagnalls Co., 1905.

Physical Diagnosis. R. C. Cabot, M.D., Third Edition, revised and enlarged: 245 illustrations. Cloth. Pp. 577. Price, $3.00. New York: Wm. Wood & Co.

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Original Articles

A CONSIDERATION OF THE ETIOLOGY AND DIETETIC TREATMENT OF INFANTILE ATROPHY.

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INTRODUCTION.

The condition known as infantile atrophy, athrepsia, or marasmus occurs so frequently and its consequences are so serious that it is of the utmost importance to obtain accurate knowledge of its pathology and nature, in the hope that such knowledge may furnish indications for treatment. The clinical manifestations have been described so many times that it is unnecessary to refer to them here, more especially as any physician in general practice must have seen such cases.

The condition begins, as a rule, in the first two or three months of life, and is caused by errors in the diet. It may be that the quantity of food is excessive, that the quality of the food is unsuitable, or that the food is given too frequently. As a rule, one finds a combination of several errors. In consequence of faulty diet, the digestion, as is shown by the character of the dejections, becomes impaired. The infant does not gain in weight as it should. In most cases there is a loss of weight down to a certain point, and after this the weight may remain more or less stationary for weeks or for months. A distinction has been made between these so-called primary cases, which occur in the first few weeks of life, and cases presenting the same symptoms and following the same course, which begin later in infancy in consequence of some acute disease, especially severe acute gastroenteric disturbance. Neither clinically nor anatomically can the cases be distinguished from one another, and there appears to be little reason for classifying them separately. This statement is not meant to in- le cases in which the emaciation is associated with .onic diseases, like tuberculosis and syphilis.

THEORIES OF CAUSATION.

The way in which a faulty diet produces a condition of atrophy is still unknown. It was assumed by Nothnagel[1] and later by Baginsky[2] that a more or less constant derangement of digestion in these cases ultimately caused atrophy of the intestines; consequently absorption became so much impaired that a general wasting of the body tissues ensued. In support of this view, Baginsky produced drawings illustrative of the microscopic appearances of the intestines in such cases. Heubner[3] denied the correctness of these observations and claimed that the microscopic appearances described by Baginsky were due to postmortem changes and to artefacts. He said that the loss of epithelium was due to postmortem alterations and showed that any obliquity in the cross-sections of intestines produced the appearance of shallower ducts, and that the thinness or thickness of the wall could be modified by the degree of distention or contraction of the intestines. In this way, areas of atrophy and hypertrophy were simulated. He exhibited photographs of sections of normal intestines distended and cut obliquely which were similar to the appearances described by Baginsky in cases of atrophy. Heubner believed that the condition of atrophy was due to severe functional disturbance. Heubner's views were sustained by the work of Gerlach,[4] published about the same time. In Gerlach's cases, a condition similar to that described by Baginsky was produced by means of postmortem alterations and varying degrees of distention and contraction of the intestines. Two years later Habel[5] published the results of investigations of this subject carried on under the supervision of Ribbert. There was scarcely a suggestion of atrophy of the intestines in the cases which he examined, and the results of his experiments on animals confirmed the statements of Heubner and of Gerlach.

Bloch[6] recently published the results obtained by him from the examination of three cases of infantile atrophy. Postmortem changes were avoided by injecting a quantity of 10 per cent. formalin solution into the peritoneal cavity immediately after death. Measurements were made of the stomach and intestines. Great care was exercised in the fixation and handling of the specimens. Serial sections were made of the tissues, and modern methods of staining were employed. There was no evidence of intestinal atrophy. The only abnormality to which he attached any importance was the condition of Paneth's cells. These cells, described by Paneth[7] in 1888, are found in Lieberkuhn's ducts. Under normal conditions, the presence of certain granules in the protoplasm of these cells is accepted as evidence that they are functioning. In Bloch's cases of atrophy the granules in the Paneth cells were, for the most part, absent, and from this Bloch concluded that the cells were not functioning. There was no appearance of degeneration of

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[1] Beiträge zur Physiologie u. Pathologie des Darmes. Berlin, 1884.

[2] A. Baginsky: (cited by Bloch). Die Verdauungs Krankheiten der Kinder. Tübingen, 1884. Zur Kenntniss der atrophie der Saugling. Deuts. med. Woch., No. 18, 1899. Zur Pathologie der Darmtraktus. Arch. f. Kinderheilkunde, No. 32, 1901.

[3] O. Heubner: (cited by Bloch). Ueber das Verhalten der Darmepithels bei Darmkrankheiten der Säuglinge, etc., Zeitsch. f. klin. Med., vol. xxix, 1896. Zur Kenntniss der Säuglings-Atrophie. Jahr. f. Kinderheilkunde. vol. liii, 1904.

[4] W. Gerlach: (cited by Bloch). Kritische Bemerkungen zur gegenwärtigen Lehre von der Darmatrophie, Deuts. Arch. f. klin. Med., vol. lvii, 1896.

[5] A. Habel: (cited by Bloch) Ueber Darmatrophie, Virch. Arch. vol. cliii, 1898.

[6] C. E. Bloch: (references to literature of atrophy) Die Säuglings-Atrophie und die Paneth'schen zeilen, Jahr. f. Kinderheilkunde, vol. lix, 1904.

[7] Paneth: cited by Bloch) Ueber die secernierenden Zellen des Dünndarmepithels. Arch. f. Mikroskop. Anat., vol xxxi, 1888.

Paneth's cells. Bloch attached great importance to the condition of the cells as a causative factor in the production of infantile atrophy. He referred to Pawlow's work on digestion and the important part which the "succus entericus" plays in assisting pancreatic digestion. Bloch also referred to work previously done by him in which these cells were always found to be normal under a variety of pathologic conditions involving the intestines. He also referred to Paneth's experimental work on animals in which these cells presented no abnormal appearances even after prolonged starvation. Whether or not the condition of Paneth's cells in these cases actually causes the atrophy, he at least feels sure that the condition of these cells is a primary one and is not induced by the atrophy.

Bloch, in describing the liver changes, says that in no case did he find any inflammatory or cirrhotic changes. The acini were distinct and the bile ducts were normal. In two cases the liver cells were normal. In one case, the protoplasmic outlines were not distinct and many of the cells were filled with fat, but the nuclei stained well. Bloch mentioned that Gaston,[8], Lesné[9] and Merklen, and Terrien[10] found severe and extensive lesions of the liver in cases of infantile atrophy. These observations have not been confirmed by other men.

On the whole, therefore, it may be said that there is no convincing evidence of any constant gross or histologic changes in the intestines or liver in infantile atrophy beyond the possible absence of Paneth's granules.

The strongest argument against this theory of intestinal atrophy is furnished by clinical experience. It has been shown many times that when these infants receive a *suitable food* a progressive increase in weight occurs within a few days. Their increase in weight equals or exceeds that of the average normal infant. In atrophic cases, an average gain of seven or more ounces in a week is to be expected until such time as the infant reaches a weight that approximates the normal for its age. It is inconceivable that repair of a serious structural lesion can occur so rapidly or so completely. The only satisfactory explanation for the rapid recovery which occurs when suitable food is procured is that the condition is caused by impaired cell functions and that these functions can be rapidly restored. The nature and situation of the impaired functions have not been determined.

Rubner[11] believes that the condition is caused by impaired intestinal absorption, and states that his experiments furnished no evidence that the metabolic processes were abnormal. It would be more accurate if Rubner said that the absorptive power for cow's milk was impaired, because it has not been shown that there is any impairment of absorption when a suitable food is given.

It is quite possible that there is an intimate connection between the abnormal condition of Paneth's cells and the lessened powers of absorption. Pawlow has shown that the *succus entericus* contains a ferment which he calls enterokinase. He describes it as a "ferment of other ferments," because it acts especially on the proteolytic ferment of the pancreas and increases the latter's activity in a marked degree when certain foods are given. The activity of the amylolytic and fat-splitting ferments of the pancreas is also increased, but to a lesser degree.

These facts, taken in conjunction with the results furnished by a limited number of metabolism observations which invariably have shown diminished intestinal absorption, make it very probable that the impaired intestinal functions are of chief importance in the production of the atrophic condition of the infant.

The assumption that chronic intoxication caused infantile atrophy seemed at one time to offer a plausible explanation of the disease, but up to the present time neither the source, nor the nature, nor the actual occurrence of such an intoxication have been satisfactorily demonstrated.

In 1896, Thiemich[12] published the pathologic findings in the liver in thirty-two cases of gastroenteritis. He did not describe the cases clinically, except to say that they presented manifold appearances. He divided the cases into three classes, depending on the degree of fatty changes present. He believed the fatty changes to be due to a toxin, the source of which could not be determined histologically. Thiemich stated that he did not doubt that such changes as he found must affect the functions of the liver and hoped that the investigations which were being conducted under Czerny's direction would show a connection between the impaired liver functions and cases of infantile atrophy occurring after gastroenteritis.

In 1897 Czerny[13] stated his belief that an excess of cow's milk proteid in the diet of young infants might produce an acid intoxication. He stated that, during the process of hydrolytic decomposition of the cow's milk proteids, an excessive production of acid took place. This necessitated the withdrawal of alkalies from the tissues in order to neutralize the excess of acid, and in this way the liver functions became impaired. In support of this, he referred to the symptoms of intoxication produced in atrophic infants by quantities of cow's milk proteid, which in normal infants produced no symptoms. When the milk proteids were diminished in these cases, the symptoms subsided, but, as the food then contained too little proteid for the body needs, the infant was forced to use up its own tissues. He compared the symptoms thus produced with those which followed the operation of Eck's fistula in dogs, by means of which the portal blood is carried across into the inferior vena cava, and so does not pass through the liver. In such cases, when the dog's diet contains an excess of proteid, severe intoxication symptoms follow, and when the quantity of proteid is reduced the animals emaciate. He believed that in the cases of infants an excess of proteid, together with impaired liver functions, explained the source of intoxication.

This article of Czerny's was the first in a series of six publications which appeared from time to time in the *Jahrbüch für Kinderheilkunde* under the general title *"Zur Kenntniss der Gastroenteritis im Säuglingsalter."* Czerny's article was the first of a series, with the subtitle "Intoxication." This theory of acid intoxication and impaired liver functions furnished the basis for the above-mentioned investigations, which were carried out by men connected with Czerny's clinic. Their results appeared to corroborate Czerny's views. The second paper was written by Keller and appeared under the sub-

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[6] Gaston: (cited by Bloch) Thesè Paris. Du Foie infectieux, 1893.

[9] (cited by Bloch) Etude des Alterations et functions du foie, etc. Rev. des Maladies, de l'Enfance, vol. xix, 1901.

[10] (cited by Bloch) "Altérations hépatique de la gastro-enteritis der Nourriso." Rev. des Maladies de l'Enfance, vol xviii, 1900.

[11] M. Rubner und O. Huebner: Die natürlichen Ernährung eines Säuglings, Zeits. f. Biologie, vol. xxxvi, 1898. Die Künstliche Ernährung eines normal. u. eines Atrophischen Säuglings, Zeits. f. Biologie, vol. xxxviii, 1899.

[12] Ueber Leberdgeneration bei Gastroenteritis. Ziegler's Beiträge z. Path. Anat., vol. xviii 1900.

[13] Czerny: Zur Kenntniss der Gastro Enteritis im Säuglingsalter (I, Intoxication), Jahr. f. Kinderheilkunde, vol. xiiv, 1897. (IV. Respirationsstörungen) Jahr. f. Kinderheilk., vol. xiv, 1897.

title *"Ammoniak auscheidung."*[14] Keller found that the quantity of nitrogen excreted in the urine in the form of ammonia was enormously increased in cases of chronic gastroenteritis. He claimed that this showed either that there was more acid in the body fluids than could be neutralized by the fixed alkalies, and, therefore, the ammonia, instead of being converted into urea, was used to neutralize these acids; or else that the urea-forming functions of the liver were impaired. To test this, he administered large amounts of sodium bicarbonate to two patients. He proposed in this way to neutralize any excess of acid present in the body fluids, and if the liver functions were unimpaired he expected to find a diminution of ammonia and a corresponding increase of urea in the urine. He concluded from his results that a condition of acid intoxication was present in these cases.

The third paper in the series alluded to was that of Van den Bergh,[15] entitled, *"Einfluss von Alkalizufuhr auf die Ammoniakauscheidung."* Van den Bergh's investigations were based on the Schroeder-Munzer theory that if an excessive excretion of ammonia in the urine disappeared after the administration of large quantities of sodium bicarbonate it proved that the condition was due to acid intoxication and not to insufficiency of the urea-forming functions of the liver, because the alkaline bicarbonate of soda would not influence liver functions, but would neutralize acid if present.

Van den Bergh gave from two to five grams of bicarbonate of soda in one day to each of five infants with chronic gastroenteritis. Both the total quantity of nitrogen and the quantity of nitrogen in the form of ammonia were determined for several days preceding and following the administration of the soda. The bicarbonate of soda caused either a complete disappearance or a marked diminution in the renal ammonia. This was accepted by Van den Bergh as evidence of an acid intoxication. He omitted to estimate urea in these cases and, therefore, was unable to show that the diminution of ammonia caused a corresponding increase in urea.

The fourth paper of the series, written by Czerny, was entitled *"Respirations störungen."* In this paper Czerny called attention to a type of respiration which occurred just before death in cases of chronic gastroenteritis, and stated that it strongly resembled the type of respiration observed in animals in which an acid intoxication had been produced experimentally.

The fifth paper was written by Czerny and Keller[16] and appeared under the subtitle *"Säurebildung."* A series of experiments were made to determine the effect of variations in the diet on the production of acid within the body in cases of chronic gastroenteritis. In this, as in all their previous observations, they regarded the urinary ammonia as a measure of acid intoxication. They found that changes in the proteid and sugar content of the food produced but little effect on the excretion of urinary ammonia. Changes in the fat content, on the other hand, produced marked effects. A high percentage of fat in the food caused a marked increase in the amount of urinary ammonia. It should be stated that the percentage of fat in the food in these experiments exceeded considerably the quantity usually given to normal infants, namely, from 5.7 per cent. to 8.6 per cent. of fat. These results caused them to modify their views concerning the sources of the acid intoxication, but they continued to believe that pathologic amounts of acid were present in the body fluids of these infants. Their modified belief was that the excessive production of acid was due, in part, to the fat in the food and, in part, to the condition of the infant; i. e., the effect on the infant's metabolism produced by variations in the severity of the gastroenteritis.

The sixth and last paper in the series was by Keller and appeared under the subtitle *"Einfluss der Zufuhr von Ammoniaksalzen auf die Harnstoff auscheidung."* The purpose of this work was to determine whether or not the urea-forming function of the liver was impaired in cases of chronic gastroenteritis. Thus far, in this series of experiments, the liver functions had not been investigated. Keller administered ammonium carbonate to six infants with chronic gastroenteritis. He assumed that if the urea-forming functions of the liver were unimpaired, the carbonate of ammonia would be converted into urea and excreted in the urine. He found a marked increase in the total nitrogen and urea on the day that ammonium carbonate was given, which showed that the ammonia was absorbed. In two cases, the ammonia in the urine was lessened rather than increased, and in one case was slightly increased. Keller attached no importance to this, but concluded that the urea-forming function was unimpaired in these cases. These results were regarded as confirmatory evidence of the correctness of Czerny's theory of acid intoxication.

This work of Czerny and his associates was severely criticized by Pfaundler[17] about three years later. Pfaundler showed conclusively that some of the chemical methods employed were faulty; that many of the results were incorrectly interpreted, and that the collective results of the investigation neither proved nor disproved the presence of an acid intoxication in cases of chronic gastroenteritis. It is now known that abnormal acids (oxybutyric, diacetic, acetone) are present in the urine in cases of acid intoxication. These acids have not been found in the urine from cases of chronic gastroenteritis. In addition to this, much of the work of Czerny and his associates was based on the generally accepted theory of Hallervorden, that an excess of ammonia in the urine is always an indication of excessive acid production in the organism. Hallervorden believed that the injurious action of the acid on the tissues was averted by a combination of the acid with ammonia at the expense of the urea formation, and the excess of ammonia in the urine was regarded as a measure of the degree of acid intoxication present. This theory has been disproved.

Pfaundler denied that the type of respiration described by Czerny was characteristic of cases of acid intoxication, and said that the type of respiration described was not even peculiar to chronic gastroenteritis. He referred to the work of Van den Bergh as the weakest of Czerny's arguments in favor of acid intoxication and showed that Schroeder and Munzer's theory, on which Van den Bergh's work was based, was incorrect. It was assumed that the administration of large amounts of alkali had no effect other than to neutralize acid that might be present in the body, and in this way diminish the ammonia and increase correspondingly the urea in the urine. In three of Van den Bergh's five cases the total nitrogen in the urine was markedly diminished. It has been shown that excessive amounts of alkalies diminish the nitrogen excretion in the urine. A satisfactory explanation for this could not be given at the time Van den Bergh did his work.

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[14] Jahr. f. Kin. Verh., vol. xliv, 1897.

[15] Jahrb. f. Kinderheilk, vol. xlv, 1897.

[16] Czerny und A. Keller: (V, Säurebildung), Jahr. f. Kinderheilk., vol. xlv, 1897.

[17] M. Pfaundler: Ueber Stoffwechsel Störungen bei Magendarm-Kranken Säuglingen. Jahrb. f. Kinderheilk., vol. liv, 1901.

Pfaundler also pointed out that the diminution of ammonia in the urine corresponded to the degree of alkalinity of the urine caused by the bicarbonate of soda and explained why the estimation of ammonia in alkaline urine by Schlösing's method is inaccurate. Referring to the incorrectness of the Schroeder-Munzer theory, Pfaundler said that when fixed alkalies are administered they combine with the acid constituents of the urine and form secondary and tertiary phosphates. When ammonia gas or a solution of ammonia is added to a solution containing tertiary alkaline phosphates, no chemical reaction takes place. The chemical affinities are already satisfied, and the ammonia remains uncombined in the solution and escapes into the air in a short time. In solutions containing secondary alkaline phosphates the conditions are more favorable for the ammonia to combine. A urine that contains only secondary and tertiary alkaline phosphates, and from the presence of these reacts alkaline, can not combine to form a stable compound with ammonia.

Pfaundler thinks that the nitrogen may escape through the skin and lungs in such a case. He referred to Keller's experiment, in which he administered ammonium carbonate to test the urea-forming function of the liver, and shows that the results were not conclusive. A portion of the ammonia administered was not accounted for in the urine, and the quantity of ammonia in the feces was not determined, so there was no data to show what the absorptive power of the intestines was for ammonia, and no control observations were made on normal cases. It is not permissible to assume that the administration of an injurious substance like ammonia would produce no alterations in the metabolism.

Pfaundler referred to another source of urea which was not considered by Keller, namely, amido acids present in the diet (malz suppe) of these infants. The formation of urea from amido acids is not a function of the liver, so that other organs besides the liver must have taken part in the urea formation in these cases. In three of the observations, the increase in urea exceeded the increase in total nitrogen after giving the ammonia, showing that there was some other source for part of the urea than that of the liver alone. Pfaundler further stated that the method which was used to determine urea is not an accurate one when large quantities of amido acid and derivatives are present. He concluded that these results failed to prove that the urea-forming function of the liver was intact in such cases. He then criticized the investigations of Keller, in which he determined the quantity of ammonia in the urine in cases of chronic gastroenteritis and found Keller's figures much too high. This he attributed, in part, to the formation of ammonia in the urine on standing, and, in part, to the effect of the diet. He called attention to the extraordinary fluctuation in ammonia excretion in the course of from twenty-four to forty-eight hours without any evident explanation and with no change in symptoms. In this connection he referred to an observation made by Bendix that if the renal ammonia is a measure of acid intoxication, then very large amounts of ammonia should indicate severe cases of intoxication. Neither Bendix nor Pfaundler could detect differences in the general condition of these infants which corresponded to the amount of urinary ammonia. It was admitted by Czerny and Keller that the diet was of importance in this respect.

In addition to his criticism of these investigations, Pfaundler controlled the results, to some extent, by very carefully conducted observations on forty infants and children. These included infants whose digestions were normal and infants with chronic gastroenteritis. Some of these infants were breast-fed. He found that the urinary ammonia in the first half-year of life was much higher than at other ages. On the average, both normal and abnormal digestions were 15.88 per cent. These results were obtained in perfectly fresh specimens of urine.

With digestion normal..........	15.00 per cent.
With digestion abnormal........	16.30 per cent.
A good general condition........	13.77 per cent.
A bad general condition.........	17.10 per cent.

In a small number of cases examined in the second half-year the average was 6.28 per cent. He found little variation in the amount of urinary ammonia from day to day when the diet remained the same. Increase in the fat when artificial food was given increased the ammonia to some extent. He did not give such high percentages of fat as Keller. (Such high percentages of fat would not be tolerated for long periods by healthy infants.) Pfaundler could detect very little difference in the ammonia excretion between infants with normal and those with abnormal digestion, following alterations in the percentage of fat in the food. He showed that a physiologic hyperacidity is present in the tissues of artificially fed infants whose food contains an excessive quantity of fat. This is the condition described by Naunyn as acidosis and is not to be confounded with acid intoxication, which is necessarily an injurious condition.

Pfaundler estimated the amount of urea and amido acids and found that in the first half-year the average percentage of urea nitrogen to the total nitrogen was 55.94 per cent. in infants with normal digestion and 47.08 per cent. in infants with digestive disturbances. These figures are lower than those usually given for this age. In the second half-year, the average percentage of urea nitrogen to total nitrogen was 76.53 per cent. He found in the first half-year an average of 12.01 per cent. of the total nitrogen represented by oxyproteic acid, amido acids and, perhaps, other substances. This is much more than occurs in adult urine. The urine content of urea showed an alternating relationship between the urea, the ammonia and the amido group. In conclusion, Pfaundler referred to the work of Jacoby and others on oxidative ferments of the liver and gave his own results obtained from the examination of seventeen livers. In nine cases in which the livers appeared to be normal histologically, he found the average oxidative power to be about three times as much as that of eight cases in which the livers showed evidences of severe parenchymatous or fatty changes. He remarked that this was the more surprising, because in the cases of adults and of animals marked parenchymatous changes in the liver do not cause such impairment of function that it can be detected by metabolic investigation. He suggested the possibility that in adults there is greater reserve power or that other organs may act vicariously. In twelve of these cases, he had examined the urine during life and found that ten of them showed an alternating relationship between the quantity of urinary ammonia and the oxidative power of the liver. When the amount of urinary ammonia was above the average, the oxidative power of the liver was less than the average and *vice versa.* He admitted that these results required verification, but believed that if they could be substantiated they would have an important bearing on the nitrogen distribution in the urine and might throw light on many obscure metabolic disturbances.

Pfaundler gave the following summary: 1. The ammonia coefficient (percentage of ammonia nitrogen to total nitrogen in the urine) is decidedly higher in the urines of both normal and abnormal infants than in the urine of adults, but not so high as Keller found nor are the variations so extreme.

2. This relative increase in renal ammonia is dependent, in part, on the high fat content of the food and, perhaps, in part, on a deficient oxidative function of the liver and tissues.

3. Ammonia coefficient above the normal occurs (a) when the liver cells are diseased (extreme fatty changes;); (b) when, for any reason, the general condition is much impaired, accompanied by circulatory and respiratory disturbances. Such a condition is frequently observed before death and is not more commonly associated with digestive disturbances than with other severe disorders; (c) when artificial food contains much fat.

4. The importance of this increased ammonia excretion depends on the cause. In a and b the increase of ammonia occurs because the oxidative synthesis to urea is interfered with. In one case the liver functions are impaired; in the other case oxygen is not supplied in sufficient quantities to the tissues or else is not taken up by them. In c the ammonia accompanies acid metabolic products which prevent its synthesis to urea and this constitutes so-called alimentary acidosis.

5. The hypothesis of Czerny and Keller that chronic gastrointestinal disease in infancy causes an acid intoxication, which in turn injures the metabolic functions and is shown by increased excretion of ammonia in the urine, can not be admitted. Insofar as the increased excretion of urinary ammonia in Keller's experiments was due to relatively large quantities of fat in the food, it constitutes an acidosis, i. e., an increased acidulation of the body fluids, and is not an acid intoxication. This condition can occur in a normal organism under the same circumstances and therefore has nothing to do with the gastrointestinal disease. It can not be proved to cause injury to the organism.

In cases in which the increased excretion of ammonia is not due to large amounts of fat or to faulty composition of the food, it has the appearance of a primary retention of ammonia in the organism, therefore the opposite of an acid intoxication. This may be due to relative or to absolute insufficiency of the oxidative functions of the organism. In one case more ammonia might be produced than the liver and the urea-forming organs could oxidize, and in the other case parenchymatous changes in the liver might impair its urea-forming function.

From the evidence thus presented, it is safe to assume that infantile atrophy is caused by functional impairment. It can not be stated definitely which functions are impaired. All metabolism investigations in cases of infantile atrophy have shown a diminished power of intestinal absorption for cow's milk and for other artificial foods. The impairment of function in this case may have to do with the digestion or with the absorption of the food. I know of no metabolism investigations which show the absorptive powers of atrophic infants for breast milk. It has been demonstrated clinically many times that these infants gain in weight and in every other way with astonishing rapidity when they are fed on breast milk. It is quite possible that they may not absorb the breast milk at first any better than other food, but the organs work more economically and more benefit is derived from the quantity absorbed. Rubner's[7] metabolism observation on a normal breast-fed infant showed that the infant did not absorb well during the observation, at least so far as nitrogen was concerned, and in addition received much less milk than usual. Notwithstanding this, it did not lose in weight. The re-establishment of functions within a few days that may have been seriously impaired for months suggests something besides the mere question of digestibility of food. It is possible that human milk contains ferments that stimulate directly the functions of the digestive glands. Pawlow[18] and his associates have shown that the mechanism of digestion is much more complicated and sensitive than was supposed and that there is great variation in the quantity and quality of the digestive juices dependent on the character of the food. May it not be that the digestive glands of young infants, aside from individual variations, are less adaptable than those of older infants? The gland cells function best when stimulated by human milk. In most young infants the digestive glands can be made to adapt themselves to abnormal conditions insofar as to digest cow's milk or other artificial foods when these foods are carefully adjusted to suit the infant. These same foods when not properly adjusted cause digestive disturbances which, if long continued or of frequent occurrence, result in infantile atrophy. It is not improbable that human milk contains special ferments that stimulate the activity of the digestive glands and that when other foods are given the stimulation is less effective and easily produces a condition of abnormal digestion.

EFFECTS OF DIFFERENT FOODS ON THE ATROPHIC CONDITION.

It will be of practical value to consider the effects of different foods on this condition. It will suffice for purposes of comparison to divide the methods of feeding into three classes, viz., proprietary foods, cow's-milk mixtures, human breast milk.

Proprietary Foods.—Very little need be said about the value of proprietary foods in cases of atrophy. It is not necessary to consider their composition for purposes of comparison. All that is required in this connection is to decide whether any or all of them provide a suitable food for atrophic infants. Their usefulness in this respect can be estimated by the results obtained from their employment. In a majority of cases they prove to be unsuitable. It can not be denied that some cases of atrophy gain rapidly in weight and, to all appearances, thrive on these foods. These good results, however, are of little assistance to the physician as guides to the treatment in similar cases because they appear to follow no definite rule and subsequent attempts with the same food usually result in failure. The physician should be governed in the choice of the infant's food by the requirements of the case. A hit or miss method of feeding does not educate the physician and it is oftentimes disastrous for the patient. Almost every case of infantile atrophy that is brought to the specialist for treatment gives the history of the use of several proprietary foods. In many cases a temporary improvement follows the use of each one. The improvement is usually of short duration and then another food is tried. These histories furnish a commentary on this method of feeding.

It should be remembered that other disturbances of nutrition, for example rickets and scurvy, may occur after a prolonged use of these foods.

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[18] J. P. Pawlow: The Work of the Digestive Glands. Translated by W. H. Thompson, London, 1902.

Cow's-Milk Mixtures.—The metabolism observations of Rubner[7] have shown that in order to utilize cow's milk an infant expends much more energy than is the case when breast milk is used. In the observations referred to the excess of energy required for the utilization of cow's milk was shown by a marked increase in the excretion of carbon dioxid and of water. There is comparatively little loss of energy due to muscular activity in young infants, and so this excessive loss is attributed to increased activity of the digestive functions. Rubner states that he believes the entire metabolism is affected in this case and not intestinal absorption alone. Rubner's metabolism investigation of a case of infantile atrophy showed that the infant was not able to digest and to absorb such large quantities of food as a normal infant. The food in this case was a modification of cow's milk with milk sugar. All the metabolism observations that have been made on atrophic infants in which some modification of cow's milk was used have shown a greatly diminished power of absorption for fats and proteids. Heubner[2] says that an atrophic infant requires more calories in its food per kilo weight than a normal infant in order to balance the extra energy lost in the intestines and absorbents during digestion. These observations coincide perfectly with the results obtained by clinical experience. It is generally considered that cases of infantile atrophy digest and gain better on cow's-milk mixtures when the percentages of fat and of proteid are low. This deficiency must be made up to some extent by increasing the carbohydrates; otherwise there is great danger that the mixture will contain too little nourishment for the infant's needs.

The fact that these infants absorb carbohydrates much better than they do fats and proteids probably explains the rapid improvement that sometimes follows the use of condensed milk and proprietary foods. In these preparations there is always a large proportion of carbohydrate material, and when milk is mixed with them it is usually so much diluted that the percentage of fat and proteid is low. By the addition of whey to milk mixtures a larger proportion of lact-albumin, compared to casein, can be obtained. This is desirable in some cases, but in my opinion most of the cases of atrophy that do badly on a cow's-milk mixture which contains a low percentage of proteid and of fat will do the same on a whey mixture. It has been shown that a relatively small quantity of proteid is required to repair tissue waste, so long as this small quantity is protected by a sufficient quantity of fat and carbohydrate. Metabolism observations seem to show that these infants possess the power of retaining proteid material to a greater degree even than average infants; and, in spite of the great loss of nitrogen in the feces, they evidently absorb enough to more than balance the tissue waste. The practical application of these facts in the use of cow's milk in infant feeding was long ago pointed out by Heubner. He thought that it was unwise to overburden the digestive organs with an excess of proteid material, and showed that more energy is required to utilize it, and that excessive amounts of it are or may become detrimental. This is especially true in infantile atrophy. Excessive amounts of cow's-milk proteid require more energy for their utilization; they are not well absorbed and resulting disturbances of function may very well interfere with the absorption and assimilation of the other ingredients of the food.

Atrophic infants cry a great deal more than do normal infants, and this is almost invariably accepted as evidence that they require more food. Further proof of supposed hunger is afforded by the fact that they do not gain in weight. The result is that when these patients are brought to the specialist for treatment he finds that they have been taking larger amounts of food at each feeding than an average infant of the same age would take. The digestive and absorptive powers of these infants are so seriously impaired that their tissues can not derive the needed amount of nourishment from the food which is supplied. When an excessive amount of food is given it defeats its purpose by impairing still more the powers of digestion and of assimilation. The results of treatment substantiate this. A majority of the cases of atrophy that recover on cow's-milk mixtures do so on relatively small quantities of a mixture weak in fat and proteid. The interval between each feeding in these cases should be shorter than for a normal infant of the same age, so that the deficiency in quantity each time is made up by an increased number of feedings. It is rarely necessary for such an interval to be less than two hours. By this means the digestive organs are not unnecessarily overtaxed and absorption is assisted. If improvement follows this method of treatment, it is necessary to keep pace with the improvement by changes in the strength or quantity of the food and by alterations of the intervals. This must be done cautiously to avoid upsets, which often follow imprudent changes in such cases.

With all these precautions, a great many cases of infantile atrophy do badly on mixtures of cow's milk. When this method of feeding succeeds the improvement is almost always slow. The progress is rarely constant. It is frequently interrupted by digestive disturbances and by periods during which there is little or no gain in weight. Under these circumstances a gain of three or four ounces each week may be regarded as encouraging. After a certain degree of improvement has occurred the progress is more rapid, but it is usually a question of several months of treatment before this condition is reached. During this time the milk mixtures have to be adjusted and readjusted many times. A limited number of emaciated infants improve at once on cow's-milk mixtures and gain rapidly in weight. Most of these cases are not, properly speaking, cases of infantile atrophy. Infantile atrophy is always associated with impairment of the digestive and absorptive functions. In the emaciated cases just mentioned the infants have been underfed, as a rule, not so much in quantity as that they have received too weak a food. In some cases, when they receive a more suitable mixture or amount of the cow's milk, they absorb it well and gain at once. These cases are cases of partial starvation and are not true cases of infantile atrophy. I have not relied solely on my own experience in making the above statements regarding cow's-milk mixtures, as any one may verify who cares to look over the literature on the subject. In my opinion, the method of feeding cases of infantile atrophy on cow's-milk mixtures is unsatisfactory in a majority of instances. The infants that do improve on cow's-milk mixtures do so because they have ultimately acquired a power to digest and to absorb this food. That is to say, the child is adapted to the food and not the food to the child.

Breast Milk.—The results obtained by feeding infants with infantile atrophy with human-breast milk have been perfectly satisfactory in my experience. The improvement in general condition and the gain in weight often begin within a few days, certainly within two weeks, and continue uninterruptedly, so far as they are dependent on digestion, as long as the breast milk is furnished in sufficient quantities. The gain in weight often exceeds that made by the wet nurse's own baby previously. Whatever function or functions have been impaired, they are evidently capable of the most rapid recovery. My experience warrants me in saying that when such an infant does not gain on the average at least an ounce a day, the fault lies with the wet nurse and not with the infant. The point which I wish to bring out clearly is that these atrophic infants are just as able to gain in weight as any normal infant when they receive a suitable food, and that breast milk is the only food that can be uniformly relied on to accomplish this result. It need hardly be emphasized that if a breast milk is of poor quality and insufficient in quantity it is no more suitable than any other poor food.

Naturally, when choosing a wet nurse, one is selected whose baby is doing well. It is not necessary that the age of your patient and the age of the wet nurse's baby should correspond. While taking breast milk, atrophic infants frequently have several more or less watery and undigested movements daily, without any evident bad results. It does not seem to interfere with the gain in weight nor with their general condition. This is peculiar to breast milk. Such dejections, if associated with other methods of feeding, would be followed by bad symptoms. It can not be denied that there are many objections to the use of a wet nurse. The serious ones, which refer to contracting diseases by the infant, can be avoided. The others must be tolerated to some extent. It must be remembered that in these cases the family of the patient are discouraged and worn out with the care of the infant, and when they see almost immediate and marked improvement they quickly become reconciled to inconveniences and are willing to put sentiment aside. Wet nurses can be controlled up to a certain point, and in this connection it is always a fatal mistake to encourage a belief by the wet nurse that she is indispensable. If she is not satisfactory, another can be procured. It is a fallacy to suppose that one woman's milk is any more suitable for a given infant than another woman's, provided both milks are good, that the quantity is sufficient, and that no mechanical hindrance exists in the one case and not in the other. If the wet nurse is made to understand that the place is hers only so long as the baby does well and she is satisfactory, it will make a difference in her behavior. I have rarely found it necessary to try more than two wet nurses in a given case, but now that I feel so certain that good results will follow this method of feeding in cases of atrophy, I should persevere until a suitable wet nurse was found, no matter how many I tried. The difficulty in making infants accustomed to the bottle take the breast is rarely serious. Persistently withholding other food for some hours will overcome their resistance. I have often found it necessary to allow the wet nurse to retain the charge of her own baby. In such cases the wet nurse's baby was fed on a mixture of cow's milk. It can not be denied that one would rather not be burdened with the wet nurse's baby, but, on the other hand, the care of her baby oftentimes reconciles her to the position and helps to occupy her time. The possibility or probability that she will nurse her own baby can be avoided without much trouble.

In my practice, when cases of atrophy are brought to me for treatment, I make it a point to express my views to the parents on the relative values of different foods. They almost always object at first to the employment of a wet nurse. Out of deference to their feeling and because it is always possible that whoever has had charge of the feeding previously has not made use of mixtures appropriate for such cases, I try mixtures of cow's milk for from two to three weeks and note the results. If the improvement is not satisfactory I recommend a wet nurse. I should omit the preliminary trial if the infant's general condition did not warrant it. Thus far I have never had occasion to regret employing a wet nurse. In many cases even a few weeks of the breast milk will produce such improvement in the weight, general condition and digestive powers of the infant that it will be able to adapt itself to cow's-milk mixtures if for any reason it becomes necessary or desirable to change.

THE ELIMINATION OF THE MOSQUITO.*

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I am quite sure that the members of the American Medical Association are familiar with the general literature regarding mosquitoes, and that a detailed account of the different varieties of these insects, their anatomy, method of development and the physiologic reason why they transmit disease is unnecessary. I have chosen, therefore, to present some practical facts which have a direct bearing on the work of exterminating the mosquito.

A decided and very satisfactory change has taken place in the attitude of the public toward this subject during the past three or four years. At first, efforts to exterminate the mosquito in this country were looked on mainly from a humorous point of view, and but little co-operation was extended by the laity. The public, however, has learned that the object of this work is not only to prevent the annoyance which the bite of this insect inflicts, but also to prevent the transmission of the disease, inasmuch as it has been proved that yellow fever is transmitted by the variety of mosquito known as the stegomyia, and malarial fever by the anopheles, and that so far as we know at the present time this is the only means by which these diseases are propagated.

In the extermination of the mosquito, it is imperative that we should be familiar with certain habits or conditions of this insect, otherwise our efforts are not apt to be attended with success. We must know, first of all, that mosquitoes propagate only in water. The importance of this fact is that it gives definite information regarding the situation of breeding places. We know that the eggs deposited on the surface of the water develop into the larvæ, commonly known as the "wigglers," then into the very transient stage of the pupæ, which in appearance may be regarded as a change in the shape of the larvæ, and that these are very soon transformed into the winged insects, and that from the deposit of the eggs to the development of the winged insect only from twelve to twenty-five days elapse. The latter period, as a rule, is required for the development of the anopheles or malarial mosquito. So far as my own investigations show, the propagation of the mosquito is, as a rule, most active in stagnant or offensive waters, or in that which contains considerable organic matter. Two instances have recently come under my observation where broken sewer pipes discharged into ground depressions, causing collections of offensive water. In the immediate vicinity of these were pools of water which were not contaminated; i. e., collections of rain water and not of offensive fluid. In both instances it was found that the contaminated water soon became exceedingly rich in mosquito larvæ, whereas in the other pools, within two or three hundred feet distant, which contained comparatively clear water, there were very few, if any, larvæ found.

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* This paper was prepared for the Section on Hygiene and Sanitary Science, but was not read, owing to the absence of the author.

Experiments made at the New York Quarantine Station have practically corroborated this. In these experiments large superficial wooden tanks were employed, in which different kinds of water were placed: i. e., rain water, hydrant water, water in which decomposed meat and fish had been placed and water containing other offensive material. These tanks were exposed, side by side, in a place infested with mosquitoes. In all the tests, it was shown that the deposit of mosquito eggs was always greater in the tanks containing the offensive water. Experiments on a smaller scale were also made. Exposed pails and glasses containing the different kinds of water already referred to were employed and the same results were noticed, viz., the deposit of eggs was much greater in offensive water. These experiments were repeated many times with the same result and fully confirmed the conditions, which I have found in mosquito-breeding districts. The experiments to which I have just referred were made with the culex, which is the commonest type of mosquito. There is, however, a variety of the culex known as the *Culex solicitans*, the striped-legged, Atlantic coast or salt marsh mosquito, which may be excepted from the above, inasmuch as it breeds in salt water or in salt or brackish marshes. Furthermore, the malarial mosquito, known as the anopheles, while it may be found breeding in offensive water, prefers small pools of water which are not so contaminated and which may be found in excavations containing surface water frequently having a green scum on the surface. I have found the anopheles larvæ in water contained in small ground depressions along the edge of swamps, also in unused receptacles which are found about houses. Occasionally the anopheles larvæ may be found in the same breeding pool with the culex; this, however, is not common. In a general way, it may be said that mosquitoes will breed in almost any receptacle and in the most unusual and unsuspected places, commonly in rain-water barrels, cisterns, cesspools, tin cans and other metal, glass and wooden receptacles, roof leaders, crotches of trees, etc. It is very necessary that physicians should be familiar with this fact.

It is a common belief that mosquitoes will not breed in salt marshes. My experiments show that in captiv- ferred to the fact that a variety of the culex, known as the *Culex solicitans*, or the Atlantic coast, striped-legged or salt-water mosquito, breeds in salt water or in salt marshes. My experiments show that in captivity the *Culex solicitans* will sometimes deposit their eggs on fresh water contained in glass jars; whether or not they will do this if they are free has not yet been fully decided. It is probable that along the Atlantic coast the salt marshes in many places furnish fully 80 per cent. of the mosquitoes in these sections. Dr. John B. Smith, State Entomologist of New Jersey, who has carefully investigated this variety of mosquito, states that it will deposit its eggs on the soft earth, in salt marshes along the sea coast, and that these eggs will remain intact for months until the swamps overflow and there is sufficient water to develop them into larvæ and subsequently into the winged insects. My experiments have partially confirmed this. I have confined the Atlantic coast or striped-legged mosquitoes in glass jars, in which was placed soft earth taken from salt marshes along the coast, and it was soon found that the eggs were deposited on this material. When salt water was added to this, after the eggs had been laid a number of days, the larvæ very promptly appeared. No proof, however, has ever been produced to show that the larvæ can be developed from these eggs without the presence of water. If the *Culex solicitans* be confined in water to which various amounts of salt have been added or in jars containing sea water, a deposit of eggs on the surface will soon be noticed; however, I have been unable to secure this result with any but the Atlantic coast mosquito.

A general impression exists that the life of the mosquito is very short, probably a few days only. While it is true that the mosquito is not a resistant insect and easily succumbs to all sorts of influences, it is a fact that it lives indefinitely. In the hibernating stage it is known that it may live from the fall to the following spring, and during the warm weather, or in its active stage, it may live a number of weeks. It is practically impossible to arrive at any definite conclusion regarding the life cycle of the mosquito, inasmuch as experiments do not furnish satisfactory evidence, for the reason that they can not be carried out under the same conditions that naturally exist. In other words, mosquitoes may die from captivity alone, or when they are unable to select the character of food which they require. It is safe to assume, however, that if they will live a certain period in captivity, they will live equally long when they are free to go and come as they please. There have been many investigations made and published on this point, and experiments have shown that in captivity mosquitoes will live for a number of weeks. I have kept them in wire cages containing nothing but sugar water for almost two months; furthermore, mosquitoes may be kept for a long period in captivity without food or water, provided sufficient air be present. Aside from the interest in securing definite knowledge in this direction, the length of time which mosquitoes may live in captivity has an important practical bearing, as it has been claimed that yellow fever may be transmitted from one place to another through the agency of the stegomyia, or yellow fever mosquito, confined in baggage, etc. In order to secure so far as possible definite information regarding this part of the subject, I carried out the following experiments: A number of boxes which could be compared to trunks, also canvas bags, such as sailors use to contain their clothing, and other receptacles were filled with clothing, blankets, bedding, etc. Mosquitoes were collected from a horse stationed in a thickly infested mosquito district. This was done by placing glass test tubes over the mosquitoes. When a sufficient number were secured the openings of the tubes were filled with light cotton plugs. The tubes were then introduced into the receptacles already described, the cotton plugs removed and the tubes gradually withdrawn and shaken sufficiently to drive out the mosquitoes. This method was employed in order to prevent any possible injury to the insect. In each experiment a record was kept of the number of mosquitoes in the different receptacles, and, although many experiments were made, it was found that in no instance did the mosquitoes in any receptacle live longer than thirty hours. I believe, therefore, that the treatment of baggage coming from yellow fever ports is unnecessary, provided the period of transit exceeds two days.

Considerable discussion has taken place among those who have investigated the mosquito regarding the origin of the first crop of these insects, which appear in the spring or summer of each year. As I have already stated, Dr. John B. Smith claims that the egg of the *Culex solicitans*, or striped-legged or Atlantic coast mosquito may be deposited on the moist earth, in brackish or salt-water swamps, and that in this situation, he believes, they will remain dormant or hibernate until the following spring, when an overflow of water takes place and the eggs become active and are developed into larvæ and subsequently into the winged insects. It has also been shown that larvæ will hibernate and that during the winter they may be found in ice and after being thawed out become active. The latter phenomenon has come under my notice, but I have seen no instance in which larvæ after being frozen and thawed out have developed into winged insects. This may occur, but I am sure that it is uncommon. Although the eggs of the *Culex solicitans*, Atlantic coast or striped-legged mosquitoes, may hibernate during the winter, and be the origin of the first crop of this variety of the mosquito in the spring or summer, I am satisfied from my own experiments that the first crop of mosquitoes which come to us each year, particularly in inland towns, or about fresh water supplies, is due to the hibernation of the winged insect. It is common experience with all who live in mosquito-infested districts frequently to find these insects in midwinter, particularly in overheated rooms, etc. It is evident that when the cold weather approaches the mosquito instinctively seeks some protected place, such as crevices in the interior of tree stumps, cellars, barns, interior of houses, etc., and, while there are probably but comparatively few which do not succumb to the cold weather, sufficient survive to perpetuate the species during the following year.

Another very much disputed point regarding the mosquito is whether or not they go far from their breeding places. While there is indisputable evidence that mosquitoes at times are found far from home, there is also the best evidence that they do not go willingly. One of the most satisfactory instances that I know of, which proves that they are found some distance from their breeding place is that furnished by the New York harbor pilots, whose boats are frequently anchored along the Jersey coast, three or four miles from land—occasionally they become suddenly infested with mosquitoes. The pilots are unanimous in their statement that when this occurs there is always a breeze from the shore. While indisputable evidence has been presented to show that mosquitoes go far from home on land, as well as at sea, there is good reason to believe that this does not commonly occur. It is the opinion of all who have carefully studied this insect that they do not willingly go far away, and I believe that we are justified in assuming that if a section of country be infested with mosquitoes a breeding place exists in the immediate vicinity. I speak emphatically in this matter, as many times after it has been positively stated that mosquitoes must have come a long distance, it has been found that breeding places existed in the neighborhood, and there is no doubt that the difference of opinion which existed on this subject is largely due to the fact that local breeding places are frequently overlooked. When it is remembered that the female mosquito will lay three or four hundred eggs at one time, and that it only requires from twelve to twenty-five days for these eggs to develop into the full-grown winged insect, it will be better understood how a small receptacle will breed a large number of mosquitoes. Therefore, before hunting for the breeding places of mosquitoes at some distance from home, we should first examine every detail of our own premises to ascertain if receptacles for the propagation of this insect can not be found.

These breeding places are often discovered in the most unsuspected locations. In connection with this and as an item of interest, I will refer to an investigation made two or three years ago. My attention was called to a number of cases of malarial fever occurring in two or three houses adjoining each other. Anopheles were found in the bedrooms of these patients during the evening. In close proximity to these houses were found numerous pools of water, and, although each one was examined with great care, no anopheles larvæ were found. The most careful inspection was made of every cistern, rain-water barrel, etc., in the neighborhood with the same result. This lent some color to the belief that the mosquito in this instance might have come from a distance. Further investigation was made, however, and in the garden of a house in the rear of those containing the cases of malarial fever, and which had been vacated for some time, was found an old cake pan almost entirely covered by long grass, and in this was found a large number of anopheles larvæ. An ordinary inspection would not have discovered this receptacle.

As a résumé of what we know at the present time, it may be said:

First, mosquitoes do not propagate without water, and, as a rule, so far as the culex is concerned, the more offensive the water, the greater the propagation. Although the anopheles or malarial mosquito will propagate in offensive water, sewerage, etc., they are more apt to be found in small collections of water, about fresh water swamps or in small receptacles about the house. In large ponds or pools of fresh water, particularly those which contain small fish, which prey on the larvæ, mosquitoes of any variety are not usually propagated, but the little pockets of water along the edges of these ponds or in other places frequently act as breeding places. We also know that a variety of mosquito known as the *Culex solicitans*, or the striped-legged, Atlantic coast or salt marsh mosquito, breeds in salt water or in salt marshes. Mosquitoes breed in cisterns, rain-water barrels and cesspools in enormous number; other receptacles about the premises, no matter how small or where they are situated, may also act as breeding places. It is about our own homes, therefore, that the examination should first be made to ascertain where the propagation of this insect is carried on.

Second, the life of the mosquito is not confined to a few days, but under various circumstances may extend over a period of weeks or months.

Third, the first crop of mosquitoes which appears in the early summer of each year, particularly in inland towns, is principally due to the deposit of eggs which have hibernated during the winter months. These, of course, are comparatively few in number, but are sufficient for the purpose above referred to. The variety of the mosquito known as the *Culex solicitans* is probably largely perpetuated by the hibernation of eggs, which are deposited in the soft earth, in salt marshes along the sea coast, and remain dormant during the winter; when the warm weather returns and the marshes are overflowed with water, these eggs become active and develop into larvæ; subsequently into winged insects.

Fourth, although there is conclusive evidence that mosquitoes are sometimes carried long distances from home, they do not willingly go far from their breeding places, and it may be assumed that if a section is infected with mosquitoes breeding places exist in the immediate vicinity. It is probable that an exception may be made in the case of the *Culex solicitans*, or salt-water mosquito, which appear to go further from home than other varieties of the culex or the anopheles. There is good reason to believe, however, that they do not breed away from the salt marshes or in collections of fresh water.

Efforts to prevent the propagation of the mosquito consist in abolishing or removing receptacles which contain water. This applies to both large and small ground depressions, swamps, etc., and to portable and stationary receptacles about buildings. The scientific, practical and radical method of removing water in ground depressions is by drainage or filling in, and the use of petroleum oil in these instances can not be regarded as a substitute for this purpose and should only be used as a temporary measure. In mosquito-infested districts our first action should be to remove, so far as possible, from dwelling houses and other buildings, all sorts of metal, glass and wooden receptacles for water. Cisterns and rain-water barrels should be supplied with tight-fitting covers; by having the center of these covers constructed of wire netting sufficient air is admitted. Roof leaders should be kept properly graded; otherwise parts of them may act as breeding places for the mosquito. If ground depressions either about the premises or in the neighborhood can not be drained or filled in, petroleum oil may be used as a temporary measure. The crude petroleum is probably superior to the refined oil and should be used in the proportion of one pint of oil to a water surface of about twenty feet in diameter—even a less amount of oil may be effective. This procedure should be repeated every two weeks. The method by which the oil destroys the larvæ or wigglers is probably not by a toxic effect, but by a mechanical one. The larvæ must come to the surface of the water for air at least every two minutes. If watched carefully it will be seen that the culex, or common variety, approach the surface of the water at right angles, with the tail uppermost, the air being taken in at this end, which is extended sufficiently above the surface. The anopheles larvæ may be distinguished from the culex at this stage, inasmuch as they do not lie at right angles to the surface of the water, but parallel to it, and receive the air by projecting the head above the water instead of the tail. It is probable that the oil thrown over the surface plugs up the delicate respiratory apparatus of the larvæ and practically suffocates them. This is largely corroborated by experiments. If a small amount of petroleum oil is thrown over the surface of the water in a glass jar containing larvæ, the latter will succumb in from ten to twenty minutes; toxic agents do not kill them with such rapidity, as careful investigation has proved. The odor of petroleum oil is either very unpleasant or injurious to the winged insect. It has frequently been noticed when petroleum has been used in swamps in large quantities that the number of mosquitoes abruptly diminishes.

In treating large bodies of water with petroleum, the ordinary garden sprinkling pot is a good and practical method of distributing it. Experiments made with permanganate of potassium, bichlorid of mercury, sulphate of copper, carbolic acid, etc., have shown that these agents are greatly inferior to petroleum for this purpose. Their action is slow, and the mosquito larvæ live in comparatively strong solutions. For instance, larvæ have remained active from one to three days in a 1/1500 solution of bichlorid of mercury. Even comparatively strong solutions of carbolic acid or permanganate of potassium do not destroy them for some time. In some very exhaustive experiments made with sulphate of copper and lime for the destruction of mosquito larvæ,[1] I found that these agents did not destroy the mosquito by a toxic effect, but slowly by clarifying the water and precipitating the organic matter which it contained, thereby removing the nourishment from the larvæ. Furthermore, it must be remembered that pools of water throughout the country may be used for drinking purposes, particularly by animals, and that the use of such agents as bichlorid of mercury, carbolic acid, etc., are, therefore, unsafe. On the other hand, the petroleum oil is cheap, practically harmless and destroys the larvæ at once, and so far as we know at the present time is superior to anything else for this purpose, provided proper drainage or filling in can not be effected.

All varieties of mosquitoes are most active after sundown. This we know not only from the annoyance which they cause us, but from the indisputable testimony presented by medical experiments with the malarial and yellow fever variety. During the day, when the mosquitoes are generally inactive, they select for their abiding place the high grass and underbrush. Therefore, this material should be removed if present about the premises in mosquito-infected districts.

The points to which I have referred in this paper constitute the bulk of what is at present really known regarding the habits of the mosquito and the means of exterminating them. Many investigations, however, are now in progress in this country, and there is good reason to believe that much valuable information will be added to our knowledge during the next year.

ANKYLOSTOMIASIS OR UNCINARIASIS.*

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GRENADA, BRITISH WEST INDIES.

This disease, an endemic anemia caused by the parasite, *Ankylostoma duodenale* or *Uncinaria duodenalis* and *Uncinaria americana* (Stiles), is a dangerous one both to the individual and to the community in general, leading as it does in individual cases to degeneration of important organs, resulting probably in death and to widespread infection and deterioration among the community in general.

The parasite is now too well known to need a full description; in Grenada, B. W. I., the large majority of cases show the old world parasite, viz., *A. duodenale* but in many many cases I have come across the variety described and named by Stiles, *Ankylostoma* or *Uncinaria americana,* the new world variety. The chief differences between these two species lie in the size and the armature of the mouth; the *Ankylostoma duodenale* being larger with a heavily armed mouth, viz., two pairs of hook-like ventral teeth and one pair of dorsal, the *Uncinaria americana* being smaller with 2 pairs of ventral plates or lips and one dorsal pair (Stiles). Microscopically the worms appear as short threads white or gray in color, according to the contents of the genital organs, usually I have found that the white are males and the gray colored ones females with ova; I have only occasionally seen them blood red.

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[1] Medical Record, Jan. 21, 1905.

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

DEVELOPMENT.

The ovum develop in earth under favorable conditions of humidity and temperature and shade. I have found that a certain proportion of water is necessary, in undiluted feces the larvæ appear but soon die; in feces diluted with much water, in a few cases of mine the larvæ appeared; but did not live, but in the majority the ova did not develop. The ova developed at the ordinary temperature in this island, viz., 80 to 90 F., but the larvæ are killed and the ova prevented from developing when placed in ice. Direct exposure to the sun light killed the larvæ when these had developed and also prevented the ova from developing so that a certain amount of shade is required for the development of the larvæ from the ova. Each ovum only produces a single larva and this never takes place within the host but outside so that an increase of adult worms in any particular case is impossible without reinfection from without; this point is therefore of great importance both in the treatment and in the prevention of this disease.

MODES OF INFECTION.

Two methods of infection are possible: 1. By the ingestion of the larvæ in the food or water; 2, by penetration through the skin and subsequent migration to the intestine where the embryos mature into the adult worms.

In Grenada the class found to be chiefly affected with the disease are the laborers and agriculturists, consisting chiefly of negroes, East Indians and poor whites. The huts occupied by them are small, usually raised a few feet off the ground in most cases, entirely surrounded with vegetation almost up to the walls, in this island being chiefly bananas and cocoa and other trees planted to protect the growing cocoa. Sanitation is unknown among them and latrines never used, the feces being deposited on the earth among the trees so that in time the soil, around these huts and also in the fields where they work, becomes heavily infected. During the rains, the mobile larvæ also ova are washed down into the pools, shallow wells and streams and as most of the villages depend on such for their drinking water, it can be readily understood that infection in this manner, viz., by ingestion, can take place; helped to a very great extent by the dirty habits of the people such as eating with soil-stained hands, improperly washed vegetables and fruit and as above stated drinking water infected with the larvæ and containing a large quantity of earthy matter in suspension. I am of opinion that in this island at any rate this method of infection takes place as the drinking water contains to my knowledge both the living larvæ and earthy matter in suspension, so that although many observers have remarked and I have proved to myself that the embryos die on drying and that the earth taken in must be moist yet in the above condition we have both earth and moisture. True geophagy is not practised to any extent in this island, chiefly among children, so that a few cases may be set down as due to this method of infection.

The second method of infection, viz., penetration of the skin by the larvæ, is without any doubt the true one as proved by the experiments of Looss and others. In every case treated by me I have always elicited the fact that the patient has suffered from a form of dermatitis known in this island as "chauffie" or "grounditch" prior to his anemia, the period ranging from 3 months to a year or two, and in advanced cases, they have had attacks every year especially during the rains. I have had 10 cases of this dermatitis under treatment in the hospital and the following were the chief characteristics; in cases of recent infection, scattered vesicles were seen, many of which broke down, leaving small ulcers, usually affecting the lateral side of the feet and the urb of the toes; in older cases the ulceration was more extensive, deep cup shaped ulcers being seen on the dorsum and lateral parts of the foot and between the toes. Some of these cases resisted treatment for some time, although in the early cases they healed quickly. These cases remained under treatment and in about 3 to 6 months from the date of the first appearance of this dermatitis they complained of uneasiness in the epigastrium, in some cases actual pain and other dyspeptic symptoms and on my examining the feces later I found the characteristic ova, thus showing that this dermatitis known here as "chauffie" is caused by the penetration of the skin by these larvæ. This skin infection is wide spread in the island, especially on the estates and among the villages, and nearly every adult laborer has had it and also the children who are allowed to roll about and play in the earth around the huts.

The disease chiefly affects the country and very few cases are seen in the larger towns and this fact is easily explained as follows: No sanitation in the villages, feces deposited on the earth among the bananas and cocoa trees; the ideal temperature, shade, humidity and decaying matter being afforded by these groves for the development of the ova and the poverty and filthy habits of the class as a whole, necessitating walking barefooted, infecting himself and then carrying it to his hut and infecting the children in turn. With regard to immunity from this disease, there is none; all classes may become infected but the poorer classes are more liable not only from the nature of their work, poverty, but also to the inadequate diet both in quality and quantity.

SYMPTOMATOLOGY.

Within the past year, April, 1904, to April, 1905, I have had 215 cases under my treatment and observation at the Colony Hospital, these cases were simply admitted as they applied and a large number also suffered from other complications. I found that uncinariasis could be divided into two distinct classes, (a) acute, and (b) chronic, the acute class being further subdivided into (1) mild cases and (2) moderate. On a microscopic examination of the feces the ova can be readily detected but the number present in the field is no guide to the extent of the infection, in many cases, although if large numbers are seen it is probable there are a large number of parasites but the reverse is not necessarily correct. The mere presence of this parasite does not constitute the disease and these early cases are only of importance from their being a source of danger to others and to the district or village in which they reside.

Mild Cases.—Pain or uneasiness in the epigastrium often relieved by but usually increased by the ingestion of food. Appetite lost but in many cases ravenous. Frontal headache, dizziness and palpitation, breathlessness on exertion, and indisposition to do any work, either physical or mental. In these cases anemia was not marked and pallor was only slight, being yellowish in whites and muddy in the colored races.

Moderate Cases.—In these cases all the above symptoms were pronounced, pallor is more marked and the anemia prominent. The mucous membranes and conjunctivæ pale, skin dry, appetite in the majority of cases lost, nausea and vomiting present in many cases, pain in the epigastrium. Headache is very severe and continued, referred chiefly to the frontal region, often temporal, vertigo and extreme tinnitus present. Palpitation is severe and breathlessness ensued on the slightest exertion. Great languor and lassitude is complained of, and fever of an irregular, intermittent type is present with pains in the joints.

Chronic or Very Advanced Cases.—Here the anemia is intense and pallor very extreme, the patient having an icteric tinge of the sclera. Edema of the feet and ankles is present with general anasarca in the majority of cases and in 8 cases under treatment ascites was present. The digestive symptoms have changed, either becoming more pronounced, with vomiting on ingestion of food, or in many cases they disappear altogether. Precordial pain and pain in the chest is complained of, palpitation is severe and dyspnea comes on with the slightest exertion, the pulse is weak and compressible and pulsation of the large veins of the neck is noticed. Vertigo and tinnitus is extreme, this latter symptom often causing sleeplessness. Dimness of sight is complained of and in many cases the pupils are noticed to be dilated. The urine is normal in quantity, usually pale in color and in only 3 cases was albumin present. On auscultation bruits are heard over the veins and there is a well marked murmur on the valve areas and the heart itself is often dilated with the apex beat depressed. The muscular system is weak although the muscles appear plump and well nourished and the patient is absolutely incapacitated from any kind of work. The patient is listless and apathetic and the temperature is often raised but in the majority of cases it is subnormal.

Digestive System: Stomatitis.—In two cases only have I seen a stomatitis affecting the tongue and mucous membrane of the mouth and both these cases were in the advanced stages. I do not attach any importance to it as I have not seen it present in other cases. Pyorrhea alveolaris is very common in this island among the laboring class, also caries of the teeth and may be noticed in all the cases of the disease, but I do not see any connection between them.

Tongue.—In the acute and chronic cases, the tongue is very pale, almost white in color, usually coated but often red and raw looking and denuded of epithelium. I have remarked a peculiar pigmentation seen in every case except the poor whites. It consists of a black or blue black pigmentation, in minute spots either singly or in patches usually on the tip and sides of the tongue; it is not seen, as I mention above, in cases in whites but only in the pigmented races, negroes and East Indians; I am of opinion that there is some connection between this pigmentation and the disease but so far I have not been able to establish it. The digestive symptoms are very similar to those due to dyspepsia, and often in the mild cases are simply treated as such, the feces not being examined with the result that the case steadily progresses instead of improving. Appetite is variable, being lost in many cases but ravenous in others; pain or uneasiness in the epigastrium is a well marked symptom and is likened by the patient to the sensation of having a stone in the stomach; this symptom is usually increased by the food taken by the laboring class here which is of poor quality and very coarse and bulky, quantity instead of quality being preferred. Flatulence and palpitation is very common and the bowels are usually constipated, only in the very advanced cases have I seen diarrhea.

Circulatory System.—On inspection, the apex beat is found to be pronounced, especially if the patient is made to walk a little and is usually displaced downward and to the left, but in many of the chronic cases it is feeble. On percussion, the cardiac area is found to be enlarged in the second class of cases and in the chronic cases dilatation is present. On auscultation bruits are heard, very marked in the third left space and in 8 cases under my treatment they were practically organic, fatty degeneration and dilatation having occurred. (Two of these cases died in hospital and enabled me to make an autopsy.) Precordial pain and pain in the chest, palpitation and dyspnea are present and are very distressing symptoms in chronic cases. Vertigo and tinnitus aurium are also other well marked symptoms especially in the later stages and are no doubt adjuncts in causing the inability of the patient to get about and in producing the sleeplessness complained of in many cases.

Nervous System.—Symptoms pointing to this system are languor and lassitude, mental apathy, insomnia and the severe and continued headache, usually frontal often temporal and sometimes the pain is referred to the whole head. Numbness of the feet and formication are complained of as well.

Integumentary System.—The skin is harsh and dry, and in the chronic cases general pruritus is often a constant and very annoying symptom, atrophy present in chronic cases.

Feces.—In all the above cases I havenot seen any blood in the stools, but in 6 cases I have noticed blood stained mucus; but it is not a constant symptom. I have mentioned that constipation is usually complained of but diarrhea may occur. Miscroscopically the ova are readily seen, in conjunction with those of *Ascaris lumbricoides, Tricocephalus dispar* but I have also found them in conjunction with those of *Oxyuris vermicularis* and in 20 cases *Rhabdonema intestinalis* was present.

Blood Examination.—On a microscopic examination, the point that is noticed is an increase of the eosinophiles, but on making a count there is no marked leucocytosis, the percentage of hemoglobin varied but there was a slow but steady decrease as the disease advances, but it was also noticeable that after treatment and when the patient began to improve the red corpuscles increased but the per cent. of hemoglobin often fell before it began to rise.

The following table shows the percentage obtained by me from blood counts in 20 cases: Eosinophiles, 18; polymorphonuclear, 55; large lymphocytes, 8; small lymphocytes, 17; other cells, 2; total, 100. Hemoglobin varied from 8 to 40 per cent.

Diagnosis.—The diagnosis of the disease depends not so much on the symptoms, which, although they may be well known, are very often mistaken for those of dyspeptic troubles in the mild cases and of heart disease in the advanced cases, but on the discovery of the ova in the feces. The ova are very characteristic and can not be mistaken for those of any other parasite as they are unstained by bile, while those of the other parasites are usually stained yellow. The ova of the *Oxyuris vermicularis* may be mistaken by beginners for that of *Ankylostoma,* but a little practice enables them to be easily distinguished. The *Ankylostomum* ova are perfectly clear and chitinous, shelled with a granular grayish vitellum, usually segmented into four, sometimes six or eight parts; those of *Oxyuris* are smaller and the vitellum is not segmented but fills up the entire shell. In many cases the temperature is of an irregular intermittent or remittent type, patients complaining that the fever comes on every night or morning, and this fever often causes the disease to be mistaken for malaria. A microscopic examination of the blood soon clears this point, although malaria is very often, especially in certain districts of this island, a complication of the disease, and when the case is treated as one of malaria without an examination of the feces having been made, the practitioner is surprised to find that quinin has, seemingly, no effect on the temperature. (I had a case of this nature sent into hospital—vide report on case attached.)

MORBID ANATOMY.

The following data are taken from four autopsies made by me at the hospital on bodies of patients who died from advanced uncinariasis. One died suddenly (forty-eight hours) on the second day after admission (this case I have described separately, with a complete history).

General Condition.—The bodies appeared plump and well nourished, the skin was harsh and dry, of a dirty, muddy color, edema of the feet and ankles with ascites was present, and there was serous effusion into the various cavities, viz., pericardium, pleuræ and ventricles of the brain; subcutaneous fat was abundant and yellow in color.

Heart.—The heart was found to be enlarged, fatty degeneration and dilatation being present with incompetence of the valves; the heart walls were thin and flabby, and patches of atheroma were present in the aorta. The cavities were found filled with soft dark clots.

Lungs.—The lungs appeared normal, although pale in color, but in one case advanced pulmonary tuberculosis was present and was no doubt the cause of death. Pleural cavities contained about a pint of clear yellowish fluid.

Spleen.—This organ appeared normal in 2 cases, but in the others was enlarged and fibrous, probably due to malaria, as both cases came from a very malarious district.

Liver.—This was pale slightly enlarged in all the cases; fatty degeneration was present and the tissue very friable.

Kidneys.—In one case the kidneys were small, pale, capsule adherent (chronic interstitial nephritis), but in the others they appeared normal, although pale in hue.

Stomach.—This organ showed signs of chronic catarrh, in 2 cases dilatation was present, but I did not find any uncinaria in the cavity of the organ.

Intestines.—The parasite was found in large numbers, were chiefly in the upper part of the jejunum, but also in the duodenum. The parasites were lying free in the lumen of the bowel, but a great many were attached to the intestinal wall. There was a large quantity of mucus present in the intestine, in which the worms were lying embedded. The mucous membrane should show minute hemorrhagic spots, as well as pigmented spots. In one case the wall itself was very thin. There was no blood in the intestines.

Brain.—The brain showed anemia with effusion into the ventricles of a pale yellowish fluid.

The above four cases were the only ones that died and enabled me to make an autopsy. The majority of the cases made rapid and uneventful recoveries, but a few of the very advanced cases were slow and remained in hospital over three months before being discharged.

PIGMENTATION OF TONGUE AND ITS PROBABLE CAUSATION.

In every case of ankylostomiasis under my treatment, with the exception of the poor whites who are of European parentage, the pigmentation of the tongue is seen. It consists of minute black, blue-black or brown spots, usually on the lip and sides of the tongue; sometimes the pigmentation is seen in larger areas. The colored races in this island, viz., the negro, East Indian and their descendants, show this pigmentation in every case of uncinariasis and it is especially marked in the chronic cases.

Pigmentation of the skin and mucous membranes may be derived either from the blood or bile or from external agents. In these spots the pigment is deposited chiefly in the mucosa of the papillæ in its lower layers, but also in the upper layers. There is no doubt that disturbed innervation plays a part in producing this result, as is seen in the bronzing of the skin in Addison's disease, which is probably due to inflammation of the abdominal sympathetic. The pigment melanin closely resembles hematin, one of the constituents of the hemoglobin, in its composition, hence we can conclude that it is derived from that source. Its presence is usually associated with two very opposite conditions of nutrition, being sometimes an accompaniment of tissue degeneration and at others of active trophic changes. It is well known that the chlorophyl of plants and the hemoglobin of the blood are intimately associated with respiratory changes. In the majority of cases where pigment is found some concomitant blood change is also present, as, for instance, in malaria, pigment is formed from the destruction of the red corpuscles and deposited in various organs of the body, and without doubt deposition of pigment is very probably under the control of the sympathetic system.

In uncinariasis we have a toxin produced by the parasite and which is the true cause of the profound anemia, blood and nervous changes. Here, therefore, we have both the necessary factors for the production of pigmentation, not only on the tongue and mucous membranes, but elsewhere, viz., (1) blood changes in which the hemoglobin of the red corpuscles is broken and disintegrated, as shown in the reduction of the hemoglobin percentage as the case advances, and (2) disturbance of the nervous system by the same toxin which affects all centers sympathetic included, as evidenced by the symptoms.

Dr. Laycock has observed that pigmentation may be regarded as having reference to the excretion of carbon after it has served its purpose in the tissues, and hence, pathologically, pigmentation may be taken to be expression of (1) imperfect oxidation of the carbon so that it is not eliminated as carbonic acid from the body, (2) excessive production of carbon from highly carbonaceous food, (3) pigment resulting from the disintegration of the hemoglobin of the red cells. In uncinariasis all three of these factors are present, produced by the toxin excreted by the parasites, (1) diminished oxygenating power of the blood from destruction of the blood cells so that carbon waste is not got rid of, (2) presence of hematin from disintegration of the hemoglobin, and in this island (3) we have the third factor, viz., excess of carbonaceous food, as the laborers all live on coarse, bulky food, the quantity rather than the quality being the chief item of importance. The class of people in whom the disease is chiefly seen are the colored races, and, therefore, more liable to pigmentation than those races in whom pigment is not usually present in the skin. From the above facts I am of opinion that this pigmentation of the tongue and buccal mucous membranes and mucous membrane of the intestine has some connection with the disease and may be taken as of diagnostic value, as I have never failed to find the ova and the other symptoms of the disease present in any case which showed this pigmentation.

Another view of its causation may be taken in the dermatitis or "chauffie" affecting the laboring class in this island and which without doubt is the true method of infection, pigmentation of the skin affected takes place so that in this island, where the class affected are dirty in their habits and careless as to what they eat or drink, unwashed fruit and vegetables, muddy drinking water is one method of infection, as during the rains the water supply, which usually consists of shallow wells and ponds, is contaminated to a large extent, and as the larvæ do not take very long to penetrate the skin, as seen from Claude Smith's experiments, it may be possible that, when taken into the mouth, they make their way more easily and quickly into the mucous membrane, and that these pigmented areas are the points of their entrance.

Case 1.—A. J., aged 19, unmarried, living with his parents, laborer in cocoa estate. Admitted to Colony Hospital, Feb. 2, 1905.

History.—Patient has been ill for the past year with general weakness as he termed it, unable to do much work owing to breathlessness and palpitation. Three weeks prior to admission he had a severe rigor, followed by fever and slight perspiration; fever comes on every day. Has lost flesh and is emaciated. Complexion muddy, lips and buccal mucous membranes very pale, tongue shows minute pigmented spots on lip and sides. Conjunctivæ very pale and scleræ have an icteric tinge, appetite very poor, can only take fluid nourishment, pain and tenderness in epigastrium, nausea and vomiting after food, bowels constipated and have usually been so for the past year. Skin harsh and dry and does not perspire very much, itching sensation over the whole body. Precordial pain and pain in the chest complained of, palpitation marked, with dyspnea in exertion. Dimness of sight, with severe and continued frontal headache and tinnitus aurium. Vertigo and sleeplessness present. Very weak and has not left his bed for the past three weeks. Pulsation of veins in the neck, apex beat depressed and to the left; marked bruit in third left intercostal space. Pulse soft and compressible.

Examination of Feces.—Ova of uncinaria present in large numbers with those of *Ascaris lumbricoides* and *Tricocephalus dispar*. No blood in the stools.

Examination of Blood.—Malaria Estivo-autumnal parasite present. Eosinophiles, 20; polymorphonuclear, 58; large lymphocytes, 10; small lymphocytes, 12.

Temperature on admission, 102.6, rising on the day after to 104 degrees. No marked rigor or diaphoresis.

Diagnosis.—Ankylostomiasis or uncinariasis. Complication, malignant malarial fever.

Treatment.—Saline aperient every morning. Hypodermic injection of quinin bihydrochlor. grs. 5 every morning at 10 and in the evening. Diet: Milk, beef tea, arrowroot, etc.

Course.—Temperature still continued. February 17 blood re-examined and found free of malarial parasites. Temperature, 99.8. Feces contained the ova in numbers. February 20, 120 grs. thymol given in cachets of 40 grs., followed by a saline aperient, four hours after the last dose, stools carefully washed and found to contain large numbers of worms. Temperature reduced, but still above normal. Thymol repeated February 23 and stools examined worms still being passed.

Repeated thymol February 26 and 28, and after the last dose only a few worms (6) were found in the last stool.

Feces examined March 2, no ova present, but thymol repeated once more and a week later they were again examined, but no ova present, similarly on the 17th.

The diet was now changed, as appetite had increased, after the second dose of thymol the headache disappeared and the tinnitus was very much decreased, and patient slept well at night. He was now put on the following mixture as well:

℞.	Tinct. ferri perchlor................	ʒiiss	10
	Liq. arsenitis hydrochlor..............	ʒi	4
	Mag. sulph	ʒiv	15
	Syrupi aurantii	ʒiss	6
	Aquæ q. s. ad.......................	℥viii	240

M. Sig.: One tablespoonful three times a day after meals.

Blood examination, March 2: Eosinophiles, 15; polymorphonuclear, 65; large lymphocytes, 10; small lymphocytes, 7. Hemoglobin percentage, 22.

Blood examination, March 31: Eosinophiles, 13; polymorphonuclear, 45.5; large lymphocytes, 14.8; small lymphocytes, 26.2.

Patient is doing well, has gained weight and flesh, all symptoms have disappeared, skin moist. Rapid and uneventful convalescence.

Case 2.—R. G., aged 36, married, children, laborer.

History.—Patient has been ill for past six years, gradually getting worse each year; weakness, fever, breathlessness and palpitation, disinclination or inability to work. Husband and children also affected similarly. Has had "chauffie" very often, particularly after or during the rains. Appearance plump and well nourished. Very anemic; has been very ill for the past month; bedridden; brought to hospital in a chair.

Examination.—General anasarca very marked, ascites developed, face and scalp puffy and edematous. Says she never perspires, appetite lost, pain and tenderness in epigastrium, vomiting after food. Tongue very pale and white, teeth indentalious on tongue, numerous minute pigmented spots on lips and sides, with bluish streaks on side as well.

Superficial veins of abdomen distended, diarrhea, feces yellowish brown, no blood; on examination ova of ankylostoma and ascarides were seen. Liver enlarged, abdomen tender on pressure, ascites present. Precordial pain and pain in the chest very severe, dyspnea extreme, cough troublesome, bases of lungs dull on percussion.

Extreme vertigo, marked tinnitus aurium with severe continued frontal headache, sleeplessness and has had fainting attacks.

Vision dim, great weakness. Heart markedly dilated, with bruits, pulsation of veins in neck; apex beat full and diffused. Pulse 110, weak and dicrotic. Urine normal, patient quite sensible, but prefers being left alone. Temperature on admission 97.8.

Diagnosis.—Ankylostomiasis, chronic.

Treatment.—Milk and beef tea, stimulants.

Patient did not do at all well, and died suddenly on the second day after admission.

Blood Examination.—Eosinophiles, 8; polymorphonuclears, 56; large lymphocytes, 6; small lymphocytes, 30. Hemoglobin, 10 per cent.

Morbid Anatomy.—Lungs: Very pale, but otherwise normal; bases edematous and pleural cavities contained about 2 pints of straw-colored fluid.

Heart: Pericardium contained 4 ounces of serous fluid. Heart very much enlarged and dilated; cavities filled with soft dark clots. Fatty degeneration present in the walls; valves inefficient.

Liver: Enlarged, pale and fatty degeneration present. Abdomen contained large quantity of ascitic fluid.

Spleen: Slightly enlarged, pale but otherwise normal.

Intestines: Jejunum and duodenum both contained large quantities of the worms, most of which had dropped and were lying in the lumen of the bowel. Mucus present in large quantities. Large intestine contained dark yellowish brown fluid feces. Intestinal wall thin and atrophied in parts, presenting large numbers of minute hemorrhagic and pigmented spots.

Stomach: Signs of chronic catarrh present; no worms in the cavity itself.

Kidneys: Pale and otherwise normal.

Brain: Anemic and ventricles filled with fluid. Pia mater stripped easily off the cortex, serous fluid beneath it filling the sulci.

Death in this case was due to mitral inefficiency, resulting from dilatation of the heart caused by chronic uncinariasis or ankylostomiasis.

TREATMENT.

Thymol is the drug employed by me and I have had the very best results with no single ill effect even in children. The dose usually given by me varies with the age of the patient and also his general condition; it ranges from 10 grains to a child to 40 grains for an adult at a single dose.

The following is the procedure adopted by me at the Colony Hospital: The patient is carefully prepared for three or four days after admission, the bowels are kept active by saline aperients administered every morning in sufficient dose to cause one evacuation, the diet is light and easily digested, viz., milk, beef tea, arrowroot, etc., with pepsin if required. In very advanced cases with cardiac troubles, stimulants and cardiac tonics administered. The chief object in the administration of the aperient being to get rid of the mucus with which the intestine is often loaded and in which the parasites lie buried.

At 10 p. m. on the night prior to the administration of the thymol a dose of saline aperient is given and no food except a pint of milk given to the patient next morning and two hours afterwards the first dose of thymol is given. I give it in the form of cachets each containing five grains for a child and 40 grains for an adult and one cachet is taken every hour till 15 grains are given to the child and 120 grains to the adult. In old people and very advanced cases in adults I usually give 30 grains instead of 40 grains. No food is allowed the patient and four hours after the last cachet is given a saline aperient is given and the patient allowed his diet. The stools are collected and carefully washed and invariably show a large quantity of worms, in the case (1) described by me 500 worms were passed after the first administration of thymol. The above treatment is carried out on three alternate days, occasionally an interval of four or five days is allowed in debilitated cases; the feces are carefully examined for ova a week afterwards and usually found free of ova. The feces are again examined two days before the patient is discharged and it is my invariable practice to give another single dose of thymol and to carefully examine the stools again. The after-treatment of the case consists in the administration of tonics, chiefly iron and arsenic, often combined with strychnin; the diet is increased, but is still one which is easily digested and nourishing and usually the patients seek their discharge in from a fortnight to three weeks after the feces are free of ova; and are recommended to continue the tonic at their own homes for a still longer period. I usually administer the iron and arsenic in the form mentioned in the report of Case 1, above, as I find it gives the best results in a shorter period of time.

The saline aperient used by me and which is preferable to any other aperient is the following:

℞. Sodii sulphas.
Mag. sulphas., āā....................ʒiss 6
Aqua ad ....℥ii 60
M. Sig.: Drink.

As I have previously stated, I have had no ill effects from administering thymol, although a few cases have complained of dizziness and a sensation of fainting, but it has gradually passed off; it is, as we know, a very insoluble drug except in spirits and oils and therefore is not absorbed in sufficient quantity to cause toxic effects, besides which the saline purge given shortly after the last dose hurries it out of the system although sufficient time has been given the thymol to act on the parasites, and besides this there is no doubt that sodium or magnesium appears to be an antidote.

A remarkable fact and one which confirms me in the use of thymol is the immediate relief given by the first administration of the drug, from the severe headache and other mental symptoms, the patient next day feeling much brighter and better. Bentley recommends and prefers betanaphthol to thymol. I have not tried this drug as yet, being so far satisfied with my results from thymol, but I intend giving it a trial and comparing the results.

PROPHYLAXIS.

In this island the two chief factors in the causation of this disease are (1) muddy and infected drinking water; (2) soil pollution and infection through the skin. With regard to the first, it has been doubted whether this factor is a true one, yet I have had two cases of this disease in which there was no history of dermatitis, the patients being fairly well to do and not exposed to the second method of infection, but they admitted that the first cause might be the real one, as the water supply was obtained from shallow wells, liable to infection and especially during the rains was often muddy.

However, there are only three methods of prevention, viz.: 1, prevention of water infection; 2, prevention of soil infection; 3, treatment of all cases of the disease.

The two last are the chief ones. In this island the disease is widespread throughout all the districts, especially on the estates and in certain villages, hence the chief essential is the prevention of the fecal contamination of the soil in order to eradicate the disease; the promiscuous depositing of feces near the huts and villages and in the fields should be prevented, but owing to habit and the low intelligence of this class, it seems an impossibility. On all estates where huts are provided for the laborers and other families easily accessible privy accommodation should be provided, pits and trenches would do, which could be filled in from time to time and fresh ones opened. Another point is to try to destroy all ova and larvæ on heavily infected fields by ploughing the earth over and burning bush fires over it and replanting, but as most of the cultivation here is cocoa this is an impossibility; these cocoa groves are the chief infected areas, as here the ova have the ideal humidity, shade and temperature for their growth and development. The people should, therefore, be made acquainted with the danger of depositing feces promiscuously and thus infecting the soil and the liability of their acquiring the disease owing to the nature of their work, barefooted. The next point is the proper examination and treatment of all cases of the disease. On all estates and in villages an examination of all cases of dyspeptic troubles, dermatitis and anemia should be made and the feces examined and if the ova are found, immediate treatment of the case begun so as to prevent their becoming a source of danger to others who are not infected. This can not be done without an outlay on the part of the estate owner or the government itself, but there is no doubt that to thoroughly eradicate this disease such measures must be adopted; otherwise the treatment of cases individually is of little use, for as soon as they are cured and go back to their work, they are reinfected again.

DISCUSSION.

Dr. V. A. Latham, Chicago, said that the southern parts of this country were now confronted with this condition. In patients with ankylostomiasis the whole system stops developing; they are anemic, frail and almost infantile in their actions and characteristics.

Dr. Eugene Talbot, Chicago, said that two or three similar cases have occurred in this country, but not enough to warrant the conclusions brought out by Dr. Leonard. One occurred lately in southern Illinois.

THE PREVENTION OF SUMMER DIARRHEA.*

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During the hot summer months, the mortality from diarrhea among infants and young children is very great. Attention has frequently been called to this during the last five years, and much has already been accomplished by the health officials of the large cities of the United States in the prophylaxis of summer diarrhea.

Summer diarrheas are due chiefly to two causes, unclean food and hot weather. Bacteria of various sorts, whether introduced from without in the food, or already present in the intestine, are undoubtedly the exciting causes; but they seem unable to act deleteriously until the vital resistance of the child has first been decidedly weakened by protracted heat or humidity. Hot weather may also bring about deterioration of the milk, which forms the baby's usual food, by favoring the increased production of bacteria in the milk.

As the chief cause of what Dunn[1] so aptly calls "thermic diarrhea" is the heat, our efforts in the prevention of summer diarrhea must be directed toward overcoming the heat, so far as is possible. On the appearance of the first sign of any gastrointestinal derangement, all milk must at once be stopped and barley water or whey given.

Parents, educated or ignorant, poor or rich, must all be taught many things, among others, to bathe infants regularly and often; to keep excessive clothing off; to keep them cool and in the open air; not to disturb them unnecessarily, for playing or petting, so that they secure sufficient sleep; to attend to soiled napkins early; and to realize the importance of keeping off flies. Correct breast and bottle feeding, the correct frequency of feeding, the correct quantity to be given at correct intervals, the correct cleansing of nipples and bottles, the furnishing of a "clean" milk, the precautions necessary to keep it clean, etc., must be taught and must be so clearly expressed that they are plainly understood by all.

This is perhaps best accomplished by the judicious distribution of printed pamphlets containing instructions to mothers for the care and feeding of infants during the heated term. Of the fifteen largest cities of the United States, all containing over 250,000 inhabitants, such booklets are now distributed only by nine: St. Louis, Baltimore, Cleveland, San Francisco, Cincinnati and Pittsburg not as yet issuing any. Four cities have them printed in several languages: Chicago, in English, German, Bohemian, Polish, Swedish, Norwegian, Italian and Yiddish; Buffalo, in English, German, Polish and Italian; New York, in English, Italian, and Yiddish; and Milwaukee in German and English. Philadelphia, Boston, New Orleans, Detroit and Washington have the pamphlets printed in English only. Those distributed in Boston are dated 1879; those in Chicago, 1895, and those in New Orleans, 1899. Those now issued in New York and Washington were printed in 1904; those in Philadelphia, in 1905.

I wrote to the health officials of the nine cities containing from 150,000 to 250,000 inhabitants, but received no answer from Newark, Louisville, Indianapolis or Kansas City, which cities, I presume, do not issue any such pamphlet. St. Paul does not, either. In Minneapolis and Jersey City the pamphlets are printed in English only; in Providence, in English, French and Italian; and in Rochester, in English, German, Italian and Yiddish.

It would seem advisable to have special "milk" courses given in the public schools, the high schools especially, and in the medical schools and hospitals, for the instruction of growing children, physicians and nurses. The fact that clean milk can be procured will then be recognized. In cities in which such milk is obtainable, as the result either of municipal or private enterprise, the public will notice the difference between ordinary dirty milk and that receiving certificates from a milk commission such as is already in existence in many cities. This milk is kept up to standards which are vouched for by an expert bacteriologist, an expert chemist and an expert veterinarian. Such certified milk must be free from pathogenic micro-organisms and contain not more than from 10,000 to 30,000 to the c.cm., varying in several cities; its specific gravity must be between 1,029 and 1,033; its reaction must be neutral or faintly acid; its proteid should vary between 3.5 and 4 per cent.; its sugar between 4.2 and 4.8 per cent.; its fat between 3.5 and 4.5 per cent.; and it must be free from impurities, coloring matters and chemical preservatives. Besides, the condition of the dairy and the cows must be kept excellent.

In order to supply such clean milk to rich and poor alike, it would be well for every large city to acquire a dairy in the outskirts of the city, to be run on modern methods, under the guidance of a milk commission. Such a dairy might come under the jurisdiction of the municipal health department, and the city bacteriologist could easily watch that the milk and cream there prepared be kept up to the standard required. Each city could then supply clean milk to its citizens, and a municipal laboratory might be established for the preparation of mixtures which could be ordered by any physician on prescription blanks, free, or at a nominal price to the poor, at ordinary prices to those able to pay.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Charles H. Dunn: "Etiology and Classification of the Summer Diarrheas of Infancy." Archiv. of Ped., June, 1905.

Should the powers that be object to the expense of such an undertaking, such a dairy, and possibly laboratory also, could be established by private subscription for the use of the poor only. Something like this was attempted in St. Louis last summer. As, at that time, there were no stringent regulations to standardize the cream and milk used, the purity of the mixtures prepared may be questioned. Rules have since been adopted, however, by the St. Louis Milk Commission, which will bring the milk and cream up to the standards maintained by the milk commissions of Eastern cities. While these modified mixtures have been distributed in St. Louis to anyone bringing a physician's prescription, milk funds, limited in distribution to the patients of certain hospitals or dispensaries, have for some years been in operation in Boston, Baltimore and Newark, with success.

In New York and Philadelphia, Mr. Nathan Straus gave the plants in which are prepared the modified mixtures distributed in both cities. Unfortunately, he has insisted on the pasteurization of all mixtures. Recent researches by Pennington[2] prove that commercially pasteurized mixtures, though prepared from clean milk and cream, contain after pasteurization more bacteria than before. Bergey,[3] Evans and Cope[4] have also shown the practical uselessness of pasteurization and sterilization, when performed more than from four to eight hours before the mixture is to be used. These researches do not, however, reflect on home pasteurization, correctly performed, in closed, filled bottles, when for any reason it is feared that the milk is not clean. How much better off would the community be, were we able to furnish a clean milk to all, so that neither pasteurization nor sterilization need even be thought of! Sterilization causes decided changes, those which occur whenever milk is boiled, and should never be employed; while pasteurization, always an iniquity, though occasionally a necessary iniquity, can also be dispensed with when clean milk and cream are used.

The simplest method for distributing milk and feeding infants in hot weather is that established in Rochester, in 1900, by Dr. George W. Goler. His efforts led to the furnishing of a clean milk and from that time pasteurization has been omitted. Several months ago, an association for the improvement of the milk supply of New York City was formed by 40 of the largest milk dealers, to assist the health department to secure clean milk. This society intends to educate the farmers and then to inspect the dairies regularly.

After studying the municipal pamphlets already in existence, I have prepared the following sample pamphlet for distribution by municipal health departments. In this I must acknowledge my indebtedness to the departments of health of Rochester and of New York City.

On the outer cover should be the name of the city, with the words "Health Department," "Department of Health," or "Bureau of Health," followed by the title of the pamphlet "Instructions to Mothers for the Care and Feeding of Young Children During the Hot Weather."

Inside the cover should be the following:

Clothing.—During the very hot weather infants should wear only a napkin and a thin gauze shirt. An abdominal binder, of thin flannel, may be worn until the child is six months old.

No infant should ever wear starched, stiff, uncomfortable clothes; everything should be loose.

Clothes worn during the day should be washed and hung out to air at night, while those worn at night should be washed or aired during the day.

Bathing.—Every young child needs at least one tub bath every day. On very warm days babies should be sponged two or three times a day with luke warm or cool water, containing a teaspoonful of salt to a pint of water, or a little alcohol or vinegar.

Poorly nourished infants should also receive a mild general rub with sweet oil once daily, after the morning bath.

The baby should be bathed before feeding; never bathe a child soon after feeding.

Talcum powder may be used freely after the bath. If slight chafing occur, stop using the powder and smear the parts well with boric ointment; if the chafing persists, consult your physician.

Fresh Air.—Fresh air is of vital importance. Keep the windows open. Never keep a child in a close or crowded room.

Have the child in the open air all day during the hot weather, out of the sun, protected from strong winds, bright sunlight and flies.

Whenever possible, if advised by your physician, take a trip on the water, to the country or seashore. Trolley rides are of value, provided you protect the infant from strong winds.

Instead of sweeping the baby's room, mop furniture, walls and floor with a moist cloth. This does not raise dust, which might contain germs.

Sleep.—Every young child should have twelve hours sleep at night. Naps of about two hours, morning and afternoon, should be insisted on until the child is 3 years old.

Each child should sleep by itself, in a crib or coach; this is most important in warm weather, when the heat of the mother's body, lying near, keeps the baby too hot.

Soiled Napkins.—Napkins should be changed frequently, just as soon as soiled. They should be placed in some covered receptacle, in water, and should be washed and boiled as soon as possible.

Never use oilcloth or waterproof materials for napkins; they keep the child's body hot and moist.

Do not wash or dry napkins in the room occupied by the baby.

Flies.—It is important to keep flies away from children and their food. For flies come from dustbins, manure and refuse heaps, readily carrying germs to children and into their food, when it is left uncovered. Windows and doors should always be screened and the baby's crib should be covered with mosquito netting. Whenever the child is taken out, the coach should be covered with netting to protect the baby from mosquitoes and flies.

Breast Feeding.—Always nurse your baby unless your physician advises you not to.

Keep your nipples scrupulously clean, washing them with cool boiled water before and after each nursing.

Each breast should be nursed at alternate feedings; both breasts should not be given the infant at one feeding unless specially ordered by your physician.

The mother's bowels should be moved once daily; she should take three plain, well-cooked meals a day, of milk, cereals, meat and vegetables. She needs plenty of milk and water; but she should not take tea, strong coffee, or liquor.

In very hot weather, or when overheated, she should "milk" her breasts, throwing away several teaspoonfuls of her milk before allowing the child to nurse.

Bottle-Feeding.—Procure the cleanest, freshest milk possible. Where possible, use certified milk. Do not skim the milk. Clean milk and cream are delivered in covered bottles. These should never be allowed to stand uncovered; nor should milk ever be carried in an uncovered receptacle. For dust or flies, both bearing germs, may enter it. Milk and cream should always be kept cold; in a refrigerator when possible; if you have no ice, wrap a cloth wrung out of cold water around the bottle.

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[2] Mary E. Pennington: "Comparison of Pasteurized and Raw Milk," read before the Philadelphia Pathological Society, Feb. 23, 1905.

[3] D. H. Bergey: "The Influence of Pasteurization on the Chemical and Physical Qualities of Milk," read before the Philadelphia Pathological Society, Feb. 23, 1905.

[4] Joseph S. Evans, Jr., and Thomas A. Cope: "The Inhibitory Power of Unheated Milk on Bacteria," read before the Philadelphia Pathological Society, Feb. 23, 1905, and before the Philadelphia Pediatric Society, May 9, 1905.

Have the baby weighed every week up to six weeks of age; then every two weeks, regularly; and feed it according to the following table:

2 Tablespoonfuls, 1 ounce; 4 teaspoonfuls, 1 tablespoonful.

Weight.	Milk.	Barley Water.	Granulated Sugar.	Intervals between feeding	From 6 a. m. to 6 p. m.	From 6 p. m. to 6 a. m.
From 6 to 8 lbs Under 3600 g.	1 oz....	2 oz....	½ teaspoonful	2 hours	6 bottles.	2 bottles.
9 and 10 lbs. 3700-4500 g...	1½ oz..	2½ oz..	½ teaspoonful	2 hours	6 bottles.	2 bottles.
11 to 14 lbs. 4600-6400 g...	2½ oz..	2½ oz..	¾ teaspoonful	2½ hrs.	5 bottles	2 bottles.
15 and 16 lbs. 6500-7300 g...	3½ oz..	2½ oz..	1 teaspoonful..	2½ hrs.	5 bottles.	2 bottles.
17 and 18 lbs. 7400-8200 g...	5 oz....	2 oz....	1 teaspoonful..	3 hours	5 bottles.	1 bottle..
19 and 20 lbs. 8300-9000 g...	8 oz....	0 oz....	1 teaspoonful..	3 hours	5 bottles.	1 bottle.
21 and 22 lbs. 9100-10000 g..	10 oz...	0 oz....	½ teaspoonful	2 hours	5 bottles.	0 bottle.

In every case make one-tenth of the mixture lime water; this may be procured at any drug stone. It is added to prevent vomiting.

Barley water is made by boiling whole barley, two tablespoonfuls, or barley flour, one tablespoonful, for 15 or 20 minutes, in one pint of water; strain and add boiled water to make one pint again. This is used both to dilute the milk and to help the baby digest the cow's milk.

Should the baby fail to gain in weight at the end of two weeks, clean cream may be added cautiously, beginning with one teaspoonful to each bottle, and gradually increasing. Your physician will tell you how much cream you may add; as a rule, more than one-tenth of the mixture should never be added. (For example, a baby weighing 8 pounds gets 3 ounces, 6 tablespoonfuls, or 24 teaspoonfuls, at each feeding. More than one-tenth of this quantity, i. e., 2½ teaspoonfuls, of cream should never be added.) If you are not sure that the cream is clean, boil it; and boil the sugar and water, too; then add them to the clean milk when cold.

Should the baby develop vomiting or diarrhea, stop all milk at once and give barley water only until whey can be made. If your physician advises it, prepare the whey by adding one teaspoonful of liquid rennet or essence of pepsin to one pint of milk which has first been heated. Or dissolve one rennet tablet in one ounce of cold water and add this to one quart of milk; then heat it to about 100 F., and allow it to stand. When the curd has become solid, beat it up well with a fork, and keep it warm for 10 or 15 minutes longer. Then strain and put the whey on ice.

Some days later, if your physician advises it, add one teaspoonful of milk cautiously, to each bottle, after having heated the whey up to 155 F., to stop the further action of the rennet. The quantity of milk or cream to be added, later, is to be regulated by your physician.

Whoever prepares the food should wash her hands regularly before beginning to make the mixture.

Before each feeding the bottle is heated in water, resting on a saucer, until the water under and about the bottle begins to boil; it should not be allowed to boil. The bottle is then removed and allowed to stand, to cool off somewhat before the baby gets it.

Before taking the breast or bottle, the baby's mouth should be cleansed with cool boiled water. Between feedings every child, whether breast or bottle fed, should be given cool boiled water to drink, frequently, from several teaspoonfuls to a tablespoonful at a time.

No child should be fed more frequently than here given, nor should a larger quantity be given at any feeding without the special advice of your physician. When any milk remains in the bottle, always throw it away; do not heat it over again.

When the warm weather begins, it is a wise precaution to reduce the strength of mixtures given bottle-fed babies, in fat especially, as a child is often unable to digest its regular food during hot weather. This alone may prevent illness.

All nursing bottles should be cleansed thoroughly, first with cold water, then with washing soda and hot water; and then rinsed well and boiled before using. Nipples should be turned inside out and scrubbed in cool boiled water and borax, 10 grains to the ounce, with a brush used for this only. All nipples should be boiled once daily. At least six bottles are needed. After cleansing them, stand them upside down on a shelf. The nipples should be kept in cool boiled water, in a covered receptacle. Bottles with twisted necks and nipples with tubes should never be used.

Weaning.—When the child is 10 or 12 months old, it should be weaned, except in hot weather, when the breast or bottle may be continued until the autumn. Weaning is accomplished by substituting pure milk, or a modified milk mixture when ordered by your physician, in a cup or glass, for the breast or bottle, once daily at first; then twice, increasing gradually until the child only takes milk by the glass.

Feeding After First Year.—At 1 year of age, two, and later four or five meals a day may be given, gradually increasing the amount at each feeding. The meals should be composed of some of the following: Milk, stale bread or toast with butter, soft boiled eggs, strained beef, mutton or chicken broth, and cereals (oatmeal or hominy cooked three hours; cornmeal cooked two hours; or farina cooked one hour).

At 2 years of age meat may be added cautiously. The child should then take only three meals a day, with water or milk regularly between meals. Supper should consist of milk, bread and butter, and a cereal.

No child should ever be given tea, coffee, or liquor; fried food of any kind; griddle cakes, sausage or pork; heavy, doughy puddings, fresh bread, cake or pastry; unripe, sour or over-ripe fruit; bananas; very sweet preserves, popcorn, candies, etc.

Too much food is always worse than too little, especially in hot weather.

Never give a baby sleeping drops, anodynes or soothing syrups.

Never allow children to creep about on the floor; for there is danger of cold draughts of air, and of dust containing germs.

Let the baby alone; don't disturb it unnecessarily, to play with it, pet it, or handle it.

Have the baby vaccinated before it is 1 year old.

Summer Diarrhea.—If the baby passes several loose stools, with or without vomiting, the child needs medical attention.

Stop all milk food at once, and give the baby boiled water or barley water, if less than 1 year of age; or whey if over 12 months, until it can be taken to a physician.

Even simple cases of vomiting and diarrhea should never be neglected, for the disease is often mild at first, without any sign of illness other than diarrhea; yet, in a few hours, the baby may be dangerously ill.

If you have no physician and there is no hospital near, telephone to the Board of Health and a district physician will be notified.

The objection which can be raised to this method of simply diluting milk is, of course, the very low fat percentage in the mixtures; but this, as a rule, is just what is needed during hot weather.

When the baby fails to gain, small amounts of cream can easily be added. The objection to this, however, is the fact that the cream, in hot weather especially, will contain far more bacteria than the milk. This objection may be overcome by boiling the small quantity of cream separately, by boiling sugar and water, and by adding them, cold, to the clean milk. If the baby then has indigestion it may be due to too much fat, but it is more probably due to the infant's inability to digest the caseinogen of cow's milk. This, however, is much decreased by the use of whey, which can be easily prepared. The proteids can then be raised easily, with a very gradual increase in the fats, by adding milk; or the fats may be raised rapidly by adding cream.

The manner of distributing these pamphlets also needs consideration. They should be given away by both district physicians and medical inspectors. Whenever, in hot weather, either has occasion to visit a home in which there are children under 3 years he should not forget to leave a pamphlet. The pamphlets should also be sent to dispensaries, and milk and ice stations for free distribution. Some should also be sent to every physician in the city, for the benefit of his patients, and he should be informed where more can be procured. In cities with a large foreign population much can be done by having the pamphlets printed in several languages. It seems important also to have these instructions reach the well-to-do as well as the poor, for it is only by furnishing clean food and educating mothers and nurses that summer diarrhea can eventually be overcome.

225 South Twentieth Street.

DISCUSSION.

Dr. C. F. Wahrer, Fort Madison, Iowa, declared that every case of summer diarrhea is a case of itself; there are so many known and unknown factors such as surroundings, predisposition and food. Two of the principal reasons of an increased number of cases in the summer are increased putrefactive changes in foods of bacterial origin, and the worry and disturbance to the nervous system. He said that once he went out to see milking done. The cows were deep in the mire that they made themselves. He saw the milkman come out, unkempt, unwashed, pick up a milk stool, give a cow a kick, stroke the udder and begin to milk. The whole place was literally covered with what in the Anglo-Saxon would be called "cow dung." Much of the milking on farms, Dr. Wahrer believes, is done in such a manner that the milk is mixed with the filth so that it is very difficult to control the supply of milk to bottle-fed children. In the larger cities mothers who are subjected to work akin to that of the beast of the field are nursing their children. Such a mother can scarcely give healthy milk, and the unsanitary mode of life of the mothers should be changed. Dr. Wahrer agreed with Dr. Ostheimer that education is necessary. He does not think any mother would transgress the rules of cleanliness, etc., if she were taught the importance of the care of the milk supply.

Dr. L. M. Silver, New York, said that in New York City there are a number of charitable entertainments for children and individuals interested are given an opportunity to contribute. The children are given passes to Coney Island and each mother is given a printed slip with instructions for the care of milk and for the preparation of barley water.

Dr. Kate Lindsay, Boulder, Colo., stated that her practice has been mostly in the farming districts, and that there the ignorance with reference to infant feeding is quite as lamentable as in the cities. As an illustration she related one of her cases. She was called to see a child with summer diarrhea. At the same time a veterinarian was called to see a colt. The farmer was in a great rage because his best mare had been driven and overheated. At the same time he required his wife to cook for sixteen men and to sweat over the fire. Dr. Lindsay examined the milk and found it deficient in every way. Education along this line is needed among the farmers of the country. Dr. Lindsay would not discourage efforts to educate the people of the slums, but asked why we should not take care of the best as well as the worst in the land.

Dr. G. Blumer, San Francisco, said that there are a few cases of summer diarrhea in San Francisco, occurring usually after the occasional hot spells in that city.

Dr. Arthur W. Fairbanks, Boston, asked Dr. Ostheimer how long he keeps the children on a cereal mixture. There is always some uncertainty in Dr. Fairbanks' mind on this point. He also asked what the indications are for taking the child off the milk, whether it is fever, temperature or general septic signs.

Dr. A. C. Cotton, Chicago, said that all physicians appreciate the idea of the education of the laity by means of pamphlets. He believes that health department work has obtained some of its best results through the circulars issued to mothers. Dr. Cotton would put such instructions in a place of honor and have the mother taught to look at them as her lode star. The mothers should be taught particularly that there is a beginning to this trouble, and that often this is in the method of nursing or feeding. The little regurgitation which comes with too rapid feeding will cause indigestion and summer diarrhea follows. For summer feeding the food should be diluted. A lower caloric value of the food is needed. In artificial feeding we are not feeding according to nature, but according to experience, and attenuated food is more easily digested.

Dr. John Lovett Morse, Boston, declared that he objected to the title, "Prevention of Summer Diarrhea." He thinks it ought to be "Prevention of Diarrhea in Summer." He stated that it should not be forgotten that whey is milk and that bacteria will grow in one as well as in the other.

Dr. Maurice Ostheimer, in reply to a question, stated that the length of time the child is kept on barley water depends on the symptoms. It may be from twenty-four to forty-eight hours; in extreme cases perhaps seven or eight days, but in these cases he should add brandy or whisky, so that the baby gets some nourishment. In most cases, however, he gives no alcohol while on barley water. On the first sign of gastrointestinal derangement he would stop the milk, even if for only twenty-four hours. As Dr. Cotton has said, the regurgitation of food is one of the first signs of trouble and ought to attract the mother's attention. In reply to a question Dr. Ostheimer stated that when pasteurization is done in bulk the bacteria are increased tremendously. Whether they are the same bacteria which are found in the beginning he does not know; whether they are pathogenic is another question; he does not believe that they are. In Philadelphia a great deal of work has been done in this connection, and the importance of keeping milk clean has been proved.

FIFTEEN CASES OF SUMMER DIARRHEA.*

JOHN C. COOK, M.D.

CHICAGO.

The fifteen cases of summer diarrhea which I wish to present, have been selected from the two hundred and fifty cases of children's diseases that came under my observation at the Jackson Park Sanitarium, Chicago, during the months of July and August, 1904. For the sake of brevity I will divide these cases into two classes. The first class comprised eleven cases of a mild type, the records of which have been combined in such a way that they will serve as a standard of comparison by which to estimate the value of the findings in the remaining cases. The second class comprises four fatal cases which are of special interest because of the bacteriologic and microscopic findings both during the clinical course and at postmortem.

As briefly as possible, I will relate the findings to which I wish to call attention. The average age of these infants was nine and one-third months. Personal and family history is what would be expected in a class of charity patients, breast fed by poorly nourished mothers, and artificially fed on every sort of milk and infant food. The average course of temperature is shown in Chart 1; it varied from 97 to 102.5 F., with a total average of 99.4. Vomiting was present, but was not by any means a constant symptom. The frequency of

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* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

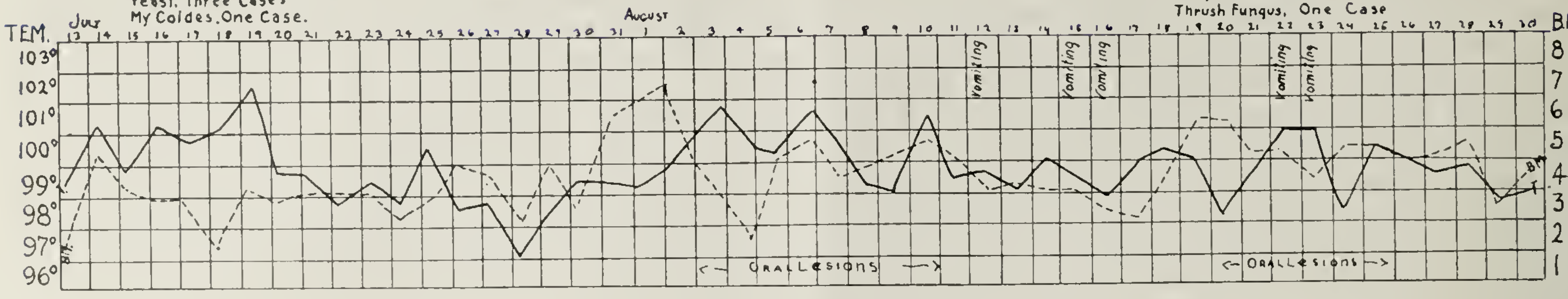
CHART I

MICROÖBANISMS OF THE STOOLS

Pneumococcus. Seven Cases
Sarcina, four Cases
Colon Bacillus, Seven Cases
Uniddentified Bacilli, Ten Cases
Yeast. Three Cases
My Coldes. One Case.

MICROÖRGANISMS OF THE THROAT

Pneumococcus, Seven Cases
Sarcina, Four "
Colon Bacillus, Six "
Yeast, Nine "
Unindentified Bacilli, Two "
Thrush Fungus, One Case



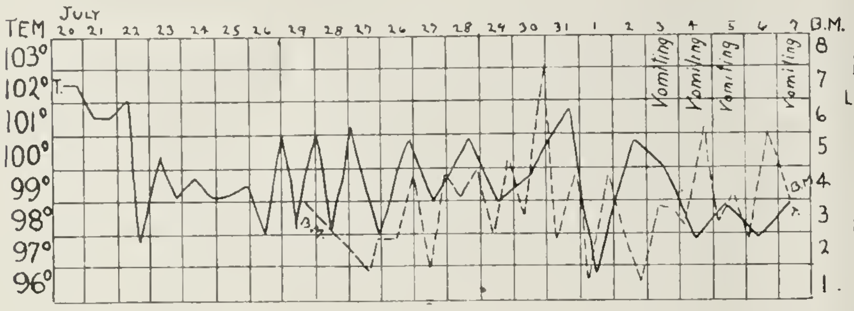


CHART II

MICROSCOPICAL AND BACTERIOLOGICAL FINDINGS POST MORTEM

Lungs — Bronchopneumonia
Kidneys — Diffuse Parenchymatous Nephritis
Small Intestines — Ulcerations

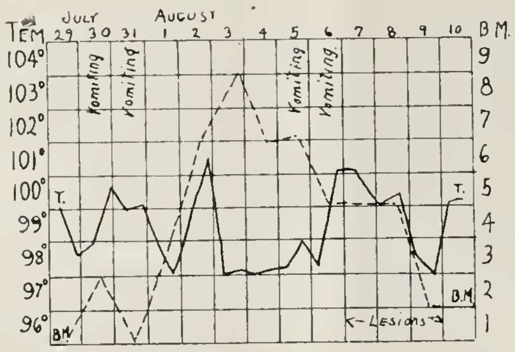
Blood — Pneumoccus
Peritoneal Fluid — Pneumoccus
All Thoracic and Abdominal Organs — Pneumococcus

CHART III

MICROSOPICAL AND BACTERIOLOGICAL FINDINGS POST MORTEM

Lungs - Bronchopneumonia
Kidneys - Diffuse Parenchymatous Nephritis

Bacteriological Examination
Lungs — Pneumococcus
Other Organs — Sterile



MICROÖRGANISMS OF THE STOOLS:—
Colon Bacillus
An Unidentified Bacillus
Pneumcoccus
Thrush Fungus

MICROÖRGANISMS OF THE THROAT:—
Sarcina
Pneumcoccus
Thrush Fungus
Colon Bacillus

CHART IV

BACTERIA OF THE THROAT:—
Colon Bacillus
Sarcina
Pneumococcus

BACTERIA OF THE STOOLS:—
Colon Bacillus, Sarcina, Pneumococcus,
Red Pigmenting Bacillus of the Colon Croup
Typhoid Bacillus, Streptococcus

REPEATED WIDAL TESTS—POSITIVE

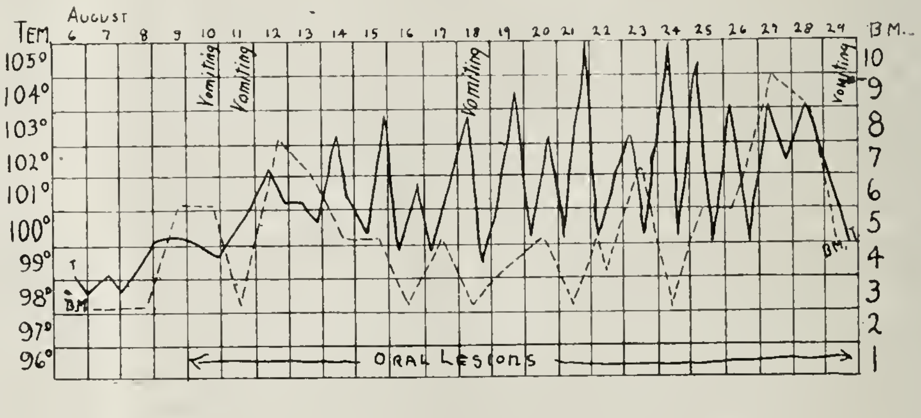
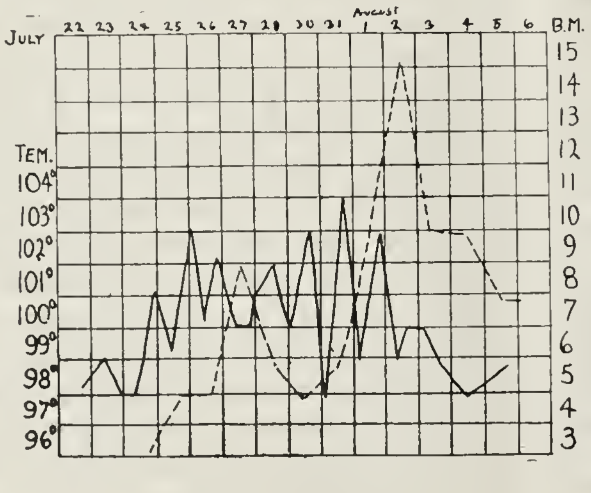


CHART V



NOTE

In the stools of this case a Red Pigmenting Bacillus of the Colon Group was isolated. This pigment stained the stools blood-red but no blood was found upon microscopical examination.

bowel movements also I have placed on Chart 1. They varied from two to seven a day, with a total average of four. Lesions were present in the mouth in three of the eleven cases, but were mild and readily yielded to treatment. The differential blood findings were as follows: Small lymphocytes 27 per cent., large lymphocytes 16 per cent., neutrophiles 53 per cent., eosinophiles 2 per cent., myelocytes 2 per cent. The parasitic and bacteriologic findings of the stools were as follows: The pneumococcus was present in seven cases, sarcina in four, colon bacillus in seven and unidentified bacilli in ten, yeast in three and mycoides in one, with a total of three varieties in each case. Of the bacteriologic findings of the throat, the pneumococcus was present in seven cases, sarcina in four, colon bacillus in six, yeast in nine, unidentified bacilli in two and thrush fungus in one. There was a total average of three varieties in each case.

I will now take up the findings of the second class of cases. The first of these was a male, aged 6 months. No history was obtained; the child was under observation from July 16 until his death, August 7. The temperature range, which is shown on Chart 2, was moderate, from 97.8 to 103.5 F., averaging throughout the course of the disease 99.6. As is also seen on Chart 2, there was a range of from two to seven bowel movements daily, with an average of four. Lesions in the mouth were constantly present. Vomiting occurred in the last five days only. Neither blood nor bacteriologic examinations of the stools and throat were made during life, but the microscopic and bacteriologic examinations postmortem are important. The microscopic examination of the lungs showed well marked bronchopneumonia. In the kidneys a diffuse parenchymatous nephritis had developed. The small intestines showed an exfoliation of the epithelial and mucous coats with a round cell infiltration of the muscular layer. Bacteriologic examination showed the presence of the pneumococcus in every organ, as well as in the blood and peritoneal fluid.

The second of the severe cases was a female aged three months. This case was under observation from July 29 and came to autopsy August 10. The child had been fed on a proprietary food, otherwise the history was negative. As can be seen by Chart 3, the temperature course was very mild, between 98 and 101.5 F., averaging about 99 degrees. The bowel movements averaged six a day, reaching the highest number, nine, six days before the child died. Vomiting occurred three times. Lesions of the mouth were present during the last days of the disease. The differential blood findings were as follows: Small lymphocytes 38 per cent., large lymphocytes 20 per cent., and neutrophiles 42 per cent. There was in all, four varieties of micro-organisms in the stools, the colon bacillus, an unidentified bacillus, the pneumococcus, and the thrush fungus, which was very abundant. In the throat also four varieties were demonstrated—the colon bacillus, pneumococcus, sarcina, and thrush fungus. An autopsy was held, which resulted in the disclosure of a bronchopneumonia and a parenchymatous diffuse nephritis. The bacteriologic examination of the organs showed the presence of the pneumococcus in the lungs. The other organs were sterile.

The third of the three cases was a female aged 2½ months. This child entered the sanitarium August 5 and died August 29. The mother of the child had been in an insane asylum with puerperal insanity since the birth of the infant, and the child had been fed on Mellin's food up to the time she came under observation. The temperature course was of a septic character, ranging from 98 to 106 F. (Chart 4), averaging about 101 degrees. The bowel movement ran up as high as ten, with an average of six. Vomiting was present, but was not of frequent occurrence. Mouth lesions were constantly present. The differential blood count was as follows: Small lymphocytes 35 per cent., large lymphocytes 15 per cent., neutrophiles 47 per cent., eosinophiles 1 per cent., and myelocytes 2 per cent. Repeated Widal tests were positive. The bacteriologic examination disclosed the specific trouble to be typhoid. The bacteria of the throat were colon bacilli, sarcinæ, and pneumococci three varieties. The bacteria of the stools were colon bacilli, a red pigmenting bacillus of the colon group, typhoid bacilli, sarcinæ, pneumococci and streptococci, six varieties altogether. A postmortem was not obtainable.

The last of the severe cases was a female aged 7½ months. This child came under observation July 22, and died August 5, fifteen days after entering. In this case there also ran a septic temperature which varied from 98 to 104 degrees. Bowel movements were frequent, once reaching fifteen during twenty-four hours. Vomiting occurred only twice and was not severe. No mouth lesions were present. The blood examinations were not made. The bacteriologic examination of the throat was also omitted. One bacteriologic finding in the stools makes this case worthy of notice. There was found a red pigmenting bacillus of the colon group that developed a red pigment so rapidly in the intestines that the feces and mucous secretions were stained blood red. Several bloody stools were recorded and twice the nurse in charge reported a hemorrhage from the bowels, but no blood was found on microscopic examination. A full description of the pathogenesis of this bacillus has not been furnished me, but the clinical significance of such a finding is worthy of some comment. An autopsy was not allowed in this case.

As a result of the examination of the above cases, the histories of which have been briefly reviewed, some general deductions may be made regarding the etiology, symptomatology and treatment of summer diarrheas of children. It will be remembered that Booker, in 1897, made the statement that no single micro-organism is found to be the specific exciter of summer diarrhea of infancy, but the affection is generally to be attributed to the results of the activity of a number of varieties of bacteria. While generally speaking, the statement is undoubtedly true, however, it does seem possibly and probably true that some of the well-known pathogenic organisms, such as the typhoid bacillus, pneumococcus and streptococcus, gain entrance to the general circulation through lesions in the gastro-intestinal tract, and give rise to septicemia, and are the immediate cause of death; that these atria of infection are produced by the local action of less toxic micro-organisms, such as staphylococcus, colon bacillus, yeasts, and thrush fungus; and that the toxins which are generated by the saprophytic action of all of the micro-organisms in the intestines, tend both to lower the resistance of the child and to mask the symptoms of the specific intoxication. It is further apparent that the increased frequency of vomiting and bowel movement is more often due to the reflex action of septicemia and sapremia than to direct intestinal irritation; and that the gross appearance of blood in the stools should always be corroborated by a microscopic and bacteriologic examination.

Finally, if the above conditions of sepsis and sapremia be true in these cases, then the problem of treatment resolves itself into a question of maintaining the general resistance of the child and of neutralizing the specific intoxication by such means as prophylactic cleanliness, nutritious diet, frequent enemas to keep up the balance of body fluid, quinin inunctions as a general tonic, and keeping the child out of doors on a firm bed, instead of on a luxurious crib or cab in a stuffy, hot room.

I wish to acknowledge valuable assistance rendered me in this work to Drs. J. J. Gill and W. G. Baine.

DISCUSSION.

Dr. M. Michael, Chicago, said that with Dr. Coone and Dr. Weaver he undertook the study of 97 cases of summer diarrhea in children. Dr. Weaver took up the bacteriologic side of the question, and Dr. Coone and Dr. Michael the clinical. For collecting the stools a sterile wide-mouthed bottle partly filled with salt solution was used; this was tightly corked and two glass tubes were passed through the cork. One was stuffed with cotton and to the other was attached a rubber tube and to the end of this a catheter. The catheter was protected by a second tube in order to keep it sterile until inserted into the bowel. The apparatus was turned upside down and the second tube was gradually drawn back as the catheter was inserted. When the salt solution had run into the bowel the apparatus was turned down again and the stool passed through the catheter into the bottle. This was carried to the laboratory, and the Memorial Institute for Infectious Diseases of Chicago furnished the material for bacteriologic study. The dysentery bacillus was found in about 24 cases. Clinically the 97 cases could fairly well be divided into two groups. In the first group the toxemic symptoms predominated. There was high temperature, nausea, vomiting, restlessness, great nervousness and the children were very ill. In the second group the local symptoms predominated, the picture being one of ileocolitis. In these cases the stools contained much mucus and blood. The dysentery bacillus was found in the cases in which the stools did not show blood and in those in which the blood and mucus were found, but it did not occur in all the latter cases. They found also that cases of ileocolitis in which the dysentery bacillus was found did not differ in any way from those in which the bacillus was not found.

Dr. Arthur W. Fairbanks, Boston, stated that Dr. Cook's remarks may explain an experience a few years ago in a small hospital in Boston where they have a great many cases of very severe ileocolitis. The nurse reported that blood appeared in the stools of a patient, and Dr. Fairbanks directed the house officer to hunt with the microscope for blood, but it was not found. Later he saw one of the stools and it had the appearance of streaks of blood through it. He then blamed the house officer and told him to make the hematin test. The house officer reported that there was no positive reaction, and Dr. Fairbanks inclined to question the accuracy with which the test was made, but this bacillus mentioned by Dr. Cook, he thinks, may explain the occurrence.

Dr. J. C. Cook said that he was glad to have Dr. Michael give the method of collection. Good work was done by her and her colleagues and a valuable report made of it. The bacillus has been examined in a number of laboratories and has shown some peculiarities of growth and development; whether or not it is pathogenic is not yet known. It is believed to belong to the colon group. There is no literature on the subject so far as Dr. Cook has been able to find. It appeared twice in his experience and the quantity of blood or stain was so great that it might easily be mistaken for a hemorrhage of the bowels when there was no blood or ulceration present. In reply to a question Dr. Cook stated that it was a fatal case, and that he, perhaps, did not make very apparent the relation of the vomiting to the rise of temperature. The vomiting and bowel movements were very likely to occur together or within a few hours of one another, showing the condition of sepsis that might induce them rather than any bowel irritation. These children were for the most part fed after the most approved method.

Variable Liver.—Professor Mongour of Bordeaux has noticed that in malaria the liver is liable to vary in size from day to day. These variations seem to be proportional to the resisting powers of the organ. The prognosis of any acute or chronic hepatitis is better the greater the range and frequency of these changes in the size of the liver. In some cases the organ will seem to be atrophied one day and hypertrophied the next. He has recently called the attention of the Paris Academy of Medicine to the matter.

THE ANTI-MICROBIC ACTION OF IODIN.*

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PREFACE.

The uniform satisfaction given by the iodin catgut prepared after the method of Claudius,[1] which has been used by Dr. Nicholas Senn in his clinical work, led him to employ a solution of iodin for irrigation in infected wounds and also for hand sterilization. The results obtained demonstrated, clinically, the marked potency of iodin in solution as an antiseptic. Its continued use for several years has shown it to be far superior to any antiseptic previously employed.

In order to determine the absolute value of this solution, a series of experiments have been carried out on a number of different micro-organisms *in vitro*. A sufficient number of different organisms and a great number of tubes have been used. Therefore one is justified in assuming that the conclusions arrived at from a careful study of the series of experiments represent as nearly as possible the position of iodin in the family of antiseptics. When we try to make an accurate comparison between the members of this numerous family, however, we find we can not do so because of the widely different methods of procedure employed by the different investigators. In addition, the majority of the methods show one or more points of possible error. Not for the purpose of comparison, but with the idea in view of presenting the experimental findings of various men on the more important antiseptic substances, there has been incorporated in this research a short bibliography of antiseptics in general.

Bichlorid of Mercury.—Kyle[2] found that it took 1/1000 solution bichlorid ten hours to insure no growth of tetanus bacillus. Koch[3] determined that a 1/20000 solution killed anthrax spores in ten minutes. Klein,[4] however, found that anthrax spores were not influenced by a 1/10000 solution acting for one hour. Evans,[5] from experiments on *Bacillus anthracis* in liquid media, reported that a 1/15000 for one minute and a 1/20000 for thirty minutes were effective. In regard to the spores he found that a 1/1000 for fifteen minutes and a 1/1500 for one hour were effective. Likewise, a 1/1000 for five minutes gave growth. On *Staphylococcus pyogenes aureus*, the same author states that a 1/200 solution for fifteen minutes killed, while a 1/250 solution for one hour impaired vitality. Tarnier and Vignal,[6] using thread method of Koch, found that a 1/1000 solution for two minutes killed both *Streptococcus* and *Staphylococcus pyogenes aureus*. Harrington,[7] employing the same method, states that where the threads are moist an exposure of over fifteen minutes to a 1/1000 solution is necessary to kill the *Bacillus pyocyaneus*, while if threads are dry five seconds are sufficient. On *Staphylococcus aureus*, either on moist or dry threads, from five to ten minutes kills. On *Bacillus anthracis*, either dry or moist threads, an exposure to a 1/1000 solution for thirty minutes has no bactericidal effect. Hence, he states that bichlorid of mercury is a greatly overrated disinfectant. Burgess,[8] who also used the thread method in his experiments on *Bacillus coli communis*, found that a 1/750 solution for one minute was effective, as were a 1/2000 solution for five minutes and a 1/7500 for ten minutes. Sternberg,[9] from experiments on gonococcus, states that 0.005 per cent. bichlorid solution for two hours kills. He concludes that in bichlorid we have a germicidal agent of the highest value.

Carbolic Acid.—Kyle[2] found that the tetanus bacillus had to be exposed to a 5 per cent. carbolic acid solution for six hours in order to assure no growth. Cabbot,[10] on adding 5 per cent.

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* Work done as Fellow in Surgery at the Senn Laboratory, Rush Medical College.

[1] Claudius: Deutsche Zeitschrift für Chirurgie, 1902, vol. lxiv, pp. 489-494.

[2] Kyle: Therapeutic Gazette, Detroit, 1892, vol. viii, p. 163.

[3] Koch: Mittheilungen aus dem k. Gesundheitsamte, vol. i, 1881.

[4] Klein: Local Gov. Bd. Rep., London, 1885-6.

[5] Evans: Guy's Hospital Report, London, 1890, 3 s., vol. xxxii, pp. 195-252.

[6] Tarnier and Vignal: Arch. de méd. expér. et d'anat. path., Paris, 1890, vol. ii, p. 477.

[7] Harrington: Boston Medical and Surgical Journal, 1903, vol. cxlviii, pp. 445-439.

[8] Burgess: Lancet, London, 1900, vol. i, p. 1798.

[9] Sternberg: American Journal of Medical Science, 1883, vol. lxxxv, pp. 321-343.

[10] Cabbot: Boston Medical and Surgical Journal, 1879, vol. ci, p. 75.

carbolic acid to a putrefactive solution and then transferring several drops of mixture to an aseptic medium, discovered that after five seconds' exposure no putrefaction occurred in fresh tubes. Evans[5] found that on anthrax bacillus a 1/100 solution for five minutes, a 1/150 solution for fifteen minutes, and a 1/175 solution for thirty minutes, were effective. On the spores, he got a growth after four hours' exposure to a 5 per cent. solution. A twenty-four hours' exposure, however, was sufficient to insure no growth. A 1/40 solution on *Staphylococcus aureus* for fifteen minutes gave no growth. Burgess,[5] in his work on *Bacillus coli communis,* states that a 10 per cent. solution kills in one minute, a 2.5 per cent. in five minutes, a 1 per cent. in thirty minutes, and a 0.75 per cent. in one hour. Blyth[11] found that a 10 per cent. solution for four hours had no effect on anthrax spores. A twenty-four-hour exposure, however, prove deficient. He used the glass-rod method. On the gonococcus and micrococcus of abscess pus, Sternberg[9] found that the action of an 0.8 per cent. solution for two hours killed the organisms.

Alcohol.—From experiments on the germicidal effect of alcohol, Harrington[12] concludes: "Alcohol of any strength has absolutely no effect on anthrax bacillus; 60 to 70 per cent. alcohol is the most efficient strength against non-spore forming bacteria, i. e., *Staphylococcus pyogenes aureus* and *albus,* typhoid bacillus, bacillus of diphtheria, being usually effective in five minutes."

Salzwedel and Elsner,[13] using thread method, state that 55 per cent. (by weight alcohol) was most destructive to staphylococcus pus, requiring in fresh pus from five to six minutes to be effective. They state that this solution is not quite equal to a 1/1000 solution of bichlorid, but is as efficient as a 3 per cent. carbolic solution. Sternberg[9] found that with a two-hour exposure, a 95 per cent. alcohol was fatal to gonococci, while a 40 per cent. solution did the work on the micrococcus of abscess pus.

Hydrogen Peroxid.—In his work on the tetanus bacillus, Kyle[2] states that after a forty-eight-hour exposure to hydrogen peroxid the bacillus still grew. On the other hand, Gibier[14] finds, from experiments he has made with a 3.2 per cent. hydrogen peroxid solution in water on *Bacillus anthracis, Bacillus typhosus, Streptococcus pyogenes,* etc., that after some minutes of contact (exact time not stated) the bacteria could not be cultivated from bouillon, hence were destroyed.

Formaldehyd.—Shaw[15] determines that a 1/2000 solution of formaldehyd broth prevented the growth of *Bacillus pyocyaneus.* Pottevin[16] finds that 5 centigrams of formaldehyd to a liter of bouillon stops growth of *Bacillus diphtheriæ, pyocyaneus, typhosus* and the *Staphylococcus pyogenes aureus.* Burgess[8] concludes that on *Bacillus coli communis,* a 1/30 solution is destructive in one minute, a 1/50 solution in five minutes, and a 1/150 solution in thirty minutes.

Lysol.—Burgess,[8] who included lysol in his experiments on *Bacillus coli,* found that a 1/10 aqueous solution killed it in one minute, a 1/30 solution in five minutes, a 1/250 solution in thirty minutes and a 1/300 solution in one hour.

Boric Acid.—Burgess[8] also found that a saturated solution of boric acid was entirely wanting in antiseptic powers, no matter how long the exposure. Sternberg[9] came to a like conclusion from his work on gonococcus and micrococcus of abscess pus.

Phenic Acid.—On streptococci and staphylococci Tarnier et Vignal[6] state that a 3 per cent. aqueous solution of phenic acid is efficient in seventeen minutes, a 2 per cent. solution in eighteen minutes. Chamberland,[17] from his experiments, finds that anthrax bacilli are killed by a forty-eight-hour exposure to a 1/400 solution of phenic acid.

Salicylic Acid.--A 1/240 solution of salicylic acid for three minutes kills putrefactive organisms, according to Cabbot.[10]

Methyl Violet.—Stillings,[18] as his findings from experiments, states that methyl violet is three times as strong as bichlorid in its action on anthrax bacillus and quite as effective as it on staphylococcus pyogenes aureus.

Nicotin.—Herbert,[19] reviewing the work of Pécholier (1883) on the action of nicotin in alcoholic solution on bacteria; that of Vincent Tassinari de Pise (fumes of tobacco in 1888); and that of Vissalli (fumes of tobacco in 1888); and from added experiments of his own (nicotin in alcohol solution), says in conclusion that "nicotin does not appear gifted with very powerful antiseptic properties for 1/3 of a drop (sufficient to kill a pigeon in a few seconds) does not prevent the development of certain bacteria in 3 c.c. of bouillon." But he concludes from experiments of Tissinari on tubercle bacillus and spirillum of Asiatic cholera, and from his own on bacillus diphtheria that it attenuates the virulence of microbes. Junor[20] reports a case of tetanus cured by local application of infusion of tobacco.

Mercuric Cyanid.—Harrington,[21] using the thread method, found that a 1/1000 solution of mercuric cyanid had to act in thirty minutes to kill *Staphylococcus pyogenes albus,* while a three-hour exposure on *S. aureus* showed no antiseptic effect. Hence it is impractical.

Radium.--It was found by Van Buren,[22] from his experiments on *Bacillus typhosus, Bacillus pyocyaneus* and *Staphylococcus pyogenes aureus,* that radium, acting from eight to thirteen hours, was negative in antiseptic action. Pfeiffer[23] also shows its negative action on *Bacillus typhosus* and the cholera spirillum.

Collargol.—Fortesque-Brickdale[24] states "In solution of 0.5 per cent. and under, collargol has no bactericidal effect on *Streptococcus pyogenes* or *Staphylococcus pyogenes aureus* after a twenty-four-hour exposure to a one-day-old culture. (Plate Method.)" A 1 per cent. solution gave no growth.

Turpentine.—Marx[25] found that it required 1/500 turpentine acting for an hour to hinder the growth of anthrax. Forty minutes was required for *Staphylococcus pyogenes aureus.*

Glycerin.—Copeman,[26] from numerous experiments, fully covered by controls, on *Staphylococcus pyogenes aureus* and *albus, Streptococcus pyogenes, Bacillus anthracis, subtilis, coli communis, pyocyaneus, diphtheriæ,* and *tuberculosis* determines: "(1) No visible development of organisms employed takes place in presence of more than 30 per cent. glycerin in beef peptone broth; (2) all organisms, except coli and subtilis, are killed in less than one minute in the presence of 30 per cent. to 40 per cent. glycerin in the cold."

Potassium Permanganate.--According to Cabbot,[10] a 1/960 aqueous solution of permanganate potassium requires over six minutes to stop putrefaction in a putrefactive solution. Sternberg[9] found that 0.12 per cent. permanganate acting on gonococcus and micrococcus of abscess pus destroyed them.

BIBLIOGRAPHY OF ANTISEPTICS CONTAINING IODIN IN CHEMICAL COMBINATION.

Biniodid of Mercury.—On the *Staphylococcus aureus* and the *Streptococcus,* Tarnier and Vignal[6] have shown that a 1/1000 solution of biniodid of mercury is destructive in nine minutes; a 1/2000 solution in twenty-two minutes. On *Bacillus coli communis,* Burgess[8] states that "biniodid of mercury is by far the strongest and best antiseptic (of the ones he tried), and it is not affected by albumin." In his table he places 1/1000 solution effective in one minute; 1/5000 in five minutes; 1/20000 in ten minutes; 1/80000 in thirty minutes; 1/200000 in one hour.

Lithio-Mercuric Iodid.—Rosenberger,[27] working with lithio-mercuric iodid (34 per cent. mercury, 65 per cent. iodin, 1 per cent. lithium) and using thread method, found that on *Staphylococcus pyogenes aureus,* when threads were moist, 1/1000 solution for thirty seconds killed; 1/5000 for one minute did the same. When threads were dry, 1/1000 for one minute killed; likewise 1/5000 for three minutes. On *Streptococcus pyogenes* (dry threads) 1/1000 for thirty seconds killed; 1/5000 for thirty seconds killed; threads moist, 1/1000 for thirty seconds was effective; 1/5000 required two minutes. On anthrax bacillus 1/1000 solution was necessary for fifteen minutes when threads were dry, and for thirty minutes when moist threads were used. He concludes that this is a much more powerful germicide than the usual mercuric salts.

Iodoform.—The experimental results differ greatly from the clinical. A great deal of experimental work has been done on iodoform. Its action has been tested on various organisms by numerous investigators, and their findings seem to indicate that it possesses no bactericidal properties of any moment. The men who have so determined are Heyn and Rovsing,[28] Riedlin,[29] Baumgarten,[30] Kronacher,[31] Buchner,[32] Kunz,[33] Schnirer,[34] Lubbert,[35] and Tilanus.[36] On the other hand, the work of Mikulicz,[37] who, on adding iodoform to putrefying liquids, saw putrefaction sometimes stopped and sometimes to continue; that of Maylard,[38] who states that it retards but does not stop the development of anthrax bacillus; and that of Stohegoleff,[39] who found that tubercle bacilli inoculated on 5 per cent. iodoform bouillon were dead in forty-eight hours, seems to indicate that under certain conditions (i. e., where free iodin is eliminated) it has a slight antiseptic value.

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[11] Blyth: Proc. Royal Society, Edinburgh, 1884, vol. xii, p. 638.

[12] Harrington: Boston Medical and Surgical Journal, 1903, vol. cxlviii, p. 551.

[13] Salzwedel and Eisner: Berliner klin. Wochenschr., 1900, vol. xxxvii, pp. 496-500.

[14] Gibier: Verhandl. d. X. International Medical Congress, 1890, Berlin, 1891, V, 15 Abth., pp. 124-125.

[15] Shaw: Journal Hygiene, London, 1903, vol. iii, p. 162.

[16] Pottevin: Annales de l'Institut Pasteur, 1894, p. 804.

[17] Chamberland: Acad. de Science, Paris, 1883, vol. xcvi, p. 1088.

[18] Stilling: Lancet, London, 1891, 1, p. 872.

[19] Hebert: L'art méd., Paris, 1896, vol. lxxxiii, pp. 176-193.

[20] Junor: Edinburgh Medical Journal, 1866-7, vol. xii, p. 684.

[21] Harrington: Boston Medical and Surgical Journal, 1904, vol. cl, p. 43.

[22] Van Buren: American Medicine, 1903, vol. vi, p. 1021.

[23] Pfeiffer: Berliner klinische Wochenschrift, 1903, vol. xl, p. 641.

[24] Fortescue-Brickdale: Bristol Medico-Chirurgical Journal, 1903, vol. xxi, p. 343.

[25] Marx: Centralbl. f. Bakteriol. Jena., 1902, vol. xxxiii, p. 75.

[26] Copeman: Rep. Brit. Assn. Adv. Sc., London, 1896, p. 987.

[27] Rosenberger: American Medicine, 1904, vol. vii, p. 1021.

[28] Heyn and Rovsing: Fortschritte der Medicin, 1887, Bd. V, pp. 33-47.

[29] Riedlin: Arch. f. Hyg. München U. Leip., 1887, vol. vii, p. 310.

[30] Baumgarten: Berliner klinische Wochenschrift, 1887, Bd., vol. xxiv, p. 354.

[31] Kronacher: Münchener med. Wochenschrift, 1887, vol. xxxiv, p. 545.

[32] Buchner: Munchener med. Wochenschrift, 1887, vol xxxiv, p. 465.

[33] Kunz: Arbeiten a. d. Pathologische Institut Zu Konisberg, 1887.

[34] Schnirer: Wiener medicin. Presse, 1887, Nos. 36-38.

[35] Lubbert: Fortschritte d. medicin, Bd. V, 1887, pp. 330-345.

[36] Tilanus: Munchener medinische Wochenschrift, vol. xxxiv, p. 309.

Clinically, when the iodoform comes in contact with tissues, more free iodin is eliminated, hence the results are much better than experiments would indicate. Its use in tubercular joint injections needs no comment. Vinke[40] reports favorably in two cases of anthrax dressed with iodoform. Sormani[41] found by wounding rabbits and guinea-pigs and injecting them with tetanus bacilli and then treating them with different antiseptics that iodoform was the most active of all, and if applied at once tetanus did not appear. Pryor[42] reports thirty-seven cases of puerperal sepsis with but four deaths treated by packing uterus and widely opened cul-de-sac with iodoform gauze, free iodin being liberated and shown to be present in the urine.

Iodin.—The antiseptic action of iodin was discovered by Davaine[43] in 1873. He found that a 1/12000 solution caused the virulence of anthrax to disappear in thirty minutes. Tarnier and Vignal,[6] in their work on *Staphylococcus pyogenes aureus* and *Streptococcus pyogenes,* found that a 1/1000 solution of potassium iodid required over an hour to kill, a 1/500 solution required fifteen minutes, and a 1/300 solution required eight minutes. White[44] states that he has made a number of tests and observed that "in strength of 1/1000 iodin solution in bouillon no growth of streptococcus occurs. *Staphylococcus aureus* will not grow in strength of 1/5000." Davaine[45] determines that a 1/170000 solution of iodin in contact with anthrax blood for fifty to sixty minutes renders it harmless to inject into guinea-pigs. Sternberg[9] states that a 0.2 per cent. solution destroys gonococcus acting for two hours. Claudius,[1] in his article describing his method of sterilizing catgut by immersing in a solution of one part iodin, one part potassium iodid, and water one hundred parts, for eight days and then transferring to 3 per cent. carbolic acid to rinse off excess of liquid iodin, remarks that from his experiments he has found that a 1 per cent solution kills *Staphylococcus aureus* in three minutes and anthrax in twenty hours. He states further that such a long contact is unnecessary (1/5000 solution kills anthrax spores in a short time).

Clinically, iodin solutions have been used with excellent results in treating anthrax. Sereins[46] reported two cases of anthrax cured by injecting a 1/100 solution around and into pustule. Brochin[47] has also reported two cases successfully treated by the same method. Human actinomycosis has been cured by the daily injection of 2 c.c. of a 10 per cent. iodin solution, as shown by Gaucher.[48]

In concluding the bibliography, it is only necessary to call attention to the great number of different substances employed as antiseptics to show that, as yet, the ideal germicide is a negative quantity.

TECHNIC OF EXPERIMENTAL RESEARCH.

Solution Employed.—A solution of iodin in sodium iodid and water was prepared after the following formula:

Iodin, gms.	2.5
Sodium iodid, gms	5.5
Aqua (sterilized)	250 cc.

This gave a 1/100 solution. From this solution, by aqueous dilution, strengths of 1/200, 1/300, 1/500 and 1/1000 were made. In preparing the mother solution, accuracy was observed in weighing the iodin and sodium iodid. The same care was followed in making dilutions. The glass containers were sterilized.

Asceptícity of Solutions.—The varying strengths of solutions were now tested to see whether or not they were, of themselves, sterile. For this purpose the plate method was employed. Three drops of solution were used to inoculate a melted agar tube from which a plate was made. From each strength solution three plates were made. After incubating six days every plate was free from colonies, hence sterile. To confirm results inoculations from the different strengths were made on 6 per cent. glycerin potato and incubated six days. The result was again negative in character.

METHOD OF CONDUCTING EXPERIMENTS.

In conducting the several series of experiments, an effort was made to employ a method which would offer the minimum possibility of error, and, at the same time, approach, as nearly as possible, to the exact relation of bacteria to the body in disease. In other words, the media employed were solid in every case, and the growths on them were allowed to become marked, both in extent and thickness, before beginning experiment. Thus, by the thickness of the growth, the penetrating power of the liquid could be ascertained.

The microörganisms on which the action of the iodin solutions was tried were various enough to permit of definite deductions being made from the results on the antimicrobic action of iodin. These microörganisms were: (1)*Bacillus prodigiosus;* (2) *Bacillus anthracis* and spores; (3) *Bacillus tuberculosis;* (4) *Staphylococcus pyogenes aureus;* (5) *Streptococcus pyogenes;* (6) *Blastomyces dermatidis;* (7) *Actinomyces bovis.* On these various growths in the test tubes, the iodin solutions were deposited by means of a sterilized pipette until the surface of the growth was completely covered. After varying periods of time, which are designated in the tables, small loops of growth, thus acted on, were transferred to tubes of sterile media and well inoculated, and then put in incubator and watched for growth. No effort was made to wash the inherent iodin solution from the loops because of the danger of washing away the bacteria. For each time of exposure, four tubes were used, each one being covered by a control tube. It is well to note that the bacterial growths transferred were macroscopic and not microscopic in size.

EXPLANATION OF TABLES.

A, B, C, D=Tubes to which bacteria, acted on by solution, were transferred.

A′, B′, C′, D′=Control tubes inoculated with original healthy bacteria. The figures are based on the use of the unit 1 as the denominator of growth, being purely arbitrary and used for sake of comparison. It refers to the transverse extent of growths from smear and equals about ⅛ of an inch. 2=twice the denominator, 3=three times the denominator and so on.

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[38] Mayiard: Annals of Surgery, 1890, vol. xi, pp. 17-33.

[39] Stchegoleff: Arch. de méd. expér. et. d'Anat. Path., 1894, vol. vi, pp. 813-837.

[40] Vinke: St. Louis Courier of Medicine, vol. xiii, p. 125.

[41] Sormani: Riforma Medica, 1890, January, pp. 11-13.

[42] Pryor: New York Medical Journal, 1903, vol. lxxviii, p. 356.

[43] Davaine: Dictionaire Encyclopedique des Sciences med., p. 335.

[44] White: Amer. Jour. of Obstetrics, 1904, vol. xlix, p. 605.

[45] Davaine: Bull. Acad. de méd., 1880, 2 S., vol. ix, p. 763.

[46] Sereins: Union méd., Paris, 1887, 3 S., vol. xliv, p. 470.

[47] Brochin: Gaz. d. hôp., Paris, 1880, vol. liii, p. 1010.

[48] Gaucher: Ann. de Derm. et Syph., 1903, 4 S., vol. iv, p. 837.

0=No growth.

?=Slight growth, but not equal to 1-32 inch.

Time=Figures designating days of growth, i. e., Figure 1 means growth on first day or 24 hours after inoculation. Figure 2 means growth on second day or forty-eight hours after inoculation, and so on.

The strength of solution and time of exposure are designated in each table.

ANTHRAX EXPERIMENTS.

The following tables (Group 1) show the results of the experiments with anthrax cultures:

GROUP 1.—ACTION OF SOLUTIONS ON BACILLUS ANTHRACIS PLUS SPORES (TWO-DAY-OLD CULTURES*).

TABLE 1.—IODIN 1-1,000. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	.2	1.5	1.5	1.5	1.5	1.5	1	1.5
2	.5	2.5	2.5	2.5	2	2.5	2.5	3
3	2	3.5	3.5	3.5	2.5	3	2.7	3.2
4	4	4	4	4	3	3.5	3.5	3.5

TABLE 2.—IODIN 1-1,000. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	1.2	1.5	1.5	1.5	2.2	2	1	1.5
2	2	2.5	2	2	2.5	2.2	2	2.5
3	3	3.5	3	3	3.5	3	3	2.7
4	4	3.6	3.5	3.5	4.5	3.5	4	3

TABLE 3.—IODIN 1-1,000. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	.2	2	.2	2.2	0	1.2	0	2
2	.2	2.5	.2	2.7	0	2.5	0	3
3	.2	3.5	.5	4	?	3.5	0	4
4	.3	4.5	1	5	.6	4.5	?	5

TABLE 4.—IODIN 1-500. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	.3	1	0	1	?	1
2	.3	2.5	.3	2	0	1.5	.7	2
3	.7	3.5	1	3.5	?	2.5	.7	2.5
4	2	4.5	2	4.5	.5	3.5	2	3.5

TABLE 5.—IODIN 1-500. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	1.5	0	1.5	0	1
2	?	2	0	2.5	0	2.7	?	2
3	.2	3	0	3.5	0	3.5	?	3
4	1.7	4	?	4.5	0	4	.5	4

TABLE 6.—IODIN 1-500. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	0	1	0	.7	0	1
2	0	2.5	0	2	0	1.7	?	2
3	?	3.5	0	3	?	2.5	?	3
4	.2	4	0	3.5	.1	3	?	3.5

TABLE 7.*—IODIN 1-300. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	?	1	?	2.5	?	1.5	0	2.5
2	.5	2.2	?	3	?	3	0	3.5
3	1.5	3	.5	4	.1	3.5	0	4
4	2	3.5	1	4.5	.2	4	0	4.5

TABLE 8.—IODIN 1-300. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	0	1	0	1.5	0	1.5
2	?	2.5	0	2	?	2.5	?	2.5
3	?	3.5	?	3	.3	3.5	?	3
4	?	4.5	?	4	.7	4	?	3.5

TABLE 9.—IODIN 1-300. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	2	0	1.5	0	2
2	0	2	0	2.5	?	2	0	2.2
3	.1	3	0	3.5	?	3	0	3
4	.3	3.5	0	4	?	3.5	0	4

TABLE 10.—IODIN 1-200. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	1.5	0	1.2	0	1.5
2	0	2.5	.3	2.5	0	2.2	.7	2.5
3	0	3.5	1	3	0	2.7	1.3	3
4	0	5	1.7	4	?	3.5	2	3.5

TABLE 11.—IODIN 1-200. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	0	1	0	1.5	0	1
2	.2	3	0	2.5	0	2.5	0	1.5
3	.5	4	0	3	0	3.5	?	3
4	.7	4.5	0	4	0	4	?	3.5

TABLE 12.—IODIN 1-200. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	1.5	0	1	0	2.5
2	0	2	0	2.5	0	2.2	0	3.5
3	0	2.5	0	3	0	3	0	4
4	0	3	0	4	0	3.5	0	4.5

TABLE 13.—IODIN 1-100. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.3	0	1	0	1	0	1.5
2	0	2.7	0	2.5	0	2.5	0	2.5
3	0	3.5	0	3	0	3	0	3.5
4	0	4	0	3.5	0	3.5	0	4

TABLE 14.—IODIN 1-100. EXPOSURE 10 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	0	1	0	1.3	0	1
2	0	3	0	2.5	0	3	0	2.5
3	0	4	0	3.5	0	4	0	3
4	0	4.5	0	4	0	4.5	0	3.5

TABLE 15.—IODIN 1-100. EXPOSURE 9 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	0	2	0	1.5	0	1
2	0	2.5	0	3	0	3	0	2
3	.1	3.5	0	4	0	3.5	0	3
4	.2	4.5	0	4.5	0	4	0	3.5

TABLE 16.—IODIN 1-100. EXPOSURE 8 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	2	0	1.5	0	2	0	1.5
2	?	3	0	2.5	0	3.5	0	3
3	.7	4	?	3	0	4	.3	3.5
4	1	5	?	4	0	5	.5	4

TABLE 17.—IODIN 1-100. EXPOSURE 7 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	2	0	2	0	1.5	0	1.5
2	?	3	1	3.5	?	2.5	?	2.5
3	.5	4	1.3	4	.1	3.5	.3	3
4	1	5	1.5	5	.3	4	.5	3.5

CONSIDERATION OF EXPERIMENTAL EVIDENCE ON ANTHRAX.

1/1000 for *fifteen* minutes is negative in action.

1/1000 for *thirty* minutes is negative in action.

1/000 for *sixty* minutes shows an inhibitory effect. On first day A and C give 1/10 of control growth, while B and D show no growth. On second day there is no further development. The third day A shows no further development, B, a slight one, C shows points, and D, no growth. On the fourth day A, B, and C show a further development equaling 1/10 control growth, while D shows points.

1/500 for *fifteen* minutes exhibits an inhibitory effect. The first day A and C give no growth, B one equaling 1/3 control growth, and D, a very slight one. On second day there is a slight increase, A, B, and D showing small fractional growths, C being free from growth. On third and fourth days the increase is progressively more rapid, equaling about ½ control growth on latter day.

1/500 for *thirty* minutes gives a marked inhibitory effect. First day there is no growth. On the second day A and D each show a point, while B and C are free from growth. On the third day B and C still remain without growth, A and D showing a very slight increase. The inhibition is still extremely marked on the fourth day, A and D exhibiting a fair increase in growth, equaling about ¼ control, C remaining free from growth and B showing one point.

1/500 for *sixty* minutes shows a very marked inhibitory effect. On the first day there is no growth. On the second day D shows one point, while others are free from growth. On the third day effect still continues, A, C, and D showing points, B, free from growth. This continues the fourth day, A and C showing increase, equaling 1/16 of control growth, B is free from growth, D shows points of growth.

1/300 for *fifteen* minutes shows an inhibitory effect. D shows no growth throughout. On first day the rest show points. On second day there is a very slight increase. On third and fourth days there is a gradual increase, equaling about ¼ control at end.

1/300 for *thirty* minutes exhibits a marked inhibitory effect. On first day there is no growth. The second day points appear on A and D, B is free from growth, and C shows a slight one. On the third and fourth days A, B, and D show no increase in points. C shows a small fractional increase.

1/300 for *sixty* minutes presents a very marked inhibitory effect. B and D show no growth throughout. On the second day a very slight growth appears on C which does not increase on third and fourth days. On third day a very small fractional growth appears on A which increases slightly on fourth day.

1/200 for *fifteen* minutes shows a marked inhibitory effect. A is without growth throughout. On first day there is no growth. On second day B and D show fractional growth which increases rapidly on third and fourth days equaling about ½ control growth. On fourth day a very slight growth appears on C.

1/200 for *thirty* minutes exhibits a very marked inhibitory effect. B and C are without growth throughout. D is without growth until third day when a point appears which does not increase on the fourth day. On the second day a small fractional growth appears on A which increases slowly on remaining days, equaling 1/6 control growth on fourth day.

1/200 for *sixty* minutes shows no growth throughout.

1/100 for *fifteen* minutes shows no growth throughout.

1/100 for *ten* minutes shows no growth throughout.

1/100 for *nine* minutes shows a very marked effect. B, C, and D are without growth throughout. On A there appears on third day a very small fractional growth which increases very slightly on fourth day.

1/100 for *eight* minutes shows a marked inhibitory effect. On first day there is no growth. On second, points appear on A, while B, C and D are free from growth. On third day A and D show fractional growths. B gives a point and C is free from growth. On fourth day A and D increase slowly, equaling about 1/7 control growth. C is without growth and B shows no increase in growth.

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* All two day-old cultures except in Table 7.

1/100 for *seven* minutes exhibits a marked inhibitory effect. The first day there is no growth. The second day shows points on A, C and D, while B equals 1/3 control growth. On third and fourth days there is a fractional growth which increases slightly, equaling 1/6 control growth.

SUMMARY OF EVIDENCE ON ANTHRAX.

Considering first the strength of solution and time of exposure to same necessary to produce the death of *Bacillus anthracis* plus spores, the evidence shows that a 1/200 solution for one hour or a 1/100 solution for ten minutes procures death. An exposure to a 1/100 solution for less than ten minutes gives a growth. The second consideration or the inhibitory effect, depending as it does on the two factors, i. e., time of exposure and strength of solution, first shows itself after an exposure of the organism to a 1/1000 solution for sixty minutes. The inhibitory effect is marked. The effect is also shown by an exposure of fifteen minutes to a 1/500 solution, but to a lesser degree. As the time of exposure is increased, the inhibitory effect becomes more and more marked. Likewise, as the strength of solution employed is increased, the inhibitory action becomes progressively more powerful. If, after the death point is reached, we decrease the time of exposure, we again come into the sphere of diminishing inhibition.

SUMMARY OF EVIDENCE ON PRODIGIOSUS.

The details of the experiments with prodigiosus cultures are as follows (Group 2):

GROUP 2.—ACTION OF SOLUTIONS ON BACILLUS PRODIGIOSUS (FOUR-DAY-OLD CULTURES).

TABLE 18.—IODIN 1-1,000. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	2.5	2.5	2	2.5	3	3.5	3	2
2	3.5	3	3	3.5	3.5	4	4	4
3	5	3.5	4	4	4.5	4.5	4.5	5
4	6	4	4.5	5	5	5	5	6

TABLE 19.—IODIN 1-1000. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	2	2	3	3	2	2.5	2	2.5
2	3	3.5	4	3.5	3	3	3.5	3
3	4.5	4	4.2	4.5	4	3.5	4	4.5
4	5.5	4.5	4.5	5.5	5	4	4.5	5

TABLE 20.—IODIN 1-1,000. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	1	2	2	3	.5	2.5	1.5	1.5
2	1.5	3	3	4	1	3	2	2
3	2	4	3.5	5	1.5	4	3	2.5
4	2.5	5	4	5	2	5	4	3.5

TABLE 21.—IODIN 1-500. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	1.5	1	2	2.5	2	2	2	2
2	2.5	1.5	3	3.5	3	3.5	2.5	3
3	3.5	2.5	3.5	4.5	3.5	4	3	4.5
4	4	3	4	5	4.5	4.5	3.5	5

TABLE 22.—IODIN 1-500. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	.5	1.5	1	2	.2	2	.3	2.5
2	1	2	2	3	2	3	2	3.5
4	2.5	3.5	3.5	4	4	3.5	2.5	4
4	3.5	4.5	4.5	4.5	5	4	3.5	4.5

TABLE 23.—IODIN 1-500. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	.1	1.5	.3	2	.2	2.5	2	2.5
2	2.5	2.5	3	2.5	2	3.5	3	3
3	3	3	4	3	3.5	4	4	3.5
4	4	3.5	4.5	3.2	4.5	4.5	5	4.5

TABLE 24.—IODIN 1-300. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	.2	1.5	.2	2	.3	2	.5	2.5
2	2.5	2	1	3	1	2.5	1.5	3
3	3	3	2	3.5	3	3	3	4
4	4	4	3	4	4	4	4	5

TABLE 25.—IODIN 1-300. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	?	2.5	.1	2	.5	1.5	?	2
2	1	3	2	2.5	3	2.5	1	2.5
3	1.5	4	3	3	3.5	3	2	3
4	2.5	5	4	4	4.5	3.5	4	3.5

TABLE 26.—IODIN 1-300. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	?	1.5	?	2	?	2	?	2
2	.5	3	?	2.5	.5	3	1.5	2.5
3	2	4	?	3	2.5	4	2.5	3
4	2.5	5	?	3.5	3	5	3	4

TABLE 27.—IODIN 1-200. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	2	?	2.5	0	2	0	2.5
2	?	2.5	?	3	?	3	?	3
3	?	3	.1	3.5	.5	4	?	3.5
4	?	4	.3	4	1.5	4.5	?	4

TABLE 28.—IODIN 1-200. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	2	0	2.5	0	2
2	?	2	?	3	0	3	0	2.5
3	?	3.5	1	4	?	3.5	?	3.5
4	.5	4	1.5	4.5	?	4	1	4

TABLE 29.—IODIN 1-200. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	2.5	0	1.5	0	2	0	2.5
2	0	3.5	0	2	?	3	0	3.5
3	0	4.5	.3	3	.5	4	0	4
4	0	5	1.5	4	1.5	4.5	0	4.5

TABLE 30.—IODIN 1-100. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	3	0	2.5	0	2	0	2.7
2	0	4	0	3	0	3	0	3.5
3	0	4.5	0	3.5	0	4	0	4.5
4	0	5	0	4	0	4.5	0	5

TABLE 31.—IODIN 1-100. EXPOSURE 10 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	3	0	3.5	0	3.5	0	3.5
2	0	3.5	0	4.5	0	4.5	0	4.5
3	0	4.5	0	5	0	5	0	5
4	0	5	0	6	0	6	0	5.5

TABLE 32.—IODIN 1-100. EXPOSURE 9 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	2	0	1.5	0	3	0	2
2	0	2.5	0	2.5	0	4	0	3
3	?	4	.7	3.5	?	5	0	3.5
4	?	5	1.5	4	.2	6	0	4

TABLE 33.—IODIN 1-100. EXPOSURE 8 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	3	0	2.5	0	2.5	0	3
2	.2	4	.5	3.5	0	3	?	3.5
3	1.5	4.5	2	4	0	3.5	.3	4
4	2.5	5	3	5	0	4	.5	4.5

TABLE 34.—IODIN 1-100. EXPOSURE 5 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	.1	3	.1	2.5	.1	3	.1	2.5
2	2.5	4	2	4	1.5	3.5	2	3
3	3.5	5	3.5	5.5	3	4.5	3	4
4	4	5.5	4.5	6	4	5	3.5	5

CONSIDERATION OF EXPERIMENTAL EVIDENCE ON PRODIGIOSUS.

1/1000 for *fifteen* minutes is negative in action.

1/1000 for *thirty* minutes is negative in action.

1/1000 for *sixty* minutes shows an inhibitive effect, the experimental growth equaling less than ½ control growth the first day on A and C. This continues relatively the same on remaining days. B and D show no effect.

1/500 for *fifteen* minutes is negative in action.

1/500 for *thirty* minutes shows an inhibitive effect, the experimental growth equaling less than ½ control growth the first day. This effect becomes gradually less on second day. By fourth day control and experimental tubes are practically identical in amount of growth.

1/500 for *sixty* minutes shows an inhibitive effect on A, B, and C, the experimental growth equaling 1/7 control growth the first day. D is negative in action. From second day control and experimental growths are identical in extent.

1/300 for *fifteen* minutes shows an inhibitive effect, the experimental growth equaling 1/10 control growth the first day. This effect becomes gradually less until by the fourth day control and experimental tubes are identical.

1/300 for *thirty* minutes shows an inhibitive effect the first day, the experimental growth equaling 1/12 control growth. This effect becomes gradually less until by fourth day experimental and control growths are practically identical.

1/300 for *sixty* minutes shows a marked inhibitory effect first day, the experimental tubes showing a slight growth. This effect became gradually less until by fourth day experimental tubes show 2/3 of control growth. D, however, does not develop.

1/200 for *fifteen* minutes shows a marked inhibitory effect the first day, A, C, and D being negative, B showing slight growth. Marked inhibitory effect continues the second day when all experimental tubes show very slight growth. On third and fourth days the inhibitory effect still continues markedly, A and D showing no further development, while B and C show slight increase, equaling about 1/5 control growth on fourth day.

1/200 for *thirty* minutes shows a marked inhibitory effect. The first day there is no growth. The second day a slight growth appears on A and B, C and D negative. The third day inhibitive effect still continues, A, C, and D showing slight growth, B, marked increase. On the fourth day there is a gradual increase, the experimental tubes showing about 1/6 of growth on control tubes.

1/200 for *sixty* minutes shows a very marked inhibitory effect, A and D being negative in growth throughout. On second day C shows a very slight growth, B, negative. On third and fourth days B and C show gradually increasing growth equaling 1/3 control growth.

1/100 for *fifteen* minutes gives no growth.

1/100 for *ten* minutes gives no growth.

1/100 for *nine* minutes gives marked inhibitory effect. On first and second days there is no growth. On third day points appear on A and C, B shows a fractional growth, D is negative. On fourth day B and C show gradual increase, D, negative, and A showing points of growth.

1/100 for *eight* minutes shows an inhibitory effect. First day gives no growth. C is negative throughout. On second day growth appears which gradually increases up to the fourth day when it equals ¼ control growth.

1-100 for *five* minutes shows an inhibitory effect the first day, the experimental growth equaling 1/15 control growth. On the second, third and fourth days, this inhibitory effect becomes rapidly less. On fourth day the experimental growth is 4/5 control growth.

SUMMARY OF EVIDENCE ON PRODIGIOSUS.

In making a summary of the evidence, there are two factors to be considered: (1) The strength of solution and time of exposure to same necessary to produce the death of the microörganism; (2) the inhibitory action of solutions. Considering (1), therefore, we find that a solution less than 1 per cent., acting for an hour, does not destroy *Bacillus prodigiosus*. To cause the death of this organism it is necessary for a 1/100 solution of iodin to act for ten minutes. A shorter period of exposure, i. e., nine, eight and five minutes, gives a growth. On considering (2) it is readily seen that two items have to do with the inhibitory effect. These are, strength of solution and period of exposure. Thus, a solution acting for a certain period of time shows no inhibitory effect, but if the time of exposure is increased, such an effect appears. Conversely, as the strength of the solution is increased, the time of exposure necessary to produce an inhibitory effect becomes less. Bearing these two facts in mind, we find that in this series a slight inhibitory effect is first shown by a 1/1000 solution after an hour's exposure. A 1/500 solution begins to show this effect after thirty minutes' exposure; a 1/300 solution after fifteen minutes. Thus, progressively, as the time of exposure to each strength of solution is lengthened, and the strength of the solution itself is increased, the inhibitory action becomes more marked until the death point of the germ is reached. And, if we try to decrease the time of exposure necessary to produce death, we reach the inhibitory stage again.

TUBERCULOSIS EXPERIMENTS.

Tuberculosis experiments are detailed in Group 3.

CONSIDERATION OF EXPERIMENTAL EVIDENCE ON TUBERCULOSIS.

1/1000 for *fifteen* minutes shows no effect.

1/1000 for *thirty* minutes shows no effect.

1/1000 for *sixty* minutes shows no effect.

1/500 for *fifteen* minutes shows a slight inhibitory effect the first day. This effect becomes less on the second day and disappears on the third day. Experimental tubes and controls are equal on third and fourth days.

1/500 for *thirty* minutes shows an inhibitory effect the first day, A and B showing ½ control growth, while C gives a point and D is free from growth. This inhibitory effect extends slightly into the second day. On third and fourth days A and B equal control growth, C and D slightly less.

1/500 for *sixty* minutes presents an irregular inhibitory effect. The first day A and D are free from growth, C shows a point, and B equals control growth. The second day the inhibitory effect becomes rapidly less, A and C equaling control growths and remaining equal to the same on the third and fourth days while C and D show a rapid increase in growth which, on third and fourth days, does not increase, equaling less than ½ control growth.

1/300 for *fifteen* minutes shows a marked inhibitory effect the first day, there being no growth. On the second day the growth equals ½ control growth. On the third day the inhibitory effect is still slighter and on the fourth day experimental growth is but slightly less than control.

1/300 for *thirty* minutes shows a marked inhibitory effect. The first day there is no growth. A remains without growth throughout. On the second day growth appears which equals less than ½ control growth. On third and fourth days there is a rapid increase in growth. The experimental tubes equal 2/3 control growth on the fourth day.

1/300 for *sixty* minutes presents a marked inhibitory effect. There is no growth the first day. On the second day A, C,

GROUP 3.—ACTION OF SOLUTIONS ON BACILLUS TUBERCULOSIS (FOUR-DAY-OLD CULTURES).

TABLE 35.—IODIN 1-1,000. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	4	5	4.5	4.5	4.5	5	4	5
2	4.5	5.2	5	4.7	5	5.5	4.5	5.5
3	5	5.5	6	5	6	6	5	6
1	5.5	6	6	5.5	6.5	6	5.5	6.5

TABLE 36.—IODIN 1-1,000. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	4.5	4.5	4.5	4.5	3	4	3	4
2	4.7	5	4.7	5	4	4.5	4	5
3	5	5.2	5	5.5	5	5	5.5	5.5
4	5	5.5	5.5	6	5.5	5.5	6	6

TABLE 37.—IODIN 1-1,000. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	4.5	5	5	4	5	5	3.5	4
2	5	5.5	5.2	4.5	5	5.2	4	5
3	6	5.7	5.5	5	5.5	5.5	4.2	5.2
4	6.5	6	5.5	5.5	6	6	4.5	5.5

TABLE 38.—IODIN 1-500. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	1.5	4	3	3.5	2	4.5	2.5	3.5
2	2.5	4.5	4.5	5	3.5	5	3.5	4.5
3	3	4.6	5	5.5	5	5.5	4.5	5
4	3.5	5	5.5	6	6	6	5	5

TABLE 39.—IODIN 1-500. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	1.5	3.5	2	4	?	4	0	3
2	3.5	4	4	4.5	2.5	5	1	4
3	4	4.5	4	5	3	5.5	2	4.5
4	5.5	5.5	4.5	5.5	4	6	4	5

TABLE 40.—IODIN 1-500. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	3.5	3	3	?	3	0	3.5
2	4	4.5	5	4	2	3.5	2.5	4
3	4.5	5.5	5.5	5	2.2	5	2.5	5
4	5.5	6	6	6	2.5	5.5	2.5	5.5

TABLE 41.—IODIN 1-300. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	4.5	0	4	0	4.5	0	4
2	1.5	5	4	5	3	5.5	2	5
3	3	5.5	4.5	5	3.5	5.7	3	5.2
4	4	6	5.5	5	4.5	6	5	5.5

TABLE 42.—IODIN 1-300. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	3	0	3.5	0	4	0	3
2	0	3.5	1	4.5	2	4.5	2	3.5
3	0	4.5	2.5	5	2	5	3	4
4	0	5	4	5.5	2	6	4	5

TABLE 43.—IODIN 1-300. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	4	0	3	0	3.5	0	3.5
2	1	4.5	0	3.5	1.5	4	3	4
3	1.2	5	.1	4.5	2	5	3.5	4.5
4	1.5	5.5	.3	5	2.5	5.5	4	5.5

TABLE 44.—IODIN 1-200.—EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	4	0	2.2	0	3.5	0	3
2	?	4.5	2	4	.1	4.5	?	4
3	?	5.5	2.5	4.5	.3	5.5	?	5
4	?	6	2.5	5	1.5	6	?	5.5

TABLE 45.—IODIN 1-200. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	3.5	0	3	0	2.5	0	3
2	0	4	0	4	?	3	0	4
3	0	4.5	0	5	.2	4	0	5
4	0	5	?	5.5	.5	5	0	6

TABLE 46.—IODIN 1-200. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	4	0	4	0	3.5	0	3.5
2	0	5	0	4.5	0	4.5	0	4
3	0	5.5	0	4.7	0	5	0	4.5
4	0	6	0	5	0	5.5	0	5

TABLE 47.—IODIN 1-100. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	2	0	3	0	2	0	2
2	0	4	0	4.5	0	4	0	3
3	0	5	0	5.5	0	5	0	4
4	0	6	0	6	0	5.5	0	5

TABLE 48.—IODIN 1-100. EXPOSURE 10 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	2	0	2	0	3	0	2.5
2	0	3	0	3.5	0	4	0	4
3	0	4	0	4.5	0	5	0	5
4	0	5	0	5.5	0	6	0	6

TABLE 49.—IODIN 1-100. EXPOSURE 7 MIN.*

Day.	A	A′	B	B′	C	C′	D	D′
1	0	3	0	2.5	0	2	0	3
2	0	4.5	0	3.5	0	4	0	4
3	0	5	0	4.5	0	5	0	5.2
4	0	6	0	5	0	5.5	0	6

TABLE 50.—IODIN 1-100. EXPOSURE 6 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	3	0	3	0	3	0	2.5
2	0	4	0	4	0	3.5	?	3
3	?	5	0	5	0	4.5	.2	3.5
4	?	6	0	6	0	5.5	.5	5

TABLE 51.—IODIN 1-100. EXPOSURE 5 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	2	0	2	0	1.5	0	2
2	?	3.5	?	4	?	3	0	4
3	?	4	.5	5	?	4	0	4.5
4	?	5	.7	6	?	5	0	5

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* This was watched for a number of days, but no growth appeared on experimental tubes.

and D show a growth equaling 1/3 control growth, while B is free from growth. On third and fourth days this growth increases rather slowly, equaling on the fourth day about 1/3 control growth.

1-200 for *fifteen* minutes shows a marked inhibitory effect. First day there is no growth. On the second day points of growth appear on A and D which on third and fourth days increase scarcely any. On the second day growth appears on B and C which equals about ¼ control growth. This increases slightly on the third and fourth days, equaling about 1/3 control growth.

1/200 for *thirty* minutes shows a very marked inhibitory effect. First day there is no growth. A and D remain free from growth throughout. B is free from growth until fourth day when several points appear. On the second day points appear on C which on the third and fourth days give a slightly increasing fractional growth (1/10 control).

1/200 for *sixty* minutes shows no growth throughout.

1/100 for *fifteen* minutes shows no growth.

1/100 for *ten* minutes shows no growth.

1/100 for *seven* minutes shows no growth.

1/100 for *six* minutes shows a marked inhibitory effect. First day shows no growth. B and C are free from growths throughout. On the second day D shows points and A is sterile. On the third day A gives a point, D a slight fractional growth. On the fourth day A shows two points, D, a slight increase, equaling 1/10 control growth.

1/100 for *five* minutes exhibits a very marked inhibitory effect. On the first day tubes are free from growth. D is free from growth throughout. On the second day A, B and C show points. On the third and fourth days A and C show no increase in growth, while B shows a small fractional one, equaling ⅛ control growth.

SUMMARY OF EVIDENCE ON TUBERCULOSIS.

The evidence shows that to produce the death of the *Bacillus tuberculosis* an exposure to a 1/200 iodin solution for one hour or to a 1/100 solution for seven minutes is necessary. An exposure of less than seven minutes results in a growth. When we come to the consideration of the inhibitory effect we find that a 1/1000 solution for one hour is without effect. Inhibition begins to be shown slightly by a 1/500 solution for fifteen minutes. From this point on, as the period of exposure is increased and as the solution employed becomes of greater strength, the inhibitory effect becomes progressively more and more marked until the death point is reached. Then, if we try to lessen the time of exposure to the necessary strength, we come into the sphere of inhibition which decreases as the exposure decreases.

(To be continued.)

UNILATERAL TRANSITORY PARALYSIS OF THE ABDUCENS.

WITH REPORT OF CASES.*

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Paralysis of the sixth nerve occurs with comparative frequency in ophthalmic practice. It may be unilateral or bilateral alone or associated with lesions of other ocular nerves. The causes may be many, including syphilis, congenital or other traumatism, diabetes, central lesions, etc. One etiologic factor, however, has heretofore been questionable and has created considerable controversy; that is, hysteria. Some doubt the existence of a hysterical abducens paralysis, and Möbius[1] denies the existence of hysterical paralysis of the eye muscles at all, and ascribes such paralyses to traumatism; and considers, he states, the "apparent" abducens paralysis to be a spasm of the internal recti. On this point, however, I think we have indisputable proof, as evidenced by cases reported by such authorities as Leber, Parinaud, Nonne and Beselin, Guttman, Duchesne, Roder and Wilbrand.

Within the past twelve months there have come under my observation four cases of unilateral abducens paralysis, which were transitory in character and not associated with paralysis of other ocular nerves or with any tangible disease of any sort.

Case 1.—Miss Nora Y., aged 9 years, school girl, was brought to the Jewish Hospital Dispensary, June 14, 1904, by her mother, who stated that, three days before, the child had complained of seeing double and the mother then noticed that the child's eyes were crossed. The child had had severe headaches all winter, but the mother was positive that there was no crossing previous to three days before she came.

Examination showed deviation of left eye inward and inability of patient to carry eye outward past median line. The amount of inward deviation of left eye was to the extent of one-third, the cornea being covered by inner canthus. All other ocular movements normal. Pupils normal and react to light and accommodation. V. O. D. = 14/15. V. O. S. = 14/20. Fundus normal. Refraction normal. Fields normal. General appearance good. Color healthy. Mother stated that the child had "brain fever" when 1 year old. Otherwise has been in good health. Mother has four children, all healthy; no miscarriages. No history of syphilis.

Thinking, perhaps, there might possibly be some central trouble or some hysterical signs I might have overlooked, I referred her to the neurolgic clinic. Dr. Schwab could elicit no sign or symptom of hysteria or otherwise. In the face of these facts we still considered the probability of the condition being functional and suggested to the little one that it would get better with medicine. Three-grain doses of sodium bromid were given three times daily. On June 21, patient returned and was able to carry eye outward about 30 degrees. June 30, 1904, patient returned cured.

Case 2.—Clara A., aged 12, school girl, came to Washington University Eye Dispensary, Sept. 6, 1904. On previous day she noticed blurred vision and diplopia. Parents noticed at same time that eyes crossed. The child was apparently healthy and strong; has had usual diseases of childhood. No history of syphilis or of traumatism. Examination shows deviation of right eye inward and inability to carry right eye outward past median line, in fixing with left eye covered or with both eyes open. All other ocular movements normal. Pupils react to light and accommodation. Had worn glasses for headaches for past three years. V. O. D. 0.5 D. cyl. ax. 90° = 14/15. V. O. S. 0.62 D. cyl. ax. 90° = 14/12. Fundus normal. Refraction +2. No signs of hysteria or other disease.

Patient was treated with three grain doses of sodium bromid and suggestion, and asked to return in a few days. Did not return until Sept. 21, but with complete resolution.

Case 3.—Maggie S., aged 28, came to office Oct. 15, 1904, with paralysis of left external rectus, which came on suddenly two days before. She stated that about a week before she received a sudden shock by witnessing a street car accident, that she grew suddenly dizzy at the time and nauseated, but felt well after that until two days before coming to office. She is now extremely nervous, but no definite hysterical signs could be elicited. Pupils react to light and accommodation. V. O. D. = 14/300 — 4.5 D. S. ○ — 0.5. D. cyl. ax. 120° = 14/25. V. O. S. = 14/25 + 0.5 D. cyl. ax. 90° = 14/15.

Ten grain doses of sodium bromid were given three times daily and October 25 there was complete recovery.

Case 4.—Minnie V. D., aged 16, came to office May 9, 1905. Two weeks before had tingling of whole left side of head; this lasted one week. When tingling subsided, she noticed that she saw double. She has been troubled with headaches since going to school. She has had usual diseases of childhood; no history of syphilis. Has always been nervous. Present condition: Inability to carry right eye outward past median line, either with left eye closed or with both eyes open. In state of rest, right eye deviates inward. V. O. D. = 14/25. V. O. S. = 14/20. Fundus normal, fields normal. Fauces anesthetic, cornea slightly so. Patient giggles at slightest provocation. Ordered compound syrup of hypophosphites. May 16, 1905, there was no improvement in patient's condition. Ordered sodium bromid 5 grain doses three times daily. Patient did not return until June 17, 1905, when complete resolution had taken place.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Graefe-Saemisch: Handbuch der Gesammten Augenheilkunde, vol. viii, Chap. xi, p. 11.

Borel[2] reports a case of "true hysterical paralysis of external rectus muscle." The motor disturbances predominated in his case, sometimes in the right and sometimes in the left. In the field of fixation the lateral fixation was 43 degrees inward and 41 degrees outward in the right, and 37 degrees inward and 41 degrees outward in the left eye, which does not indicate a weakness of right rectus muscle, but a failure of all associated movements to right. Again, he states, "at a distance in the median plane homonymous diplopia was observed; nearer, single vision was established, still nearer cross diplopia appeared." These are symptoms of contracture of convergence.

Parinaud[3] says that Samelsohn stated to him that he had seen a case of hysterical paralysis of the sixth pair. Leber[4] and Schwab[5] report cases of bilateral abducens paralysis following typhoid convalescence in the former, there being albuminuria.

Guttman, Cohn, Landenberg, Bernheimer and others report cases of bilateral abducens paralysis in diabetes, which recovered on improvement of general condition. Wilbrand[6] observed abducens paralysis in two nervous women without a deviation inward. In directing the eye straight ahead there was no diplopia. When, however, the eye was directed outward, the eye of the paralyzed side remained fixed while that of the normal side followed the movement of the fingers. In these cases were also present photophobia, blepharospasm and a number of other nervous symptoms.

Röder[7] published, in 1891, a case in which a young 17-year-old girl had a mixed anesthesia, abducens paralysis and mydriasis left. Pupil did not respond to light or accommodation. There was paralysis of accommodation, monocular diplopia and contracted visual field. Patient got well by suggestion.

Freund and Rie[8] report that there occurred, in two cases of cerebral hemiplegia in children, following a new attack of illness (associated with fever and convulsions), a paralysis of the abducens which disappeared in a short while. Schweigger[9] reports a case of contraction of the interni with limitation of movements of the externi. Nonne and Beselin[10] report a 24-year-old patient with "grand hysterie" with hypalgesia, hypasthesia and diminished sense of taste, smell and hearing on left side, with a spastic ptosis and paralysis of left abducens. Patient unable to carry left eye outward past median line. After several attempts, however, by fixing head and manipulating a mirror which patient was looking into, left eye was finally carried outward; but immediately lapsed into former condition.

I am sorry that I did not know of this mirror test at the time I examined my cases, but I do not believe, however, that it would have affected the result.

In conclusion, I maintain that these cases prove that a functional (or hysterical, if you will) paralysis of the abducens does occur; that it may be unilateral or bilateral, and that there need necessarily be no other hysterical signs or symptoms evident, all of which is of the greatest importance from a diagnostic, as well as a prognostic, standpoint.

DISCUSSION.

Dr. H. Stillson, Seattle, Wash., said that he had observed that the ability to rotate the eye outward depends largely on one's individual facility, and that the education of one's external recti is much more difficult than the education of one's internal recti. The examination of eyes with Stevens' instrument often surprises one at the difference in the rotation at different times; a rotation outward at one sitting being very different from that of a subsequent reading. Dr. Stillson thinks, therefore, that some cases mentioned as paresis of the external recti may be put down in the class of hysteria or in the class of cases modified by one's lack of facility, and that in those patients who have recovered rapidly the recovery may be due to the education of the external recti.

PROGRESSIVE AXIAL MYOPIA.

ITS PREVENTION AND CURE BY APPROPRIATE TREATMENT OF THE INTERNAL AND EXTERNAL RECTI MUSCLES; WITH REPORT OF CASES.*

F. S. CROCKER, M.D.

CHICAGO.

It must be admitted that, while the science of ophthalmology, as a whole, has shown a remarkable advance in recent years, our knowledge of the etiology, and particularly the treatment, of progressive myopia is little, if any, greater than it was twenty or thirty years ago.

Various eminent authorities, during recent years, have described what they considered the principal factor in its causation, while others have studied exhaustively the gross and microscopic tissue changes that may be present in the myopic eye; and still others have suggested many ways of bettering the hygienic surroundings and increasing the comfort of the myope; yet no one, to my knowledge, has ever suggested a definite form of treatment for the prevention or cure of this unfortunate condition.

It has been stated by Cohn that 10 per cent. of the blindness of inmates of public institutions in Germany is directly due to an advancing myopia; and Tschering, in Copenhagen, estimates the proportion of myopes in the community at 8 per cent.

In this country, where we possess every facility, and the skill and inclination to do the best refraction work, and in spite of the excellent school hygiene that is nearly everywhere maintained, it is well known to all ophthalmologists that myopia is steadily increasing.

This is more noticeable, of course, in the centers of learning and industry, where a large and increasing necessity for close work is imposing its penalty on all but the more perfect eyes.

It is expedient, then, that we should direct our efforts to the perfection of some means of checking the progress of this dread destroyer of sight and happiness.

To this end I wish to submit a plan of treatment.

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[2] Affections Hystériques des muscles de l'oil. Arch. d'Ophthal. vol. vi, 1886.

[3] Ocular Manifestations in Hysteria. Norris and Oliver System of Diseases of the Eye.

[4] Schmidt-Rimpler: Nothnagel's Handb. d. Spec. Path. u. Ther.

[5] Interstate Medical Journal, April, 1902.

[6] Wilbrandt & Sanger: Sehstörungen.

[7] F. Weiss: Montssch. f. Pschiat. und Neur., 1899, vol. xi, No. 6, p. 420.

[8] Klinische Studie über die Halbseitige Cerebrale Lähmungen der Kinder, 1891.

[9] Klinische Untersuchungen über das Schielen, 1881.

[10] Kontractur und Lähmungszustaude bei Hystérie. Festschr des Artzi ver in Hamburg.

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

evolved, in greater part, from my own experience, and employed with a very gratifying degree of success for the past five or six years.

Briefly, this treatment consists, in addition to the usual routine of correcting refractive errors and vertical imbalance by glasses, and strict attention to the general health, of properly regulated exercise of the internal recti muscles with prisms, and the careful administration of galvanism, locally.

In exceptional cases the above is found inefficient and must be supplemented by operative measures, consisting of tenotomy of the external rectus of one or both eyes.

I am well aware that none of these procedures are new, yet, after a thorough search through a very extensive literature, no mention was found either in special articles or text-books of any one of them having been advised or used in the same manner and for the same purpose as will presently be described.

Both muscle exercise and operative procedures are recommended in extreme cases for relief of the asthenopic symptoms that accompany progressive myopia, and, as a matter of fact, it was while using them for this purpose that I first became aware of their efficiency in preventing the onset, or checking entirely the progress of the disease itself.

As an illustration, the following is quoted from the recently published sixth edition of "Diseases of the Eye," by Edward Nettleship, and it would seem to cover what has been done along these lines:

> Preponderance of the external over the internal recti, insufficiency of convergence, if not cured by partially correcting glasses, may be treated by the division of the external rectus of one or both eyes, but not until after an effort has been made to strengthen convergence by means of properly regulated prismatic exercise.
>
> For this purpose the patient fixes his gaze on a point of light twenty feet away, while the strongest prisms, base out, with which the patient can fuse the light, are placed in a spectacle frame.
>
> After regarding the light a few moments, the eyes being still fixed on it, the prisms are raised and the convergent effort relaxed; after a few moments the prisms are again lowered before the eyes, and this alternate lowering and raising of the prisms, and the consequent stimulation and relaxation of convergence persisted in for five minutes.
>
> These exercises should be repeated three times daily, and the strength of the prisms increased as the patient is found to be able to fuse higher ones. By this procedure the power of adduction is frequently carried to 100 degrees within a few weeks, with a great relief of the asthenopia.

It will be noticed in the above quotation—and the same is true of other writers—that, while these or similar measures are advised for relief of painful symptoms accompanying myopia, nothing is said regarding their effect on the progress of the disease.

It was my custom in the first years of practice to treat all cases of exophoria, whether accompanying myopia or not, by giving the patient prisms of different strengths to use at home, with printed instructions for their guidance, and seeing them at the office only at infrequent intervals, or at the completion of the treatment. By this method gratifying results were obtained in a certain proportion of cases, but there was a considerable number who from one cause or another did not carry the treatment to a successful termination. Either they did not use the prisms understandingly or, not seeing an early and decided improvement in their symptoms, discontinued their use too quickly. Another, and more serious, defect in this method was finally discovered to be that whatever good results were obtained were not in the majority of cases permanent.

One or two of the cases that will be reported at length illustrate this not only as regards the exophoria itself, but in connection with the development of myopia.

DESCRIPTION OF THE TREATMENT.

Realizing that the poor results in some cases were probably due to a lack of thoroughness in applying the treatment, it was decided to keep the patient constantly under observation during its course, and, having in mind the tonic and stimulative properties claimed for the interrupted galvanic current, this was used in connection with the exercises. Better results were soon apparent, and it was found that by continuing the treatment sufficiently long the exophoria was permanently cured in practically all cases, and that without resort to operation. A complete description of the treatment as now used follows:

The patient is given a single square prism, usually 10 degrees, or weaker if necessary, with which to begin the exercises at home. A small candle or gas flame that does not illuminate the surroundings too much is placed on a level with the eyes, and not less than twenty feet away. It is desirable to have the room darkened by lowering the shades, and that it should not contain too many articles that might cause reflections.

It is supposed that distance glasses have been ordered when needed, and with these in place the patient is instructed to produce a crossed diplopia by holding the prism over either eye, base out, and then to attempt to again fuse or bring the two lights into one.

If a prism of the proper strength is given and it is rotated until the two lights are at the same level, little difficulty will be experienced in getting them together.

Since the eye that is covered by the prism is the one that converges in overcoming this artificial diplopia, it is necessary to divide the exercise between the two eyes, say two minutes with the right eye, then two minutes with the left, removing the prism as often as the lights merge into one. This is to be done twice, and, if convenient, three times each day, but not for a longer time than two or three minutes with either eye, and if very noticeable pain is caused the time should be shortened. Each strength of prism is used at least two or three days, or until the lights can be fused very quickly and without apparent effort. When this is accomplished with the 10 degrees, a 3 degrees is added and the two used in the same manner; then the 3 degree is replaced by a 5 degree, and, finally, all three are used, being held together conveniently by a rubber band. When the 18 degrees can be overcome, the 5 degree and 3 degree are replaced by another 10 degree, and the same process may be repeated until a sufficient power of convergence has been obtained, the minimum in the writer's practice being 48 degrees.

The average length of time necessary to reach this point is between three and four months; and during this period the patient should make three or at the least two visits at the office each week to receive local treatments.

The battery or wall plate should be equipped with a milliampere meter, rheostat and automatic interrupter. A double-eye electrode with long handle is attached to the positive pole and the well-moistened sponges applied over the closed upper lids, being held in this position by the patient, while the opposite pole, carrying a moistened sponge, is placed at the nape of the neck by the operator.

The interrupter is so adjusted as to produce about thirty or forty interruptions per minute, and the handle of the rheostat is turned gradually until a faint flash is seen by the patient with each break in the current.

The duration of treatment is five minutes, and it should never cause any discomfort or pain; the slight blurring of vision that may follow its application passes away in a very few moments.

Aside from the intrinsic value of the electricity, its use enables the surgeon to be sure that his instructions regarding the use of the prisms are being fulfilled, and this, in my experience, has been of vital importance.

SUMMARY OF CASES.

Before reporting any cases at length, it may be of interest to present a brief summary of fifty cases taken from the writer's private records, as illustrating with what degree of uniformity certain conditions and symptoms are present. In selecting these cases, none were taken that have been seen for the first time within the past two years, and only those in which the myopia was undoubtedly progressive, this latter being determined by a history of recently failing vision either with or without glasses, and a consideration of the other symptoms. The figures given below are approximate:

Seventy per cent. were females; 30 per cent. males.
Average age at which glasses were first worn, 17 years.
Youngest age at which glasses were first worn, 8 years.
Oldest age at which glasses were first worn, 34 years.
Cases in which no glasses had been worn, 20 per cent.
Cases in which previous glasses were fitted by oculist, 30 per cent.
Cases in which previous glasses were fitted by optician, 50 per cent.
Amount of myopia present, 0.25 to 14.00.
Number of cases requiring operations, 3.
Astigmatism present in 90 per cent. of all eyes, 0.25 to 4.00.
Typical fundus changes in 30 per cent. of all eyes.
Cover test positive in all cases.
Average abduction, 9 degrees.
Average adduction, 10½ degrees.
Highest abduction, 16 degrees, with adduction of 18 degrees.
Highest adduction, 18 degrees (two cases), with abduction 11 degrees and 16 degrees.
Lowest abduction, 4 degrees, with adduction, 8 degrees.
Lowest adduction, 7 degrees, with abduction, 7 degrees.

The following is a record of only the more important symptoms:

Soreness or pain in the eyes themselves, 28 cases.
Some form of headache in all cases.
Panorama headaches and car sickness, 30 cases.
Photophobia in 30 cases.
Nervousness, 20 cases.
Temporary diplopia, 5 cases.

Of course, it is not claimed that every patient not already myopic, who may exhibit any or all of the above conditions, will develop myopia or even show a decrease of hyperopia, if present; nor that every case of myopia (which certainly during its development was progressive) is due to an abnormal converging power, since the general conditions of health and certain occupations may be the determining causes. This is evidenced by a large number of cases that have become stationary, without local treatment of any kind, but simply through change of occupation or improvement in health. On the other hand, the above findings would seem to justify us in promulgating the rule that any case of myopia accompanied by asthenopic symptoms or headache, with deficient converging power and a true exophoria, as shown by the cover test, may be safely classed as progressive, and should receive appropriate treatment, directed not only to a relief of symptoms, but to the abatement of the disease itself.

It must be understood that a number of etiologic factors other than those mentioned may be present in every case, such, for instance, as heredity (the term being used here in the sense that certain inherited anatomic peculiarities may predispose to the acquirement of a myopia); astigmatism, on the importance of which in this disease Ball, in his recently published and very excellent textbook, lays so much stress; and congestion, induced by stooping or other unfavorable positions assumed by the patient, either through habit or from necessity in certain occupations.

We should then, as heretofore, advise our myopic patients as to the proper use of their eyes; also as regards the amount of work and its illumination; and, further, it is of the utmost importance that their general condition of health should receive very careful consideration if we would get the best results from our local treatment.

In a majority of cases reported in this paper, it has been possible to make recent observations, and in none of these has there been an increase of the myopia sufficient to warrant a change of lenses.

The following cases are typical, and are reported at length merely to emphasize certain points in the treatment, and to direct your attention to some of the difficulties of its application:

Case 1.—Ella D., aged 9 years, Aug. 25, 1898. Never has worn glasses. Could not see writing on blackboard from rear seat. General health good. Has supraorbital and temporal headaches after reading a few minutes. Car sickness marked.

V. L.=20/50. V. R.=20/50. Abduction, 7°; adduction, 12°. Cover test shows divergence. Refraction with homatropin. L.+1.25, ax. 90=20/30+R. 1.50, ax. 90=20/30+.

These glasses were ordered, with instructions for patient to return in two weeks.

Nov. 13, 1898: Patient can see much better with glasses, but still has same symptoms, although headaches are not quite as frequent or severe.

Distant vision, 20/30+ both eyes.

Prism exercise was advised and a full set of prisms was given to use at home. Prisms were returned at end of six weeks. She could overcome the diplopia produced by 48°, and headaches had ceased.

Nov. 25, 1899: Patient came in complaining of headaches and failing distant vision.

Vision with glasses: L.=20/50— R.=20/50—.

Refraction with homatropin: L.—1+1.25 ax. 90=20/30+ R.—1+1.50 ax. 90=20/30+.

Abduction, 7°; adduction, 18°; cover test +.

Prism exercise again advised, but not used.

July 28, 1903: Again complains of poor distant vision.

Abduction, 7°; adduction, 16°.

Refraction with homatropin: L.=—1.75—1.25 ax. 180°=20/30+R.—2—1.50 ax. 180=20/30.

Prism exercise and galvanism for ten weeks, with relief of all symptoms.

Sept. 10, 1904: Came in to have broken glass replaced. No symptoms. Abduction, 7°; adduction, 35°. Vision, 20/30+, both eyes.

Case 2.—Anton R., 12 years old. First seen Oct. 11, 1899. Has noticed failing distant vision for last year and a half. Eyes ache after studying and are frequently inflamed. General health good.

V. L.=20/100. V. R.=20/100+. Abduction, 4°; adduction, 8°. Cover test +. Refraction with atropin: R.—1.25—0.50 ax. 90=20/15— L.—2.25=20/20+.

Muscle exercise was advised, but not taken at this time.

Jan. 27, 1902: Vision with glasses: 20/200, each eye.

Refraction with homatropin: L.—3.50—0.50 ax. 90=20/15. R.—4.50=20/20+.

Myopic crescent marked; no other gross changes. Muscle exercise and galvanism, three months.

Oct. 19, 1904: Last seen. Vision with glasses better than 20/20 in each eye. No symptoms.

Case 3.—Miss O. R., 15 years old. First seen Nov. 13, 1900. Worn glasses since 8 years of age; fitted by optician, and changed by him twice for stronger ones. Has nearly constant pain in eyes, and frequent supraorbital headaches. Photophobia. Floating spots before both eyes. Mother always near-sighted. Present glasses —10.00 both eyes. V. 4/200, each eye. With glasses, V.=20/200, each eye. Refraction with homatropin: L.—14—1.50 ax. 120=20/40. R.—14—1.50 ax. 90=20/50+; abduction, 10°; adduction, 16°. Cover test +.

Muscle exercise and galvanism were given fourteen weeks, with relief of all asthenopic symptoms.

Dec. 10, 1901: In answer to a request to come in, she wrote as follows: "My eyes are getting along nicely, and I have had no trouble with them this winter."

Case 4.—Mrs. B., 44 years old. Seen Nov. 3, 1899. Worn glasses ten years. Has had them changed frequently by opticians. Has quite severe pain in eyes after a few minutes of sewing, reading or any near work. Nearly constant supraorbital and temporal headaches. Car sickness. Photophobia. She has not been without a headache for any length of time in twenty-five years. Has had three pelvic operations (the exact nature of which was not learned) for the relief of nervousness and headache, but without any benefit, so far as she could see. Is extremely nervous and suffers much with insomnia. Appetite good. Appears perfectly healthy, and weighs nearly 200 pounds.

Present glasses, L.—3.50. R.—4.50.

Vision with glasses, 20/50+, each eye. Abduction, 10°; adduction, 18°. Cover test positive.

Refraction with homatropin: L.—3.00—2.00 ax. 90=20/30+. R.—3.50—2.25 ax. 20=20/20—1 (letter; +1) added to above for reading.

Myopic crescent and thinning of pigment layer, but no other visible fundus changes. Glasses were ordered, No. 2, shade smoke. Prism exercise and galvanism were given at the office three weeks, when patient was compelled to leave for her home in Wisconsin. As she could not come in again for several months, prisms were given for home use. In March, 1900, was using 50° prism, and felt more comfortable in every way, but still complained of the headaches.

A tenotomy of the right external rectus was done in May, 1900.

In June the same operation was performed on L. external rectus.

This relieved entirely the headaches, and up to August, 1903, there was no recurrence, and no necessity for a change of distant glasses.

Case 5.—Hattie K., 12 years old. First seen Jan. 27, 1900. Wearing glasses fitted by optician one year ago, —1.12 both eyes. Has frequent supraorbital headaches, most severe over right eye. Photophobia, conjunctival hyperemia. Has been kept out of school on account of nervousness. Vision L.=20/60. V. R.=20/70+. Abduction, 5°; adduction, 10°. Cover test +.

Refraction with atropin: L.+3.25 ax. 95=20/30+. R. +2.50 ax. 85=20/20—.

Muscle exercise advised and prisms used at home, with relief of headaches for the time being and great lessening of nervousness.

Jan. 18, 1902: Came in complaining of failing distant vision and same symptoms as before. Refraction with homatropin: L.—1.25+3.25 ax. 95=20/30+. R.—2+2.75 ax. 85=20/20—.

Muscle exercise again given, but with the addition of galvanism. All eye symptoms disappeared and school was resumed March 28, 1905. Has had no recurrence of headaches or other symptoms, and only slight nervousness. Vision with glasses, same as three years ago..

Case 6.—Miss M., aged 23 years, seamstress; Oct. 29, 1900, V. L.=6/200. V. R.=10/200.

Is very nervous, otherwise general health good. First glasses fitted by optician one year ago, but not worn recently. Within last few months has been getting very "near-sighted."

After sewing for a short time has "drawing sensation between the eyes and extending to back of head." Eyes ache and are often inflamed. Photophobia; abduction, 12°; adduction, 12°. Cover test +. Refraction with homatropin: L.—10.00—2.50 ax. 180=20/40+. R.=—7.00—300 ax. 180 =20/50—.

Muscle exercise and galvanism relieved eye symptoms, and to a great extent the nervousness.

April 20, 1902, patient was requested to come in. Vision was the same or a trifle better, and no symptoms were complained of.

Patient has never lost any time from her sewing on account of her eyes.

It is reasonable to suppose that without treatment this patient would have developed a still higher degree of myopia, perhaps with the loss of useful vision, as the fundus changes were already quite marked.

I feel justified in basing the following conclusions on the results so far obtained:

1. The most important etiologic factor in a very large number of cases of progressive myopia is an insufficient power of convergence.

2. It is immaterial, in so far as the question of treatment is concerned, whether this inadequate converging power is the result of some anatomic defect in the shape or position of the orbit, or whether it is due to a fault in the insertion or innervation of the extrinsic ocular muscles.

3. In all cases in which destructive fundus changes have not already resulted in too great a loss of vision it is possible to check the progress of the myopia or in the proper sense of the word to effect a cure.

4. Since we have no means of knowing who among our young patients will develop a myopia which may lead to great impairment of vision or perhaps blindness, it should be our constant care in practice, and especially with those of us who have to do with the examination of the eyes of children in the public schools, that, in addition to the correction of refractive errors, the eye muscles should receive due attention, and, when found defective, proper prophylactic treatment instituted or advised.

5. For obvious reasons none but specially qualified legal practitioners of medicine should be allowed to prescribe glasses for, or in any way treat, myopia.

DISCUSSION.

Dr. G. C. Savage, Nashville, Tenn., expressed his inability to explain just why some cases of myopia are progressive, and whether or not the want of converging power predisposes to this increase. He illustrated his understanding of the convergence of myopic eyes on the blackboard. The myopia is, say, 3 degrees. Dr. Savage believes that there is a definite relationship between the tenth and the third (the accommodative and convergence) centers in the brain that the accommodation of myopic eyes is effected not by the conjugate centers, but by the basal centers. Now, without accommodation there may be convergence, but he does not believe that it is volitional if the myopia is 3 diopters or more. Unless there is no necessity for activity of the ciliary muscles in near vision, the tenth conjugate brain center is quiet. But without convergence there would be diplopia. Now this is an abnormal or fusional convergence effected by the right and left third basal centers. That may tend toward increasing the myopia, but how much he is not able to say. The thing to do for these eyes, however, is to correct the myopia in full and to advise that the correction be worn for all distances if the patient is young. When the myopia is corrected for distance and the same is worn for near, the accommodative center becomes active, and the third conjugate center becomes active, and convergence is effected by the volitional center and not by the fusional or basal center. Dr. Savage believes that when there is no need for volitional accommodation there is only fusional convergence.

Dr. F. S. Crocker thought it likely that all agree with Dr. Savage that it is the proper thing to correct the myopia fully in nearly all cases, but Dr. Crocker did not think that that has anything to do with the arrest of progress of the myopia. Fifty per cent. in his experience have been fitted by opticians, and he said it is a common experience to find that the optician overcorrects myopia, yet it is progressive.

THE NON-TOXIC AMBLYOPIAS.*

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I believe that the non-toxic amblyopias can be better studied if considered under three heads: 1. Those cases of amblyopia exanopsia due, as is usually believed, to the inability to use corresponding areas of the retina at the same time. This may be due to high refractive errors, to improper balance of the extraocular muscles, or to a non-development of the fusion center *in the cerebrum.*

2. That large group characterized by irregularly contracted but constant fields, impaired vision with careful tests, often only perceiving moving objects, but never interfering with locomotion or similar acts, frequently monocular diplopia, etc., etc., and known as the hysterical amblyopias.

3. That similar but sufficiently different group to justify their place in a separate class, characterized by impaired vision, contracted fields for white and colors always retaining their normal relationships, i. e., no reversal, and being proportionate to the visual acuity; these cases are usually designated as anesthesia of the retina.

Then, lastly, we have the group due to traumatism, often where there is evidence of pathologic changes of the fundus in the form of an old rupture of the choroid or retinal hemorrhage that has left the parts of the fundus uninvolved healthy, *but vision has not returned.* These cases are closely allied to the group just preceding, differing only in their etiology and the limited results that can be brought about by treatment.

The diagnosis of the cases of amblyopia exanopsia is not usually difficult, the defective vision, the apparently normal fundus, the one eye squinting frequently, and the high refractive error in one or both eyes usually renders the case clear from the first. It is difficult to decide whether the squint is due to the defect in vision or the reverse, but in a large proportion of cases the former is doubtless the case.

What shall we do in these cases? I do not believe, when we prescribe lenses and turn the patient away without any other treatment or advice regarding the amblyopic eye, that we have done our full duty, providing the patient is under 40 years of age. Of course, the younger our patient the greater the chances of bringing about permanent improvement, but cases like the one recently reported by St. John Roosa, where a man of 46 lost his seeing eye, and after five years the vision in his amblyopic eye had improved from 20/200 to 20/30 with an appropriate lens, the near vision improving much more rapidly than that for distance, and the several cases of this kind found in ophthalmic literature encourages us to try to improve these eyes.

I have tried numerous devices, such as covering the good eye for one or two hours daily, the amblyoscope, etc., but have found the convex glass cure, as recommended by Fronmuller in 1857, the most satisfactory. I can not do better than to quote his directions in full:

> In this sort of exercise, printed types are best suited as visual objects, since in them there is a change from letter to letter, and, therefore, the attention must be directed uninterruptedly to the object, and mistakes, which have slipped into the estimate of what is perceived, appear immediately by the context, and therefore, invite correction. These printed types must, of course, be well illuminated, and must moreover, be projected on the retina under a large visual angle, in default whereof they appear, even in slight torpor of the light-perceptive apparatus, as images which can not be deciphered. They must, therefore, be chosen large, and brought near the eye. But in order to see as clearly as possible at short distances, convex glasses are usually needed, as the amblyopia exanopsia is, as a rule, accompanied by weakness of the apparatus of accommodation. Convex glasses are, moreover, under all circumstances very useful, as, by an apparent brightness of the retinal images, they increase the distinctness of the perceptions and facilitate the choice of test-types. It is, therefore, the custom to employ them in all cases, at least at first, and to distinguish the exercise in general with the name of treatment by convex glasses. The weakest convex glass must here be first ascertained, which enables the affected eye, the other one being closed, to decipher larger printed types (Jaeger, No. 12-20) at a distance of from 8-12 inches. With this glass the patient must now undertake, two or three times a day, exercise in reading, at first for five minutes, but gradually increasing the time, but should never push the attempt so far as to excite symptoms of fatigue, pain, congestion, or inflammation. On the whole this method of treatment, particularly in the higher degrees of amblyopia, demands in many cases great patience and perseverance, as it is often very long before any perceptible effects make their appearance. Finally, however, the power of vision often increases in favorable cases in very rapid progression. It is then time to pass to weaker glasses, and by lengthening the periods of exercise to rise to smaller and smaller test-types. Sometimes the progress is all at once arrested, and the power of vision does not improve, in spite of all that can be done. We should not then lose courage! for all at once it again advances, and we finally are able to employ glasses which are weaker by many numbers, or we may even reach a point where glasses are found to be superfluous. If the eye has become so far cured that ordinary printed type may be read fluently with weak convex glasses or without any, the reading exercise must still be continued for a time, in order to confirm the cure, and prevent relapses.

In some of these cases my results have been surprisingly good, in others less so, but in all cases where I could command the co-operation of the patient there has been some improvement.

With the hysterical amblyopias the diagnosis is, as a rule, not difficult, the concentrically narrowed field of vision with reversal for colors being characteristic. There are diseases in which we have this contraction, such as atrophy of the optic nerve and glaucoma, but without the reversal for colors. It may seem superfluous to call attention to this, but in their incipiency it often taxes the resources of the most skillful to say whether a disc is normal or not, and it is here that the exact perimetric measurements give us valuable aid, for in the nervous types the degree of contraction is practically equal in all meridians, whereas in the diseases mentioned it usually advances, with irregularly reentering angles toward the point of fixation, as is so tersely pointed out by Swanzy.

Parinaud says:

> This concentric contraction of the field is also found in some cases of cerebral tumor and without neuritis, or it may result from intracranial pressure associated with certain forms of extensive cerebral meningitis; also it is not infrequently observed in epilepsy, and in this latter disease the diagnosis is often difficult, especially where there is temporary amaurosis, which is undoubtedly a manifestation of epilepsy, but unaccompanied by convulsive attacks. This is the same condition that Feré reports as characteristic of the amblyopia following epileptic attacks, i. e., the contracted field not accompanied by dyschromatopsia, especially the peculiar inversion of the color field.

The varying, never constant symptoms usually manifested by all hysterical subjects should be remembered, especially the symptoms of the hysterical amblyope, such as the contracted field with reversal for colors, the varying degrees of diminished vision, frequently monocular, the failure of accommodation, the scotoma and hemiopia, and the less frequent photophobia, blepharospasm, ptosis, etc.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

The treatment consists in building up the patient's general health, by cold baths, plenty of outdoor exercise, tonics, electricity, the correction of any error of refraction, etc. These cases all recover, but some of them tax our skill and patience to the uttermost.

Then, we have those cases known as anesthesia of the retina, of which etiologically we have two classes, those of unknown cause and those due to traumatism. Charcot and Leber have asserted that these cases are of a hysterical character and place the seat of the disease in the brain and not in the retina, but do not the results of treatment prove that the trouble is in the retina?

These cases, as recently pointed out by Fox, are characterized by partial loss of vision for near and distance, contracted fields with retention of the normal color relationship, i. e., no reversal. The fundus is normal and refractive errors usually very slight. This usually comes on suddenly, but there may be a gradual loss of vision, and this is not accompanied by photophobia, blepharospasm, anesthesia of the cornea, etc., as the hysterical cases so often are. The traumatic cases are seen after the patient has recovered from an injury, such as a blow on the eye from a fist, or a cork from a bottle, etc. There is usually considerable amblyopia, with concentric contraction of the field, which may continue for a long time, while the ophthalmoscopic appearance may be normal; or there may be a lesion, such as rupture of the choroid, but the lack of vision is much greater than the ophthalmoscopic lesion leads us to expect.

I probably can illustrate better by describing a case recently treated:

Nellie F. was shot with a rifle ball over the right eye, October 8; two weeks later the ball could be felt on the crest of orbit at junction of outer and middle thirds. Small pigment spots could be seen in peripheral portion of retina and a small horseshoe shaped line of pigment about as large as the disc and on the nasal side of same. November 2 she counted fingers at 5½ feet; on January 7, fingers at 3 feet; after using high frequency current five minutes, at 5½ feet; January 11, fingers at 8 feet; after high frequency, 12 feet; January 14, fingers at 18 feet; after high frequency, 20/200. This continued until March 1, vision having reached 15/120, but could not be improved beyond this.

I do not think that there is any doubt that there existed anesthesia of the retina due to traumatism. Of course, there was, in addition, a rupture of the choroid, as shown by the ophthalmoscope, which accounts for the limited improvement.

The treatment of these anesthesias is electricity, which cures all the non-traumatic cases and benefits them; and, while the galvanic current seems to meet all the requirements, the faradic and high frequency are equally as efficient, and I think the latter is the most useful. The electrode should be applied over the closed lids, when the unipolar current is used. The bipolar is equally efficient. In applying the latter the patient can hold the other electrode in his hand. With the reflex amblyopias due to irritation of branches of the fifth nerve and other causes, such as intestinal parasites, I have had no experience.

DISCUSSION.

Dr. G. C. Savage, Nashville, stated that within the past two years he has had under his care a patient who goes to prove that the amblyopia of squint is mental and not ocular. The patient was a railroad man, but how he got into the service Dr. Savage does not know. He had one blind eye and one good one, the blind eye turning in toward the nose. He was on a train approaching Nashville, going up a steep grade, when a cinder penetrated the cornea and lens, producing a traumatic cataract in the good eye. The next morning he was taken to Dr. Savage's office almost entirely blind. The lens grew more and more opaque. In the meantime he had only the other eye to depend on, and it swung straight while the injured eye turned in toward the nose. In less than ten days the vision arose from 10/200 to 20/30. Every one of these cases should impress on physicians the fact that the blindness of the squinting eye is mental and not ocular. The first thing that should be done is to correct the muscle error, not by complete tenotomy, but by partial tenotomy and advancement, then the physician will never be confronted later by that patient with one eye looking in the opposite direction. The patients should be treated by operative measures first, and then the vision in the blind eye should be developed. The amblyoscope is, of course, a splendid instrument for that purpose. Atropin may be used in the good eye so that near vision with it will be impossible. Dr. Savage emphasized the necessity for first correcting the focal and muscle errors, thus making it possible to have binocular single vision, and then beginning training the blind eye. Dr. Savage mentioned a case of hysterical amblyopia. About six years ago a woman became totally blind in both eyes. Her actions led Dr. Savage to believe that the condition was hysterical. Pupillary reaction was gone. He told her with great positiveness that she would recover, that she would not be long in recovering, and that she would recover just as suddenly as she had lost her sight. One evening, when she was brought in by her sister, he said, "If you are not seeing by morning I am going to have you hypnotized." That night he received a telephone message to come to the boarding house where she was stopping. The patient was sitting there happy and radiant, and seeing as well as she had ever seen in her life.

Dr. Dudley S. Reynolds, Louisville, said that a very common class of cases which, if not entirely ignored, are at least accorded insufficient attention are those cases of injury due to concussion, railroad accidents, trauma amblyopias. In these cases there is gradually increasing peripheral limitation of the field of vision and at the same time there is gradual reduction of the acuity of perception. He has known of cases of this kind in which no recognition of the nature of the trouble occurred for a year or for a year and a half after the accident, when it was noticed by the patient that the field of vision was narrower, or that acuity of perception was obtunded. Dr. Reynolds disagreed with Dr. Moore that no ophthalmologic indications are present. While these may be slight, they are nevertheless distinct. He is sure, too, that amblyopias that are non-toxic traumatic amblyopias, are not benefited by any form of treatment. They are very common and in some instances progressive, leading to entire or nearly entire blindness.

Dr. William Campbell Posey, Philadelphia, spoke in favor of the amblyoscope in developing vision in the squinting eyes of children. He has used it a great deal in the last few years and has found it a very valuable means of re-establishing binocular vision. In order that the treatment with this instrument should be efficacious, it is necessary that it should be employed before the child has arrived at the age of six years; if it be postponed until after that age the results will be disappointing. It should be remembered that treatment for the correction of squint can not be begun too early, and even at the age of one year, if the squint has been diagnosed, atropin should be used in the good eye, with a view to blurring its vision and inviting the patient to use the squinting eye. Some clinicians instill atrophin into both eyes. While when used in this way the spasm of accommodation may be overcome and the relationship between accommodation and convergence re-established, the vision in the squinting eye is not improved, and the chief value which may be gained from the employment of the drug is not attained. At the age of 2 years the proper glasses should be put on the child, the lenses being selected by retinoscopy. Mr. Worth orders glasses at even a younger age, but Dr. Posey thinks that as the frames must be bound on the head by tapes, there is some danger in such young subjects, in interfering with the proper development of the bones of the face, and possibly with the eyes themselves, from pressure. The amblyoscope may be used at the age of 3 or 4 years, and if employed persistently, the results obtained are very gratifying.

Dr. S. D. Risley, Philadelphia, declared that, in the management of squint occurring in early childhood we should not be unmindful of the somewhat limited group of cases in which the convergence is not due to the usual error of refraction, but is associated with, and probably caused by a central blind spot. It is not possible to demonstrate the presence of this in very young children, but its existence should be suspected when the well-known methods of treatment fail to correct the deviation. Dr. Risley has a number of times been able to verify this diagnosis after the child was old enough to permit a demonstration of a macular scotoma. He agreed with Dr. Posey and Dr. Moore that all cases of strabismus, when the deviation is due to refraction error, should be corrected by glasses very early in life. When seen early and when the correction is accurately made, there need be but little difficulty in securing binocular vision, even without the aid of the amblyoscope. Dr. Risley expressed surprise to hear Dr. Savage give credit to Dr. Worth for devising the use of atropin in the good, or fixing eye, to compel the use of the deviating eye. Dr. Risley has used the drug in this manner during his entire experience and the method did not originate with him so far as he knows. He called attention to the fact that in amblyopia of the deviating eye impaired vision may be due to the peculiar error of refraction, or to commencing disease in the macula, and the apparent amblyopia disappear as soon as these are corrected. Which eye shall deviate may be determined by the greater impairment of vision produced by the higher refraction error or by asymmetrical corneal meridians, for example; or it may be by a faulty attachment of one or more muscles to the globe, a condition which is often foreshadowed by certain deformities in the skull which lead to abnormalities in the shape of the orbit. It is obvious, therefore, that in the study of strabismus or other defects of ocular balance each case must be considered separately. We can formulate no law by which all cases are to be compared. We can not hope to secure by Worth's amblyoscope, or by any other instrument, binocular single vision until the refraction error has been accurately corrected, and not then in the presence of macular scotomata, or in cases where the anatomic relation of the muscles is at fault. In these last named cases the only hope is in prudent surgical interference.

Dr. Leartus Connor, Detroit, stated that there is another class of cases, perhaps somewhat rare, in which nothing appears to account for the amblyopia occurring after previously good sight other than malnutrition, presumably of the retina. A year ago last October a man over 60 years old came to Dr. Connor with a history of good health previous to the past four months, when he had been gradually losing sight, until his vision was reduced to 6/200 in one eye and 8/200 in the other. The ophthalmoscopic image showed nothing except that the retinal artery was distinctly smaller in either eye than normal. The field of vision was very decidedly restricted. The refractive errors had been perfectly corrected. The only thing that constitutionally seemed to have any bearing on the case was a persistent indigestion. Dr. Connor employed vibratory massage on the eyeball and within a month vision was 20/200, and at the end of three months the patient could read Jaeger No. 1 and had 20/20 vision for distance. The only two factors observed in the case were the diminished blood supply to the retina and the poor digestion. The case puzzled Dr. Connor at the time and he is not absolutely clear about it yet, but the patient's improvement certainly followed the improved nutrition of the retina. Putting this observation with others. Dr. Connor is inclined to think that in not a few cases there is impaired digestion and interference with nutrient processes which tend to diminish the power of the special senses.

Dr. T. W. Moore said that from Dr. Savage's remarks he inferred that Dr. Savage has been able to produce binocular vision in these cases in which the patients were over 6 years of age. Dr. Moore has tried it in a few cases, but has absolutely failed. He thinks that has been the usual result. Recently he has only tried to increase the vision in the blind eye in patients over 6.

EXPERIMENTAL AND CLINICAL EVIDENCE OF DYNAMIC (SPASTIC) ASTIGMATISM.*

F. B. EATON, M.D.

SAN FRANCISCO.

Dynamic astigmatism may be defined as a condition of the eye due to dynamic changes in its media which prevent homocentric rays from being brought to a focus on the retina.

That such dynamic changes occur there is a preponderance of evidence and opinion on the part of Javal,[1] Georges Martin,[2] Landolt,[3] Dobrowolsky,[4] Oliver,[5] Noyes[6] Panas[7] and others. Among authors who deny this condition I note only Bull[8] and Tscherning.[9] The authors in the first group, while stating briefly a belief in the existence of the condition, are nearly all silent as to its clinical significance, implying, apparently, indifference to it in this respect.

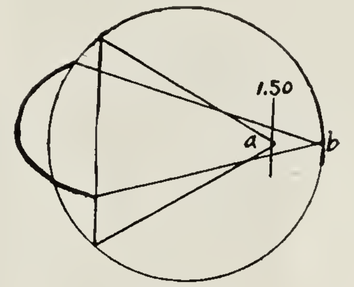

Fig. 1

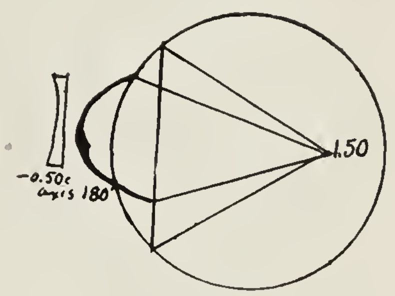

Fig. 2

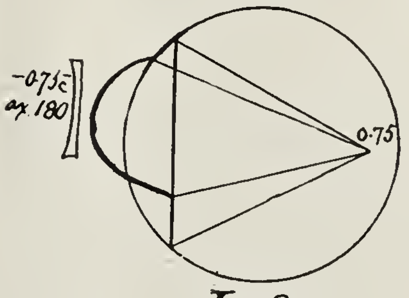

Fig 3

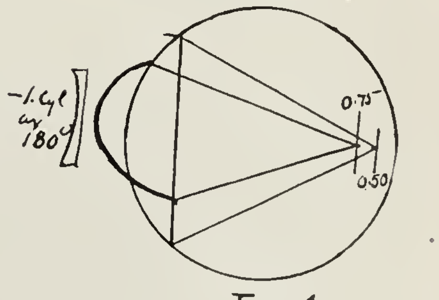

Fig 4

As far as I know, no one has gone so carefully and exhaustively into the subjective phenomena pointing to dynamic astigmatic contractions as Georges Martin[10] of Bordeaux, who published a series of papers entitled "Etudes sur les Contractions Astigmatiques du Muscle Ciliaire," which were afterward collected and published in a small volume of about 200 pages. He records in detail about 150 cases in 300 eyes, and the volume is dedicated to Javal and Schiotz. In it the subject is presented with the utmost minuteness of observation and record in nearly every aspect in which it is possible to view it. When Martin's papers appeared, seventeen years ago, they attracted my attention because I observed facts clinically which apparently corroborated his. I was not convinced, however, though again and again, in the years following, in doing refraction work, I was reminded of the subject by phenomena similar to Martin's records.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Annal. d'Oculistique, t. 88, p. 33, July, 1881, p. i.

[2] Ibid., 1886-1887.

[3] Refraction and Accommodation of the Eye, pp. 301, 302.

[4] Arch. f. Ophth., xix, p. 51, 1868.

[5] Norris and Oliver, vol. iv, p. 430.

[6] Diseases of the Eye, 1890, p. 111.

[7] Traité des Maladies des Yeux, vol. i, p. 141.

[8] Annal. d'Oculistique, Feb., 1892.

[9] Optical Physiology (English Transl.)

[10] Annales d'Oculistique, 1886-1887.

It was not until 1902 that I began systematically to record these observations, and I was startled to find how accurate were his records when duly analyzed. In comparing his findings with mine, I found a difficulty owing to his peculiar method of marking his astigmatic dial and his trial-frame cells, and probably this has proved an obstacle to others in this country, since we follow the mathematical protractor.

To save time in recording cases, Martin adopted certain signs of abbreviation. To indicate that the dial lines appear equal, he wrote the sign ⊙ which exists in typography, especially in works on botany. If a line on the dial appeared clearer than the rest, he wrote the sign ○, writing by the side of it the number of degrees of said line. The principal portion of Martin's treatise deals with three forms of dynamic contractions: *Contractions rénitentes,* which I translate tonic contractions; *contractions élastiques,* which I translate clonic contractions, and *contractions résistantes,* which, of course, are the same in English. About half of the treatise deals with what Martin terms "associated partial contractions," or astigmatic contractions in an astigmatic and "active" eye, producing, by the law of associated movements (Vulpian), a functional astigmatism in the other, "passive" and non-astigmatic eye.

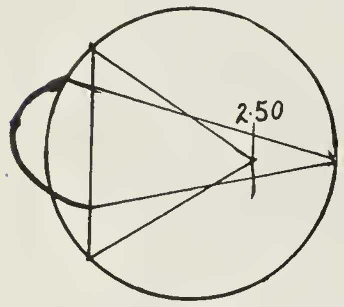

Fig. 5.

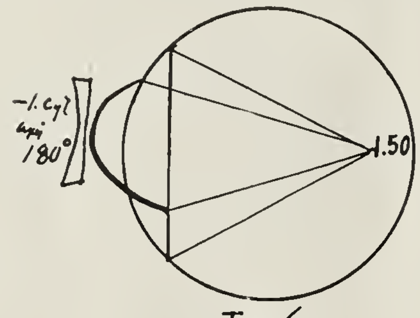

Fig. 6.

This paper permits me only to outline Martin's clinical methods and findings, to adduce some of my own, and to describe briefly certain subjective and objective investigations of my own and other eyes, which apparently prove dynamic astigmatism caused by the accommodative apparatus on the one hand, and by the extra-ocular muscles on the other.

I present first some simpler examples of Martin's cases, using the notation of our own charts and trial frame, but premising that I do not assume the correctness, as he did, of Javal's dictum of 1887, that the corneal astigmatism constitutes, almost without exception, the total astigmatism. I therefore select some of the cases in which atropin was used three or more days.

Miss ——, aged 17. Intense chorionic blepharitis. Javal (ophthalmometer), 1.50 D. to rule. O. D. V. 1/1?? Em. ⊙ w.+ 0.50s. ⊙ 90.
w.—0.50c. ax. 180° ⊙ 1/1?
w.—0.75c. ax. 180° ⊙ 1/1
w.—1.00c. ax. 180° ○ 180 1/1?
Under atropin, w.—1.50c. ax. 180° ⊙ 1/1

Martin's tests may be graphically analyzed thus:

Under atropin the course of the rays is as in Fig. 1, *a* being the position of the focal line of those passing through the vertical, and *b* those through the horizontal meridian. Fig. 2 represents their path before the use of atropin with—0.50c. ax. 180° before the eye. Here the —0.50c. ax. 180° has thrown the vertical meridian rays back to that extent (myopia 1.00 D.) where, by a dynamic astigmatic contraction affecting the horizontal meridian rays, all rays meet at —1.00 D., the result being a myopia of 1.00 D. with equalized appearance of the astigmatic chart (⊙), but vision of 1/1?

Fig. 3 shows the path of the rays with a —0.75c. ax. 180° before the eye.

Now, the vertical meridian rays are thrown back to that extent, but the contraction affecting the horizontal meridian rays has relaxed; i. e., according to Martin the contraction is elastic (clonic); for, at the very first test, with no lens before the eye the chart lines were equal, and the myopia 1.50 D., the contraction has relaxed 1.50 D. —0.75 D. = 0.75 D., and the result is a myopia of 0.75 D. with the chart lines equalized (⊙) and V. = 1/1. Fig. 4 shows the path with —1.00c. ax. 180° before the eye. Here the vertical meridian rays have been thrown back so that in that meridian there remains only 0.50 D. of myopia. But now the contraction affecting the horizontal meridian rays does not relax, the rays still meet at 0.75; hence the horizontal line on the chart becomes the clearest. According to Martin, there is, therefore, a tonic (rénitente) contraction of 0.75 D. affecting the horizontal meridian. The result is astigmatism and V. lessened to 1/1.

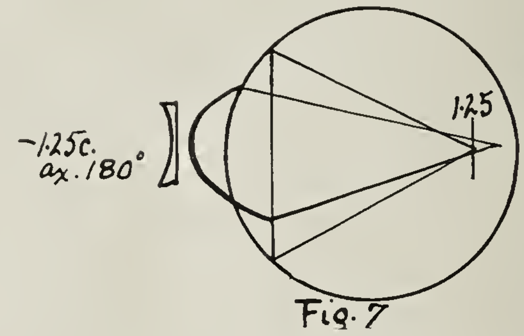

Fig. 7

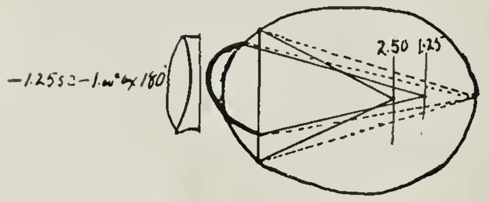

Fig. 8.

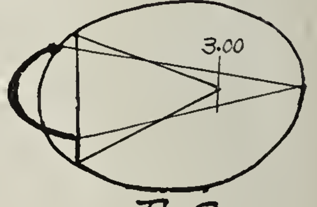

Fig. 9.

A more striking case of Martin illustrates a much higher degree of tonic contraction:

L., aged 9. Corneal astigmatism 2.50 D. to rule.

Without atropin O. D. V.=2/5? $\bigcirc_{90}$; w.—1.00c. ax. 180°. ⊙ V. 1/2.

Without atropin O. D. V.; w.—1.25c. ax. 180° $\bigcirc_{90}$ V. 1/2.

Without atropin O. D. V.; w.—1.25s.⌢—1.00c. ax. 180° ⊙ V. 2/3.

Fig. 5 shows the path of the rays under atropin, producing simple myopic astigmatism.

Fig. 6 shows the path of the rays before the use of atropin, with —1.00c. ax. 180 degrees before the eye. The cylinder has thrown the vertical meridian rays back to a focal point of 1.50 D. But the test now showed equalized chart lines, and vision only improved to 1/2. Martin therefore concludes that an astigmatic contraction of 1.50 D. affected the horizontal meridian lines, producing ⊙ but leaving a myopia of 1.50 D.

Fig. 7 shows the path of the rays with —1.25c. ax. 180 degrees before the eye. This cylinder has thrown the vertical meridian lines back to the focal point, 1.25 D., but the contraction affecting the horizontal meridian lines has relaxed (clonic), and the vertical line of the chart is the clearest.

Lastly, with —1.25s.⊃—1.00c. ax. 180 degrees, the chart lines are equalized and vision becomes 2/3, equal to the vision under atropin with full correction by —2.50c. ax. 180 degrees. The contractions of the horizontal meridian thus neutralized are shown in Fig. 8; the black lines indicate a myopia in the vertical meridian of 2.50 D., and the tonic contraction affecting the horizontal meridian rays, of 1.25 D. The dotted lines indicate both the effect of the cylinder on the vertical meridian rays, and the disappearance of all contraction in the horizontal meridian under atropin.

The highest degree of dynamic astigmatism I have seen was in the following case:

W., aged 41. April 4, 1904, complained of defective vision and severe headaches. He has never worn glasses. He has been exposed late at night to electric light. Eyes are very irritable.

Examination.—V. O. C. = 21/29 ⊙$_{90}$. Neither minus or plus cylinders or spheres improved vision. Hyoscin hydrobromate .25 per cent. for 48 hours.

V. O. D. w.—3.00 cyl. ax. 5°=21/10???, ⊙
V. O. S. w.—3.00 cyl. ax. 175°=21/16, ⊙

The path of the rays with cycloplegic in O. D. is shown in Fig. 9.

Since both spheros and cylinders were refused before the use of the cycloplegic, there was a tonic dynamic contraction affecting the 5° meridian rays of 3 D.

A year later, skiascopy gave the same refraction in each eye, and Javal O. S. 1.25 to rule. Fig. 12 shows the path of the rays under atropin in 1894, in O. D.

January, 1905, aged 21. She has worn, for near only, a pair of +1.25 cylinders, axes 90°; has done much drawing. O. S. mucopurulent conjunctivitis.

Trial case: O. D. V. w.+1.50s.⊃—1.25c. ax. 170°=21/16, ⊙
O. S. V. w.+1.50s.⊃—1.25c. ax. 10°=21/16. ⊙

The path of the rays in O.D. in 1905 is shown in Fig. 13, which, when compared with Fig. 12, shows that in 1905 there was a contraction in the O. D., changing the principal meridians from 10 degrees and 100 degrees to 170 degrees and 80 degrees. Also that there was a general contraction of 0.25 D., and a tonic dynamic contraction in the meridian of greatest refraction of 0.75 D. It might seem well that a cylinder of 1.25 D. was accepted in 1905, as against one of only 0.50 D. accepted under long use of atropin in 1894. But the discomfort and irritation of the eyes and the conjunctivitis favor the original atropin correction. How often, after careful correction of compound hyperopic astigmatism, we are forced to increase the sphere, and to decrease the strength of the cylinder.

That Javal was himself the subject of a high degree of astigmatism against the rule is, I think, perhaps fairly well known. That his eyes corrected this, in his opinion, is not, I think, so generally known. At the International Medical Congress at London in 1881 he cited these facts, stating that when 16 years of age he saw the stars as perfectly round points when he made an effort difficult to maintain. When 24 his manifest astigmatism was about 2.00 D., and at 44 it was 2.50 D. Javal recorded one of his cases, M. L., whose corneal astigmatism at the age of 34 (1865) was 6.50 D., and the subjective error but 4 D., indicating to Javal a dynamic contraction of 2.50 D. In 1869 the subjective astigmatism was 6 D., and in 1881 7.50 D.

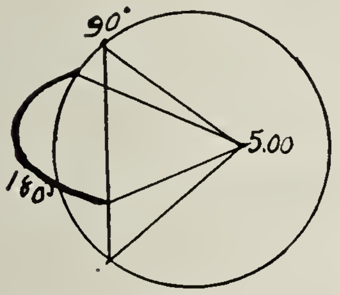

Fig. 10

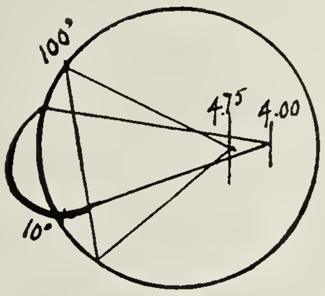

Fig. 11.

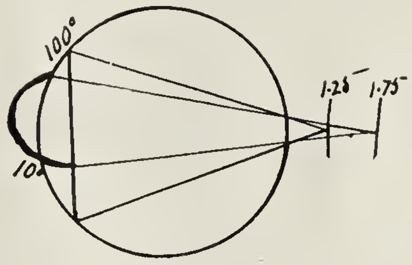

Fig. 12.

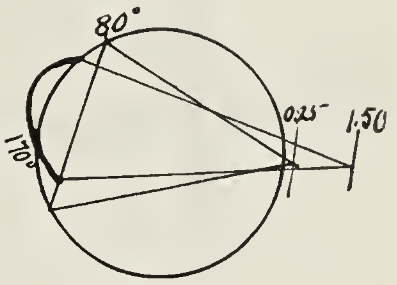

Fig. 13.

Among a large number of my own cases of the condition under consideration I select two examined after twelve and eleven years, respectively, as of value in showing how persistent are dynamic contractions, and how they may mask the true static refraction.

S. S., girl, aged 17, was seen first in 1892. Subjective tests then gave myopia corrected by: O. D.—5.00 sph. ⊙ O. S.—2.25 sph. ⊙

In 1895, aged 20 by skiascopy: O. D.—5.00 sph. O. S.—2.25 sph.

January, 1895: Atropin 1 per cent. for four days. Skiascopy; O. D.—4.50 sph.⊃—0.25c ax. 90°! O. S.—2.25 sph.

Trial case: O. D. V. w.—5.00s=20/20?? ⊙. O. S. V. w.—2.75s=20/20 ⊙

In 1904, nine years later, aged 29, Javal: O. D. 10 ± 1.37 D. O. S. 150° ± 0.50D.

O. D. V. w.—4.00 sph.⊃—0.75 cyl. ax 10°=21-19???⊙
O. S. V. w.—2.50 sph.=21/19, 21/13???

The path of the rays in O. D. in 1895 is shown in Fig. 10; in 1904, in Fig. 11.

Comparison of cuts shows a disappearance in 1904 of a tonic contraction affecting the meridian of 10 degrees, of 1.00 D. which atropin had not uncovered.

N. L., girl, aged 10, 1894. Asthenopia. Atropin 1 per cent. instilled for one week:

O. D. V. w+1.75s.⊃—0.50 cyl. ax. 10°=6/5, ⊙
O. S. V. w.+1.75s.=6/5. ⊙

Samuel Theobald[11] in 1885 cited three similar cases in hyperopes observed during twelve and sixteen years in which the astigmatism increased from 1 to 3 D.[10]

FREQUENCY OF THE CONDITION.

Dynamic astigmatism, in my own experience, exists very frequently, and nearly always in tired, irritable eyes which are affected with organic (corneal or lenticular) astigmatism. It is often overlooked simply because it is so often thought that the ciliary muscle and the convergence excess have been paralyzed completely by some weak or strong cycloplegic.

We say: "The tongue can no man tame." Who can tell when he has subdued the ciliary muscle? There are times when no man can tame it; nor are such times infrequent. I have tested hyperopic eyes which accepted no cylinders, though the corneal astigmatism was 1.50 D., yet by patient, so-called "fogging" for days nearly this whole amount became manifested, together with a higher degree of hyperopia.

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[11] Amer. Jour. Ophth., July, 1885.

EFFECTS OF AGE, STATE OF HEALTH AND TEMPERAMENT.

It has been generally noted that dynamic astigmatism predominates in youth and disappears at the age of 40 or 50. As to disappearance at the presbyopic age, Javal and Martin note numbers of cases as exceptions, and I have seen undoubted ones between 50 and 65, and once in a woman of 73. General debility, the asthenic state, etc., prevent dynamic contractions, which, in the young, reappear when the patient recovers normal vigor. Martin exhibits a conservatism that points a lesson to some extremists of this day who would disenthrone migraine as a distinctly nervous disease. He states: "The contraction alone is incapable of producing neuralgic crises; it is necessary that it occur in a subject constitutionally affected with a diathesis (arthritism, or herpetism)."

MECHANISM OF DYNAMIC ASTIGMATISM.

This is not easily explained, for there is even yet no universal agreement as to the mechanism of accommodation. Martin[2] disavows any intention of asserting that certain fibers of the ciliary muscle contract, but only that the partial contraction in question causes a convexity of the lens in a certain meridian. Dr. Chas. A. Oliver[12] remarks that during astigmatic tests "it will at times be found not only that the amounts of the defect change when the examinations are made with the two eyes simultaneously, but that the relative angles of the two principal meridians likewise change. This is possibly to be accounted for in a measure by the action of the extraocular muscles in producing, both directly and indirectly, different degrees of tension on the eyeballs during their combined functioning."

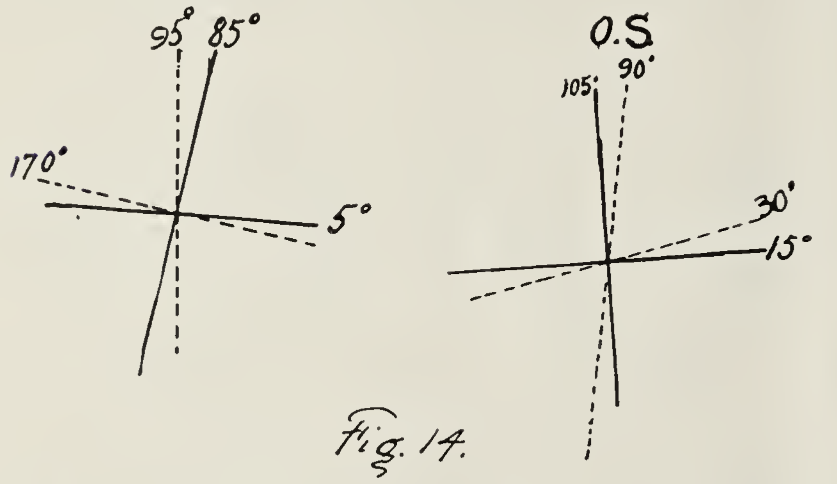

Fig. 14.

Priestly Smith[13] cites a case in which in one eye there was total paralysis of the externus and internus, the other muscles being intact. The patient complained that vision of this eye was impaired. The ophthalmoscope showed no change in the fundus or media, but skiascopy showed 1.00 D. of astigmatism in the vertical meridian corrected with a —1.00 D. cylinder axis horizontal to normal vision. On recovery from the paralysis, all traces of astigmatism vanished.

This brings me to some investigations of my own, made on my own eyes and on those of others, in the endeavor to estimate the relative importance of the action of the accommodative apparatus on the one hand and of the extraocular muscles on the other, in producing dynamic astigmatism. These comprise two kinds of experiments:

1. The objective examination of the corneal curvature by the ophthalmometer with the eyes at rest, and the changes in curvature and direction of the meridians due to more or less convergence and accommodation.

2. Tests with the astigmatic chart at 20 feet in a static state of rest in the primary position, and the changes in the meridians and astigmatic curvature produced by concave spherical lenses resulting in increased accommodative effort with overaction of convergence (esophoria).

Subjectively, I have simple hyperopic astigmatism of 0.75 D. in each eye, accepting + 0.75c. ax. about 75 degrees, O. D., and same cylinder axes, exactly 105 degrees, O. S.

My corneæ have been repeatedly and carefully measured by different observers, and I have the faculty of converging moderately or excessively with either eye alone, the other remaining motionless in the primary position. On converging, the reflected and tangent images of the mires are always seen to separate in the meridian of least curvature 0.25 D., and to overlap in the one of greatest curvature from 0.12 to 0.25 D. Measurements on the arcs of the instrument give like results. Besides this, the principal meridians of each eye are shifted. Each nearly horizontal meridian inclining nasally 15 degrees, and each nearly vertical one outward 10 to 15 degrees, as shown in Fig. 14.

Taking the left eye, when converging the right on a point 8 to 10 inches in the median line, the tangent images at meridian 15 degrees of the left cornea are seen to separate from 0.25 D. to 0.37 D., and to overlap about 0.12 D. near the meridian of 105 degrees. I say *near* these meridians because the principal meridian 15 degrees now becomes 30 degrees, and 105 degrees becomes 90 degrees; the more horizontal (15 degrees) inclining nasally 15 degrees, and 105 degrees inclining temporally 15 degrees.

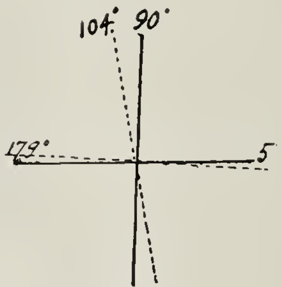

Fig. 15.

A fellow physician has in the left eye a corneal astigmatism 15 degrees ± 0.75 D. On convergence, in contrast to my own case, the horizontal meridian inclines outward 6 degrees and the vertical 9 degrees inward, the curvature increasing slightly in each. (Fig. 15, the dotted lines indicate the meridians during convergence.)

In order to determine whether or not by subjective tests there is dynamic astigmatism produced in my left eye by simultaneous convergence and accommodation, and whether this bears any direct relation to the corneal asymmetry similarly induced, during three years I have proceeded as follows: With my correction, +0.75c. ax. 105 degrees, before this eye, the right covered, I regard an astigmatic chart and tangent scale at 6 meters. The dial lines appear equal and clear; exophoria 2 degrees. Now, placing a minus 3.00 D. sphere before the left eye and cylinder, and by a strong effort of accommodation overcoming the induced hyperopia, esophoria of 18 to 20 degrees is induced (9 to 10 degrees of actual deviation, equivalent to convergence on a point of close to 8 inches). The chart lines 30, 45 and 60 degrees now alone appear distinct, and all the lines are equalized by +0.50 cyl. axis 135 degrees, indicating either a decreased relative curvature in the corneal meridian 45 degrees, or an increased one in meridian 135 degrees. The result of this experiment never varies, and it proves conclusively the production of dynamic astigmatism due either to accommodation or convergence, or both. Apparently, there is a direct relation between the corneal astigmatism produced in the left cornea by both objective and subjective experiments (Fig. 14).

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[12] Norris and Oliver, vol. iv., pp. 430, 431.

[13] Ophth. Rev., vol. iv, p. 354.

The inclination of the principal meridians in my own eyes can not be explained by the outward physiologic torsion, which, according to Le Conte's laws, occurs in horizontal convergence from the primary position; for experiments show that this outward torsion of my eyes, converging to 8 inches, amounts to only 3 degrees, whereas, as seen in Fig. 14, the outward inclination of the nearly vertical meridians amounts to 10 and 15 degrees, while the nearly horizontal ones actually incline inward. There is, therefore, a distortion of the corneæ, and this, I believe, is due to pressure during convergence by the superior, inferior and internal recti. This pressure is quite as great in marked esophoria of accommodative origin.

In concluding this paper, I insist that dynamic astigmatism is of practical clinical importance, and the gist of my demonstration is a plea to consider in many cases the total refractive error in doubt until time, cycloplegic's rest, aided if necessary by the hypodermic use of hyoscin hydrobromate and bromids or other sedatives, with patient "fogging" at times, has eliminated all dynamic contractions. The condition is frequent, not rare, and failure to recognize it often accounts for the discrepancies in the refractive findings of competent ophthalmologists.

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DISCUSSION.

Dr. William Campbell Posey, Philadelphia, declared that the paper offered a satisfactory explanation to him of his failure to relieve some three or four cases during the last two or three years. He had refracted each eye separately very carefully, under a mydriatic, and had established the fact to his satisfaction that the axis of astigmatism in each eye was, say, at 90 degrees. The lenses were then ordered with the cylinders at this axis. In a few days, however, the patients returned, saying that the glasses did not give comfort, and that they noticed that if the lenses were slightly tilted they gave better vision and comfort. The work was then gone over a second time, only to find that when tested monocularly the axis was at 90 in each eye; with both eyes open, however, and the lenses in position, it was found that the axis of the astigmatism in one of the eyes had shifted about 10 degrees. That this change was due to an unusual action of one of the extraocular muscles on the eye Dr. Posey thinks there can now be no doubt.

Dr. D. de Beck, Seattle, Wash., related that during college life he was perfectly well in every way, but suffered from asthenopic headaches and in the beginning of his medical studies he still suffered; when he began eye work he found that either eye could read 20/20 readily. His eyes were tested under atropin by his late teacher, Dr. Seeley, who found that he had a simple hypermetropic astigmatism of 1.50 D., with an inclined axis, 105 in the right and 75 in the left. With these he saw perfectly well and has worn that correction for twenty-five years. He also had a slight but well marked cyclophoria. On taking off these glasses at that time he would find that he had a vision of 20/70, but that in a little while he could work down the line until he could read 20/20. Putting on the glasses would for a few moments blur the vision and then he would again have 20/20 vision. In other words, he could adjust for the defect, but as years went by the adjustment became less and less perfect. This personal obesrvation Dr. de Beck thought was in line with Dr. Eaton's experience.

Dr. Mark D. Stevenson, Akron, Ohio, said that when lenses having strong cylinders are prescribed, he rotates them in their frames until they are in the correct position before the eyes, so that the axis of each cylinder may correspond to one of the chief meridians of each eye. In doing so he has observed that the directions of the principal meridians sometimes change when binocular single vision replaces the vision of one eye. He has also observed this change during the act of accommodation.

THE INCIDENCE OF HEART DISEASE IN SAN FRANCISCO.*

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SAN FRANCISCO.

My object in writing this paper is to throw some light on the frequency of organic heart disease in San Francisco; on the relative frequency of the various forms; and on the factors that make the frequency what it is. In order to accomplish this purpose I have drawn on two sources of information. The first of these is the records of the General Medical Clinic in the dispensary of Cooper Medical College; and the second is the autopsies performed by my colleague, Dr. William Ophüls, professor of pathology in Cooper Medical College. In the medical clinic I have had opportunity for personal investigation of the cases concerned in the preparation of this paper, and know the facts to be as stated. As regards the autopsies, they were all made by Dr. Ophüls himself, who has kindly placed his personal records at my disposal.

Some explanation must be given at the outset as to what has been included under the term "heart disease." It is so often difficult to decide that the heart is really unsound, and that the heart symptoms of which complaint is made are not, in fact, due to disease of some other organ. Every clinical investigator must have certain rules for his guidance, and it is only fair to state first of all what rules have been followed in determining the presence of heart disease in the cases herewith reported.

First.—Although it may seem superfluous to state that no case has been diagnosed on symptoms alone, yet this statement is not superfluous, because such diagnoses are sometimes made.

Second.—No case in the group reported has been diagnosed on physical signs alone, especially not by the mere presence of murmurs. Nothing is more familiar to the teacher of medicine than the certainty with which a medical student rushes from the discovery of a murmur to the conclusion that valvular disease exists; while with increasing experience the murmur itself becomes less and less important as an indication of organic disease. I would not have it suspected, therefore, that diagnoses have been made in this way among the cases collected. On the contrary, so great has been the anxiety for conservatism in diagnosis, that no cases have been set down in the records as heart disease unless besides the murmur there was definite evidence present of alteration in the area of cardiac dullness, with symptoms and signs of broken compensation, either at the time of the first examination, or previous or subsequent to it. In other words, heart disease has not been considered to exist, unless it caused some, at least, of the well-known symptoms and gave rise also to the well-known physical signs.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

Third.—Cases of cardiac neurosis have been entirely excluded. The patient that comes complaining of the heart is one of the most common visitors at any dispensary clinic; but rarely are such patients found to have organic disease of the heart. Naturally among the class who apply at an out-door clinic, there are many of the victims of various forms of dissipation and excess. Poverty, ignorance and vice do not always go hand in hand, but they are extremely frequent associates in the people with whom we have to deal. The various forms of cardiac neurosis—palpitation, tachycardia, heart pain, consciousness of heart action, have been observed even more frequently amongst our patients than real heart disease. But these false cases have been carefully distinguished from the true and all have been omitted in making up the list presented in this paper.

Fourth.—Still another point to be made clear is, that cases of hypertrophy or of dilatation of the heart, secondary to some other disease, have not been included in this list. For instance, in all the cases of chronic nephritis with secondary heart changes, no record has been made in this group of heart cases. Similarly with cirrhosis of the liver, pulmonary tuberculosis, the primary anemias and diabetes, no cases have been recorded as having heart disease, no matter what secondary changes were manifest in the heart. In other words, our effort has been to limit the inquiry to cases in which the heart was plainly the organ primarily diseased. The greatest difficulty has been encountered in the effort to determine the relation of arteriosclerosis to myocardial changes. Here it has been found practically impossible to decide whether one or the other process first took place, or whether they both developed simultaneously. In no case, however, has myocarditis been diagnosed without the presence of definite symptoms and physical signs referable to the heart, no matter what grade of arteriosclerosis was demonstrable in the peripheral vessels.

I. FREQUENCY OF HEART DISEASE IN SAN FRANCISCO.

After these preliminary explanations I pass to the consideration of the first question, viz.: How often does heart disease occur in San Francisco? I have looked over the records of 3,648 cases seen in the medical clinic of Cooper Medical College, during the five years from Jan. 1, 1900, to Jan. 1, 1905. Among these there occurred 135 of organic disease of the heart. Ninety-seven of these cases came to the clinic with the symptoms and signs of broken compensation. In the other thirty-eight compensation was fair at the time of examination, but the physical signs were nevertheless definite and there was a history of broken compensation on some previous occasion. Several of the cases came to the clinic repeatedly with attacks of broken compensation occurring again and again during the five years. The percentage of heart cases was therefore 3.7, or, in other words, out of every thousand who presented themselves for all sorts of medical diseases, thirty-seven were found to have unsound hearts.

The records of autopsies by Dr. Ophüls number 640. Among these autopsies sixty-one showed organic disease of the heart. This makes a percentage of 9.5; which means that out of one thousand cases of death from all causes, ninety-five bodies showed organic disease of the heart. The marked discrepancy between the clinical figure and the pathologic figure may be explained in several different ways.

First.—It is common for people with a slight degree of organic change in the heart to have no symptom of ill health referable to these changes; and to die from some other acute illness, when systematic investigation at autopsy reveals lesions not previously suspected to exist.

Second.—Slight changes in the structure of the heart valves and heart muscle may give rise to such dubious physical signs that the clinician may not recognize their presence, even though he has sought for them.

Third.—The total number of cases is very different in the two sets of records; and if the total number were equal in each, the proportion of heart cases might be more alike.

Fourth.—It must be remembered that the cases taken from the clinic records were all ambulatory; while Dr. Ophüls' autopsies were made almost entirely upon cases that died in the City and County Hospital, or in Lane Hospital. People who go to a dispensary clinic must of necessity be well enough to get about; but people who go to bed in a hospital, do so because they are too ill to be any longer about. Once in a hospital they are very likely to reach the pathologist, and once in the hands of a competent pathologist things are sure to be found out about them that were never known before. It is impossible, therefore, to draw any final conclusion as to the exact incidence of heart disease in this city, and as to where it lies between 37 per thousand as a minimum and 95 per thousand as a maximum. So far as I can find out, no previous attempt to establish this has been made, and this pioneer effort must of necessity give only an approximate estimate.

II. RELATIVE FREQUENCY OF THE VARIOUS FORMS.

In considering this point, a number of cases were naturally found where there appeared to be a lesion at more than one valve; but in these cases the diagnosis was always made of the lesion that seemed to predominate and to control not only the physical signs but also the clinical history. As was to be expected, the lesion most often met with was mitral regurgitation, of which there were sixty-five cases. Next in frequency came myocarditis, of which there were forty cases. While it is recognized that it is never possible to say with absolute certainty whether the myocardial change is fibroid or fatty in character, still in an overwhelming majority of the myocarditis cases there were associated changes in the vessels which spoke for fibroid change; and in only five did it seem likely that the condition present was a fatty degeneration of heart muscle. It has seemed to us that the proportion of myocardial disease to valvular disease is rather a large one, and this conviction based on clinical observation seems to be borne out by the pathologic findings in Dr. Ophüls' autopsy reports, as will presently appear. Third in order of frequency came aortic regurgitation, of which twenty-one cases were observed. All of them were typical and in two of them that died during the time of their attendance on the clinic, autopsy confirmed the diagnosis. Finally there were observed nine cases of pure mitral stenosis. I am convinced that this number does not convey a proper idea of the frequency of this lesion; but as no patients under 12 years of age are admitted to this clinic, and as mitral stenosis is essentially a lesion of childhood, naturally the number herewith reported falls far behind the other forms. As it is, seven of the nine cases observed were in individuals under 20. No case was seen where a diagnosis of aortic stenosis could conscientiously be made.

Turning now to Dr. Ophüls' autopsy reports, out of the sixty-one cases of heart disease discovered, forty-three were cases of endocarditis and eighteen of myocarditis. As regards the orifices affected, the aortic alone was found involved eleven times; in one case no severe lesion, in three cases largely stenosis, and in seven cases insufficiency. The mitral alone was found involved ten times; in seven cases no severe lesion, in one case largely stenosis, in one case largely insufficiency, and in one case both. Both aortic and mitral valves were found involved simultaneously seventeen times. In the eighteen cases of myocarditis, fourteen showed partial obstruction of the coronary arteries by arteriosclerosis.

The observations made as regards the relative frequency of the various forms of organic heart disease are, therefore, not essentially different from those of observers elsewhere; except that there seems to be an unusual proportion amongst our cases of disease of the myocardium. This is directly attributable to the great frequency of arterial disease amongst the class of patients we meet in our clinic; a fact which accounts also, I may say in passing, for the remarkable frequency with which we observe aneurism of the aortic arch in San Francisco—a fact to which I venture to call attention at this time, without adducing statistics to corroborate the statement.

III. FACTORS INFLUENCING THE FREQUENCY.

(*A*) *Rheumatism.*—As one would expect, articular rheumatism has played a prominent part in the history of our cases who came with heart disease. Forty-nine in all had either had rheumatism at some time in their previous history, or were suffering from a subacute attack at the time of their visit. In a number of these there was the usual history of frequently recurring attacks; in others simply a history of one severe illness with a few or many joints involved. It is interesting to note the relation of rheumatism to the form of lesion present. Out of nine cases diagnosed as mitral stenosis, six had a positive history of rheumatism, usually of recurring attacks. Of the sixty-five cases of mitral regurgitation, thirty-three had an antecedent history of rheumatism. On the other hand, out of twenty-one cases of aortic regurgitation, only five had an antecedent history of rheumatism and out of the forty cases of myocarditis, only seven had ever suffered previously from rheumatism. Thus it would appear that while in San Francisco, as elsewhere, the acute infectious disease called rheumatism frequently leads to organic disease of the heart, it is the mitral valve that is most often left incapacitated, while the aortic much more frequently escapes and the myocardium suffers least frequently of all.

(*B*) *Arteriosclerosis.*—This is naturally the second great factor. It has been found present in practically all of the cases diagnosed as myocarditis, and in a large proportion of the cases of aortic regurgitation. It is recognized as a matter of course that arteriosclerosis may be manifestly present in peripheral vessels and yet, perhaps, play no part in the condition of the heart; and, on the other hand, that before changes can be discovered in peripheral vessels, advanced change may already have occurred in the coronary arteries and in the aortic arch. But two points are absolutely certain:

First.—The extreme frequency with which we observe arteriosclerosis in the clinic, as shown by thickened and hardened walls in the palpable peripheral vessels.

Second.—The fact that out of the eighteen cases of myocarditis which were found among Dr. Orphüls' autopsies, fourteen showed a greater or less degree of obstruction of the coronaries by arteriosclerosis.

Whatever the reason for it may be, degeneration of vessels is, without doubt, one of the most conspicuous pathologic conditions with which we meet in the medical clinic from which these records are taken.

(*C*) *Nationality.*—It is a significant fact that, out of the 135 cases, only forty-eight were of native stock—that is, born in the United States. What bearing this may have on the incidence of heart disease is not readily explained, but the fact remains that nearly two-thirds of our cases were of foreign birth. Nothing shows better than these statistics of a medical clinic how cosmopolitan is the population of San Francisco. Among the cases collected there were patients from Austria, Ireland, Germany, Sweden, Denmark, Italy, England, Canada, Poland, France, Switzerland, Finland, Roumania, Russia, West Indies, Belgium, Portugal, Norway, Hungary; while in the clinic, though not represented among the heart cases, we have frequent visits from Chinese and Japanese. Returning to the relation which foreign birth may bear to heart disease, the only explanation I can offer, based on my observation of these people as they come to us, is that the foreigners are afflicted not only by poverty, as all visitors at a free clinic must necessarily be, but are almost invariably filthy in their habits, addicted to the use of alcohol and tobacco, and ignorant of all proper conception of how they should live, of how they should eat, drink, work and house themselves in order to maintain health.

(*D*) *Occupation.*—It can be safely asserted that among our cases, no one occupation has predisposed more than another to heart disease; for almost every conceivable form of labor is represented among the 135 collected here. But it must be borne in mind, on the other hand, that only the laboring class are represented in this group, and that no information whatever is given by a public clinic as to the frequency of heart disease among the prosperous, whose occupation is entirely different from that of the class from whom these cases come. It is not likely that the occupation itself has so much to do with the incidence of heart disease as has the association of any hard work with bad hygienic habits, poor food, overindulgence in alcohol and other forms of dissipation. While I have no definite statistics to offer as to the frequency of heart disease in private practice, my impression is that cases are not so frequently met with among the well-to-do as among the poor; and not so frequently among those who earn their living by their brains as among those who have to earn their daily bread by the work of their hands. Nevertheless, the rich, the idle, and the brain workers have diseases of their own, even if they apparently escape their share of heart disease.

(*E*) *Sex.*—Only thirty-five of the cases were women, while one hundred were men. While the fact that the number of males in the group so largely exceeds the females may be partly explained by the fact that the number of men presenting themselves for treatment at a dispensary clinic is always greater than the number of women, still there is no such disproportion in the attendance as there is in the number of these cases of heart disease; and the inference seems justifiable that in San Francisco, at least, heart disease is more common among men than among women.

(*F*) *Age.*—As is well known, there is no time of life exempt from heart disease, and our cases were found distributed among individuals of every age from 12 as a minimum to 81 as a maximum. During the various decades they occurred as follows: 12 to 20, nine; 20 to 30, sixteen; 30 to 40, seventeen; 40 to 50, thirty-two; 50 to 60, twenty-nine; 60 to 70, twenty-six; 70 to 80, six. Of the nine cases under 20, seven were mitral stenosis and two mitral regurgitation; of the sixteen between 20 and 30, ten were mitral regurgitation, two were aortic regurgitation, two were mitral stenosis and two only were diagnosed as myocarditis. Of the seventeen cases between 30 and 40, ten were mitral regurgitation, five were aortic regurgitation and only two were myocarditis. Thus it will be seen that all of the cases of mitral stenosis occurred under the age of 30 and the great majority under 20; while, on the other hand, out of the forty cases in all of myocarditis, only four were observed in patients under 40. The mitral regurgitations were found quite evenly distributed throughout all the decades, almost the same number for each ten years up to 70; which would seem to indicate not only that mitral regurgitation has no predilection for any particular time of life, but also that its prognosis is better than that of the other valvular lesions. Of the aortic regurgitations only one-third occurred under the age of 40, and two-thirds between the ages of 40 and 60; which would seem to indicate the part played in the production of this lesion by arteriosclerosis. This, indeed, is the most significant fact that stands out above all others in these records—the predominance of arterial disease; and advanced years in themselves lead to heart disease only as they first lead to changes in the coronary arteries, or in the aortic arch and the valves that guard the orifice of this great vessel.

CONCLUSIONS.

1. Heart disease is a common ailment in San Francisco, as it is in all large cities.

2. Among valvular troubles, the form most commonly met with is mitral regurgitation; second comes aortic regurgitation, and, third, mitral stenosis, while aortic stenosis is undoubtedly a rare affection.

3. Myocardial disease is frequently found. The factors in its incidence are those commonly supposed to cause arteriosclerosis; and the latter condition is even more often seen than myocarditis itself.

DISCUSSION.

Dr. W. Ophüls, San Francisco, said that the number of cases examined at postmortem was rather small, and a comparatively small number for statistical purposes. He was struck with the large number of septic endocarditis cases. Nearly all of these cases were diagnosticated clinically as cases of chronic rheumatism with heart lesions and Dr. Ophüls thought that the cases of rheumatism, so-called, that lead to severe lesions of the heart valves were, in the large majority, more properly speaking cases of sepsis. How frequently these heart lesions follow in instances of rheumatism, if we want to acknowledge the existence of such a condition not due to an infection with ordinary septic bacteria, is another matter. It can not occur very frequently. So that it is presumable in the course of a disease with the clinical picture of polyarticular rheumatism, but with severe lesions of the heart valves, that the condition really is a septic one.

Dr. James J. Walsh, New York, thought, with regard to the origin of rheumatic endocarditis, that there is a definite change of opinion among medical men about to come that is worth while noting. At the present time it is generally accepted that simple, acute articular rheumatism is very frequently followed by valvular heart disease; on the other hand, it is generally acknowledged that simple, articular rheumatism does not leave any marked evidence of disease in the joints. One of the pathognomonic signs of acute articular rheumatism is that it leaves no mark after it. Whenever a chronic arthritic condition remains there is more than a suspicion that the original disease was not simple acute rheumatism, but either arthritis deformans or acute arthritis, due to some other infection beside that which produces true rheumatism. Affections of the heart valves are extremely common in septic conditions of all kinds. There is scarcely any form of microbe that gets into the circulation but will not produce an affection of these delicate structures. The heart valves are, after all, joints in the tissues, that is, they represent portions of the tissues covered by serous membranes in order that they may move over one another without friction and without adhesion. Since ordinary acute rheumatism when uncomplicated does not leave any mark on the other joints in the body, it seems probable that it also does not leave any mark on the heart; at least, not nearly in the large proportion usually stated. When there is a so-called rheumatic endocarditis it is probable that there has been some secondary affection complicating the simple rheumatic arthritis. This point of view can not but be helpful for diagnosis and prognosis.

Dr. Charles Rollins Grandy, Norfolk, Va., reported that his experience with heart disease among the negroes has been rather different. Heart disease among the negroes is very common, while acute rheumatism is seldom seen. The negroes have various other diseases which they call chronic rheumatism, but which are probably nervous affections, etc. Many cases of aortic valve murmurs or even double valve murmurs occur. There may be an aortic direct murmur, although at autopsy there will not be found any closing of the valves. Men who do heavy work have dilated hearts, hypertrophied hearts, with a leak at the mitral or other valves; these are some of the cases that come to Dr. Grandy for treatment in Norfolk. In probably the majority of them there was a strain of the valve. They were young men and Dr. Grandy was able to note the blood pressure and the arteriosclerosis.

ACUTE DIFFUSE SUPPURATIVE PERITONITIS.*

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Many men of many minds have written about peritonitis. The theme is old but not exhausted—not while surgeons are reporting 100 per cent. of mortality. I shall confine myself to a discussion of the acute diffuse suppurative form of the disease, and will consider especially the treatment. For etiology and classification I will refer to the publications of Senn[1] and Bayard Holmes,[2] whose monographs are exhaustive and scholarly.

In the study of this subject my purpose has been to secure for comparison the experiences, methods and opinions of a considerable number of surgeons. This I have undertaken by correspondence and by some references to literature. Fifty letters were addressed to surgeons in various sections of the country, information being sought on lines suggested by the following questions:

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* Read before the Indiana State Medical Association, June 8, 1905.

[1] Senn.: Journal A. M. A., Sept. 4, 1897.

[2] Holmes: Illinois Med. Jour., 1904, vi, 499-515.

1. Do you make it a rule to operate on acute diffuse suppurative peritonitis?
2. If not, what are the contraindications?
3. On how many cases have you operated, and with what mortality?
4. What is your method of operation and treatment?
5. Do you ever refuse to operate? If so, when and why?

Free discussion was invited. Twenty-five answered—some in detail. A dozen sent courteous regrets. From the remainder no answers were received. Many of the letters received were scholarly and instructive. I wish I might publish them in full, but that is manifestly inexpedient. I, therefore, give you briefs and excerpts as follows:

Van Buren Knott, Sioux City, was among those who gave detailed information as to his methods of treatment. He always operates unless patient is moribund. He has kept records only since 1902. Since that date he has operated on 19 cases, with 17 recoveries and 2 deaths. He employs the median incision, and at once repairs any leak or diseased part that may exist. Through a two-inch incision above the symphysis he places a tube one and one-half inches in diameter, carrying a gauze wick to the bottom of the pelvis. In females a similar tube without the gauze wick is placed in the cul-de-sac. Gallons of hot salt solution are used to flush the abdomen, enough of which is left in to fill the cavity entirely. With an additional drainage tube in the pelvis similar to the first, but without the wick, the patient is raised to the Fowler attitude while yet on the table, transferred to the bed and kept in this position. Through this plain tube in the pelvis he pumps out, every two hours, such excess of fluids as are not carried off by the wick. This is done for 24 hours. He thinks by leaving in the abdominal cavity a large amount of the saline solution a strong current is established toward the lower pelvis.

D. N. Eisendrath, Chicago, operates on all cases where diagnosis has been made during the first 24 to 72 hours. As contraindications, he mentions extreme sepsis as shown by a pulse of 180 to 200, excessive distention of the abdomen which denotes a complete septic paralysis of the gut, as well as constant vomiting. He thinks these latter cases, however, are those in which a diagnosis has not been made until the fourth, fifth or sixth day after the onset of perforation. Prior to his adoption of the Fowler position, he reports 7 cases with a mortality of 100 per cent. Since using the Fowler position he has had 3 cases, all of which recovered. He washes the abdominal cavity with three or four gallons of hot salt solution and inserts a Mikulicz (or umbrella) drain of plain gauze. Where the drain goes through the skin it is surrounded with long strips of loosely folded gauze, which is frequently changed within the first few days after the operation.

Joseph R. and Thomas B. Eastman, Indianapolis, make it a rule to operate on all cases unless moribund. They report 7 cases with 1 death. Their method is celiotomy, lavage, very gentle manipulation of the intestines in search for abscess or perforation, and tube drainage from bottom of pelvis, with patient in Fowler's position.

George Tully Vaughan, Washington, D. C., reports 16 cases, with 4 recoveries and 12 deaths. He uses irrigation and drainage and refuses to operate only when patient is moribund.

John A. Wyeth, New York, does not operate on all cases. In cases of seemingly diffuse mild peritonitis, progressing slowly from the first indications of the disease, he adopts the Fowler position, gives calomel and flushes the colon from below with salines. He reports two cases within two years of general diffuse peritonitis in children which had developed in connection with colitis due to intestinal indigestion, and both were relieved, without operation, by this method. Rapidly developing general peritonitis, from symptoms of gangrene of the appendix or perforation, he says, require operation, and the seat of infection should be sought out and removed. He flushes with sterile water 100 to 105 degrees, with a long tube, beginning above the liver, spleen and stomach, and underneath these organs, and around on either side, carefully, under high pressure, using volumes of water until the fluid comes out clear. In women he opens the cul-de-sac and drains, and in men through an opening above the pubes he puts in a pelvic pack.

Roswell Park is among those who take a pessimistic view of operative treatment. He says: "I have had such a small measure of success in attacking diffuse suppurative peritonitis that I avoid operation on it if I possibly can. I feel that the contraindication is the fact of its being suppurative and diffuse."

J. F. Binnie, Kansas City, says that operation is the only logical method of treatment, but that he has seen more cases recover unexpectedly without operation than with. He is convinced that almost all cases where the abdomen is much distended and diffuse suppuration is present will die, no matter what the treatment.

James E. Moore, Minneapolis, and John P. Roberts, Philadelphia, also incline to this view.

Parker Syms, Philadelphia, makes it a rule to operate on diffuse cases. He says: "I believe there should be a careful distinction made between diffuse and general acute suppurative peritonitis. I believe that general acute suppurative peritonitis is fatal in 100 per cent. of cases, no matter what plan of treatment is employed. I believe diffuse peritonitis should give satisfactory results if properly operated on. Of course, there will be a pretty high mortality rate. My method is removal of the original focus, sponging out of the sero-pus and careful drainage with gauze and rubber tissue. I use peroxid of hydrogen locally. I do not believe in flushing. In the routine after operation I employ the physiologic rest to the stomach and alimentary canal as prescribed by Ochsner. I often prescribe the upright position suggested by Fowler."

L. L. McArthur, Chicago, operates except in the moribund state. He reports 100 cases, out of which he saved 23. He uses irrigation, pelvic drainage and the Fowler position.

This plan of treatment is endorsed by Robert G. LeConte, B. F. Curtis and De Forest Willard, Philadelphia; Chas. A. Powers, Denver, and H. L. Burrell, Boston.

B. F. Curtis, Philadelphia, also recommends the ice coil and opium.

H. L. Burrell, Boston, reports "at least 100 cases," and recalls "a few instances in which recovery has occurred." Occasionally when in doubt as to how diffuse the peritonitis is, he uses Ochsner's treatment for a few days.

Nicholas Senn, Chicago, has no fixed rule for operating. He selects his cases. He claims as contraindications, subnormal temperature, pulse 150 or more and great abdominal distension. He could not state the number of cases on which he had operated. His method consists of free drainage, flushing, and, if necessary, multiple incisions.

W. J. Mayo, Rochester, Minn., reports about 30 cases, with at least 50 per cent. of recoveries. He advocates quick abdominal incision and pelvic drainage with the patient kept in a sitting position for four or five days. Contraindications are general sepsis, leaky skin, quick pulse and cyanosis.

R. C. Coffey, Portland, Ore., makes it a rule to operate on all cases, except in extreme shock, or in which the condition has existed for several days and the patient is improving or is growing no worse. His treatment consists chiefly in carefully applied capillary drainage in sufficient quantities absolutely to dry the abdominal cavity within an hour or less time. For this purpose he has used more than 100 drains in wicks the size of a finger in extreme cases. In addition to drainage, he has great faith in anti-streptococcic serum or streptolytic serum. He commends Ochsner's method of starvation and stomach washing in these cases.

C. H. Mayo, Rochester, Minn., operates if due to rupture of viscera; also in the earlier stage of ruptured abscess if patient is reacting. He does not operate if patient is in the second period of subnormal temperature following the shock of rupture. In case of a ruptured viscus, the source is found and cared for, foreign material removed by irrigation, large glass drain in the pelvis, patient in sitting posture. If due to ruptured abscess, source of abscess is not sought for unless condition of patient is fair. No irrigation of pus derived from tissue or blood. He gives salines by rectum and occasionally subcutaneously.

John Young Brown, St. Louis, reports about 50 cases with a mortality of about 15 per cent. He operates on all cases, unless suffering from profuse general sepsis. He deals first with the primary source of infection, then "stabs" above the pubes, puts a large glass tube in the cul-de-sac and places patient in an exaggerated Fowler position. He has stopped irrigating and handles the viscera as little as possible. He believes that the hitherto high mortality rate has been largely due to the attempts of surgeons to do too much in cases of widespread peritoneal infection.

J. B. Murphy, Chicago, has a series of 24 operations, with only 1 death. He protests against irrigation and handling of viscera. His method consists of tube drainage in pelvis, Fowler position, proctoclyses, and antistreptococcic serum.

Thomas B. Noble, Indianapolis, employs a similar technic. He says that one can never tell what case is hopeless. He refuses to operate only when patient is dying and thinks then under local anesthesia some may be saved. He reports 5 cases operated on with only 1 death.

Byron Robinson, Chicago, also employs incision and drainage, with incision into the colon for relief of distending gases. He says: "I operate on any peritonitis which does not appear to check by anatomic and physiologic rest."

Now let us analyze these replies:

To my first question seventeen said "Yes." Seven gave affirmative replies, with qualifications. One avoids operation if possible.

Question 2 developed the statement by fourteen writers that no contraindication to operation should be considered except the moribund state. Nine gave symptoms which virtually imply the same condition, while two did not answer the question.

In answer to Question 3, statistics were supplied by twelve, a few of which were estimated. There were reported 374 cases, with a total of 232 deaths. This gives a total mortality of a fraction over 62 per cent.; a high death rate to be sure, but it does not bear out the opinions that all will die, no matter what treatment is employed.

My fourth question pertained to methods, and it developed that 15 were in favor of irrigation, while 10 opposed it. The Fowler position was advocated by a total of 17. It was not mentioned by the others.

The answers to my fifth question tallied very closely with replies to my second.

In going over the methods of treatment we find that operation is advocated in nearly every instance as the only rational procedure. The technic, however, varies considerably; prognostic opinions likewise. We find here the optimist, who believes that nearly every case ought to be saved. We are not without the pessimist, who thinks all will die. And, as usual, we have intervening shades of opinion. Is there anything in these reports to account for such variance in belief? Let us question them still more critically.

Points on which there is no contention are: Free drainage and the Fowler position. True, the methods of drainage are somewhat at variance, but all are primarily agreed on its use, and all place it in the pelvis, and in other regions as indicated. Irrigation is favored by the majority, but those who use it seem to have the highest mortality. They report, altogether, 252 cases with 199 deaths. This is a mortality of 79 per cent. Where irrigation was not employed 92 cases were reported, with a total of 18 deaths—a mortality of less than 20 per cent. This looks significant.

I am aware that there is liability to error in these figures. Other factors may have figured in the cases to some extent. Still, the difference in death rate is so striking that it challenges our attention, and needs an explanation. I know that some operators report success with irrigation. Levings[3] recently reported 10 cases operated on in 10 months, with 9 recoveries, and in each case he flushed the abdomen with acetone solution, 1 to 10,000. Note, however, that he applied it *through the drainage tubes,* without handling the viscera.

Among English surgeons I find C. A. Ballance[3] warning against the practice of irrigation and handling the viscera. He thinks the heavy death rate in the past has been due to these methods. Also, in the Erasmus Wilson Lectures on peritonitis, Dudgeon and Sargeant,[5] who investigated a series of cases at St. Thomas' Hospital, report 119 cases of diffuse peritonitis resulting from perforations in appendicitis. Of this number 100 were treated in the ordinary way by lavage with sterile water or salt solution; 80 of the patients died; the remaining 19 were sponged locally, and drained without flushing, with 10 deaths. This gives 80 and 53 per cent., respectively, for the two methods. None of the cases were selected, save that a few of the latter were given this conservative treatment because they seemed hopeless. The writers unhesitatingly endorse the method which gave the most satisfactory results.

There is another element in these reports which undoubtedly modifies statistics. I refer to the laxity in the use of the term "general" peritonitis. Senn directed attention to this in 1897. One or two of my correspondents have emphasized it, and I find a note of warning in the excellent lectures above referred to. Every case of peritonitis at first is local. When it is not limited by adhesions these writers[5] prefer to call it "diffuse," the term "general," or "universal," being reserved for cases in which the entire peritoneum is involved. They claim, also, that no accurate opinion can be formed at the time of operation, as to whether a case is diffuse or general.

If it be true that the method which omits flushing and handling and sponging gives the best results, as it seems to do, what are the reasons therefore? Let us examine the processes by which nature combats the infection. They are:

1. A serous exudate.
2. A fibrinous exudate.
3. Hyperleucocytosis.
4. Route of absorption.
5. Anatomic and physiologic rest.

1. The serous exudate serves to dilute the toxins of the infections and perhaps has a tendency to neutralize them with antitoxins. We may assist in this dilution by flushing, but there is a better way. Water introduced slowly by rectum will accomplish the purpose without traumatic effect on the peritoneum. It also favors elimination. Murphy[6] says eighteen pints of salt solution may be introduced into the rectum in twenty-four hours, and retained if introduced slowly under low pressure (one foot elevation). This I consider a most important element in treatment.

2. We all know something of the benefit to be derived from a fibrinous exudate. It tends to wall off the infection and to change a diffuse into a circumscribed inflammation. It helps to protect the endothelial coat

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[3] Levings: Clin. Review, Chicago. 1904-5, xxi, 161-170.
[4] Ballance: Lancet, Lond., 1904, ii, 1195-1200.
[5] Dudgeon and Sargeant: Lancet, Lond., vol. i, 1905, 617-625.
[6] Murphy: Prac. Med. Series, 1903, November, 282.

from the destructive effect of toxins. A blistered or denuded peritoneum is a distinct menace to the life of the patient for the reason that it allows absorption to take place directly into the blood stream. Dudgeon and Sargeant[5] observed that the *Staphylococcus albus* was the first organism to appear in peritonitis and the last one to disappear. It was always associated, when present, with a fibrinous deposit. They believe it has an influence on the formation of fibrin, as well as with the attraction of leucocytes into the field. The leucocytes produce a turbid appearance in the fluid present, and the surgeon has been trying all along to remove this creamy substance, which really is nature's bodyguard, fighting the infection. The point is, let the fibrinous exudate alone. How differently from the recommendation made to the French Surgical Congress by Demons[7] a few years ago, viz., to scrape the entire surface of the intestine.

3. Hyperleucocytosis, generally, is an expression of the natural resisting power of the individual, as compared to the amount and character of toxemia present. It is favored by such measures as conserve the patient's energy, and the fact that leucocytes are present in the exudate in large numbers is no indication for flushing. You can not remove pus from the peritoneal cavity without breaking up the fibrinous deposit, uprooting the endothelial cells and producing multiple atria of infection. Pus goes in the line of least resistance. Remove the tension, give it an outlet and leave the rest to nature.

4. Robinson[8] and other observers have demonstrated that the place of greatest absorption is the diaphragmatic pleura; also that absorption takes place primarily through the lymphatics, chiefly in the direction of the thorax. Muscatello, in his experiments on dogs, showed that the upright position retarded but did not prevent absorption by this route, and, furthermore, there was no evidence of absorption by any other channels. The abdominal organs after five and one-half hours contained none of the reagent used in the experiment. This explains the efficacy of the Fowler position after operation. Absorption is delayed and time is gained for the patient, and time is an important element in the fight.

5. Nature enforces rest by inflicting the patient with pain. The normal peritoneum is practically without pain sensation. When it is inflamed the pain is terrific. As a result the diaphragm and other muscles are fixed; the parts are placed under enforced rest. Robinson[8] says that the diaphragm acts as a force pump, sucking up the fluids from the peritoneum during respiration, and forcing them onward through the lymphatics. If this be true, rest is greatly to be desired. It also tends to limit the spread of infection throughout the peritoneal cavity, for it must be remembered that diffuse inflammation is not of necessity general.

To sum up, I believe the indications for treatment are:

1. Early operation—and it must be remembered that this implies an early diagnosis. Do not wait for shock, which is a symptom of overwhelming infection. Learn to recognize the early symptoms as stated by Murphy:[9] "Pain, nausea and vomiting, localized tenderness, circumscribed flatness on piano percussion, elevation of temperature and hyperleucocytosis, in the order named." I repeat it, operate early.

2. Method—simple incision, with simple drainage, placed in pelvis and such other fossæ as seem to require drainage. Perforations should be closed, and appendix removed if it be the offender, provided these things can be done without too much handling of viscera.

3. Fowler position to retard lymphatic absorption.

4. Physiologic salt solution by rectum, one and one-half pints every two to four hours for twenty-four to forty-eight hours.

5. Antistreptococcic serum in suitable cases in hope to combat the effect of toxins absorbed.

TREATMENT OF CONGENITAL DISLOCATION OF THE HIP.

WITH REPORT AND EXHIBITION OF CASES.*

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It is not my intention to give an elaborate paper on the treatment of this disease, but simply to go over briefly the methods used in these cases which are reported. The fact that it is necessary to wait for many months, or even years, before the final result is known, and the further fact that only a few years ago this disease was relegated to the surgical waste basket as being incurable, places our knowledge of the result of treatment of it at the present time in a more or less uncertain condition.

Many objections have been raised against the manipulative method as practiced by Lorenz and his followers. Serious complications, such as paralysis, fracture of the bones, rupture of the blood vessels, gangrene, and loss of limb, have been too frequent; and the final results are not by any means perfect. Ankylosis may occur, complete relapse is comparatively frequent, and anterior transposition is so common as to be almost the rule.

The operative technic here followed has been that practically as given by Royal Whitman[1] and J. Jackson Clarke.[2] The tissues on the inner side of and anterior and posterior to the joint are, in turn, stretched until sufficient relaxation for reduction is produced. This result has usually been accomplished when the trochanter can be drawn down to Nélaton's line. Reduction is attempted by forced abduction of the thigh, which is at the same time completely flexed on the abdomen and rotated inward. Either the hand of the operator or a wedge may be used as a fulcrum behind the trochanter. After reduction the anterior fibers of the capsule are stretched and the plaster cast applied. Only in an easy case, however, would the operation be completed at one time.

The structures with which we have to deal in these operations are frail, while the leverage is great; consequently special care is necessary to avoid injury. After a moderate amount of manipulation of the tissues and a few gentle attempts at reduction, the hip is placed in a cast in a position of abduction. After two or three weeks, the cast is removed and another attempt made at reduction. At this time, the adductors will be found well relaxed, and most of the manipulations will be required on the posterior and anterior muscles, especially the tensor fascia femoris. The same method, however, as previously practiced, is repeated again at this time. If, after three or four attempts, reduction can not be accomplished, it is undoubtedly wise to resort to open

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[7] Demons: Trans. French Surg. Cong., 1890.
[8] Robinson: "The Peritoneum," Part 1, 288.
[9] Murphy: Journal A. M. A., 1903, April 11.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.
[1] Orthopedic Surgery, 1903.
[2] The Practitioner, March, 1903.

incision. When reduction has been secured, the cast is changed about once in two months, or more frequently if much soiled or broken, and at the time of such a change a radiograph is taken, and the hip gently moved in different directions, avoiding adduction. This gentle, repeated manipulation should eliminate almost completely such complications as result from fracture of bones and laceration of the soft tissues. The frequent dressing, with *x*-ray picture, keep the surgeon posted as to the progress of the case, and the tissues about the joint are also kept in better condition. On account of the frequency of relapse, treatment in the cast, even in favorable cases, is continued for at least one year after final reduction. The following cases are reported:

Case 1.—R. R., female, born in February, 1901, began to walk in August, 1902, when the limp was first noticed by her parents. In April, 1903, the child had empyema, and after recovery from this the limp was more noticeable. She came under my observation in October, 1903, with congenital backward dislocation of the right hip. The shortening was three-quarters of an inch. My friend, Dr. Joseph C. Bloodgood, of Baltimore, who has given me much valuable advice and assistance with all these patients, had charge of this one, and, with my assistance, manipulated the hip for twenty minutes without securing reduction. A cast was applied with the limb in abduction. This patient was treated until the present time under the direction of Dr. Bloodgood, and it was at his suggestion that the repeated gentle manipulative method was used. In January I manipulated this hip the second time under anesthesia and very easily secured apparent reduction. The femoral head could be plainly felt anteriorly, and the hamstring tendons were contracted so that it was impossible to straighten the leg. The *x*-ray, however, cast a gloom over my hopes by portraying the fact that the bone was really in a position of anterior transposition, where it has since remained. The cast was changed about once in two months until January, 1905, when it was replaced by an external hip splint, holding the leg in slight abduction. In July, 1904, the cast was removed and the patient placed in bed, with slight extension, for one week. She is now walking, without any support, a portion of the time, but with a moderate limp. This limp may be partially habit, as the splint is still worn most of the time. There is free movement, with about three-eighths of an inch shortening.

Case 2.—F. C., female, born in September, 1899, was referred to me by Dr. L. R. Dawson in June, 1903, with the diagnosis of double backward congenital dislocation of the hips. In October, 1903, Dr. Bloodgood assisted me in manipulation of her left hip, and, although the reduction was not accomplished, a cast was applied with the limb in abduction. In January both hips were manipulated, the left giving clinical signs of reduction, while the right was still unreduced. Early in February an anesthetic was given, and the left was found in its former position of backward dislocation, and I was unable to replace it, although apparently the muscles were thoroughly relaxed. At this time the right hip was reduced with audible thud and jerk and gave other clinical signs of reduction. The *x*-ray showed that it was in perfect anatomic position, and it has remained so until the present time. The cast was applied with both thighs in abduction, and again in March an anesthetic was administered and the left hip again apparently reduced after great difficulty. The cast was removed, however, two months later, and it was again found in a dorsal position, and three or four efforts after this failed to change its location. In October, 1904, after performing tenotomy of the adductors and the tensor fascia femoris, and still failing to accomplish reduction, I operated by open incision, using Lorenz's modification of Hoffa's method. On opening the capsule, practically no fluid was found; the head of the bone was eroded, the neck was at right angles to the shaft, the ligamentum teres absent, and the capsule contracted at the head of the femur. It was impossible to find the joint cavity until a more careful examination revealed the fact that the capsule was stretched across the acetabular cavity and firmly adherent around its rim. The capsule was freed by dissection from its adhesions to the acetabulum, which was found to be very shallow and contained little or no débris. The bone was replaced and one or two catgut stitches placed in the capsule and the external wound closed without drainage. The wound united, apparently without infection, although the union was slightly delayed in one part on account of the stitches not being near together, causing a small superficial granulating surface. One month after this operation, the head of the bone was again found in a dorsal position, but was very easily reduced. It was then put up with increased abduction and has since remained in place, while the abduction has been gradually decreased.

In February, 1905, a radiograph showed an apparent separation of the lower part of the left sacroiliac joint, and also a change in the ilium opposite the acetabulum, which looked very much like a fracture, but was not so considered by Dr. C. H. Thomson, who has taken most of these radiographs, although he thinks the bone was pushed in a little. This occurred after a manipulation so gentle that the child, without anesthesia, did not cry. The cast was removed in March and the patient kept in bed and the left hip manipulated to try to loosen the adhesions. In May she was allowed to walk, with a brace for slight abduction of the right hip. When the first apparent reduction was obtained by the manipulative method, it was evidently with two folds of the capsule between the head of the bone and the cavity, and there is a question in my mind as to whether these manipulations and the replacing of the bone in that condition did not tend to cause the adhesions of the capsule which were found. At the present time, the right hip has good motion and is apparently in good position. The left hip is in good position, but with limited motion with slight abduction and one-quarter of an inch shortening in comparison with the right. The stiffness will probably disappear, as there is no evidence of bony ankylosis.

Case 3.—L. K., female, was born in October, 1901, and began to walk October, 1903, and was then noticed by the parents to have marked lordosis and a peculiar gait. In June, 1904, the late Dr. F. H. Coe saw her and made a diagnosis of double backward congenital dislocation of the hips and referred her to me for treatment. She was operated on by the manipulative method under anesthesia July 11. The right hip was apparently reduced after manipulation of forty-five minutes. The left one was reduced to anterior transposition after manipulation of about thirty-five minutes. These were comparatively easy to reduce, but still easier to displace. The *x*-ray showed very imperfectly formed acetabular cavities, and also showed that neither reduction was anatomically perfect, but both anterior and a little above. In both cases the head of the femur could be felt in front, and the ham-string tendons showed apparent shortening. Even with this apparently moderate manipulation, there was considerable swelling and ecchymosis about the vulva. September 6, the cast was changed and the left hip again found on the dorsum, and an apparently perfect reduction was obtained, and it still remains in that position. The right was probably in a supracotyloid position and was brought down on a level with the socket, but could only be kept there by bringing the thigh above a right angle with the abdomen with extreme abduction. At the next dressing, and since that time, it has been found in a position of anterior transposition. This patient is still wearing a cast.

Case 4.—C. C., female, aged 17, born in Seattle, after difficult instrumental labor, came under my observation in October, 1903, for congenital dislocation of the left hip. There was shortening of 2¾ inches, which could be reduced to 1¾ inches by traction. Abduction was very much limited and there was marked tilting of the pelvis. Her only symptom was a moderate but characteristic limp, which was lessened by the use of a cork sole. She seemed rather proud of the fact that she could kick higher with this foot than with the other. No treatment was advised. She was married a few weeks later, and no further reports have been obtained.

Case 5.—M. M. O., aged 23, married, came to me in June, 1904, about five months' pregnant. The history was that she tired easily about the hips and had more or less pain in the right. This trouble dated back four years, when, after riding astride a horse, she felt a catch in her right hip. Previous to that time, there was no pain or discomfort, although, she said, she had always walked like a duck. On examination, a double backward congenital dislocation was found, and this diagnosis was verified by the *x*-ray. The nature of her deformity had not been previously discovered. She was delivered October 1, at full term, after ten hours' easy labor. Her version of her present condition is that her right hip tires more easily, is more painful and has increased in size since the birth of her child.

Results in the treatment of this disease necessarily vary greatly with the age and condition of the patient. These eight hips here reported give two anterior transpositions with three anatomically perfect results, one of which was obtained by open incision and resulted in limited motion, which, however, may not be permanent, as the treatment can not be considered complete in any of the five hips treated. The permanent functional results, which are of the greatest importance, will only be known months, or possibly years, later. The three adult hips, in which no treatment was advised, showed a comparatively small amount of disability. The method here used of repeated, gentle manipulation, has the advantage of little danger, and, in case of failure to maintain and accomplish reduction by this process, the patient is better prepared for the method of open incision, which must be resorted to in a certain proportion of cases in order to accomplish the best results.

DISCUSSION.

Dr. S. J. Hunkin, San Francisco, thought it the duty of every surgeon to replace the hip joint in the quickest and easiest manner possible, let that method be according to the Lorenz plan, the Hoffa maneuver, or by an open incision. Dr. Hunkin considered that often it is better surgery to make an incision, open the capsule and put the head of the femur into the acetabulum under the eye, than to make severe traumatism and excessive ecchymoses, in a blind attempt. There is usually not so great difficulty in young children in getting the head of the femur to the site of the acetabulum as there is in maintaining it there. Often there is no acetabulum or only a small, shallow, smooth, slightly concave surface, and under such conditions, one may have to go back to the old Hoffa open operation, and scoop out a cavity big enough to hold the head. Dr. Hunkin remarked that the last speaker seems to have had some difficulty in preventing posterior reluxation, and he thought that due to the position maintained in the splint—the leg must be abducted and maintained at or posterior to the horizontal plane of the trunk. From this position an anterior transposition may result, but not a posterior reluxation. In addition to the usual splint Dr. Hunkin makes a later splint, open at the side and removable, which the patients wear at night for a year after they are free by day. This forces the limb into the extreme postoperative abducted position, for twelve hours a day, and a smaller percentage have relapsed since he has followed this plan.

Dr. DeForest Willard, Philadelphia, said that Dr. Willis' results correspond very closely with those of others who have attempted this operation. A certain number of young children will be benefited and a considerable number will be found after a time in a condition of ante-transposition. Some will be failures, which is the experience of all who have attempted it. If Dr. Willis' plan of gentle manipulation can replace the more forcible one it will be a great advance, but many accidents had resulted. As to the anterior transposition, especially in children over 7 or 8, where the bone has been put into a new position after the muscles have accommodated themselves to the former position, even if it be a dorsal one, Dr. Willard does not believe these cases are benefited in the least degree. They may walk with a little less lordosis, but they have not as good balancing power. They can not perform as good labor as if the head of the bone was lying in its original position. In the latter case they may walk badly, but they are stronger and better prepared for their work, which is important, especially with men. As to the open operation, it will likely result in a stronger hip, although we are very likely to have ankylosis. There is a danger in the open operation about which we should warn the patient in advance. As to the prognosis; from the newspaper reports the public expects that all these cases are going to walk as well as a well individual, but any surgeon who gives this idea to parents is unwise. We must be cautious in our prognosis, and we should not attempt the operation in too young children. Dr. Willard said he had not had much trouble in getting the hip back to the site of the acetabulum, where there is any acetabulum, but the majority of cases have none. The parts are all malformed and one can not make the head remain in position. It may stay there six months or two years, but some time or other the child must walk, and then comes the time when it will slide out of the acetabulum. It is simply a question of having a normal acetabulum before reduction should be attempted. If we have only a tea saucer, instead of a teacup, it will surely slide out again, and there is where the great difficulty arises.

Dr. C. O. Thienhaus, Milwaukee, Wis., said that while it has been generally accepted by the writers on congenital dislocation that in cases in which the retention after the bloodless reduction is difficult or the reduction impossible, a hypoplasia of the acetabulum is the underlying cause. Deutschlander has recently shown and proved by experiments on animals that in most of the cases of congenital dislocation we do not find a hypoplasia of the acetabulum, but a hyperplasia of cancellous and fibrous tissue within the acetabulum. This cancellous tissue, which can not be demonstrated by Roentgen rays, is one of the causes of difficulties in reduction by the Lorenz method and for retention of the head of the femur after the reduction has been accomplished. Dr. Thienhaus did not agree that the bloody operation will be the operation of the future. All those who are now the ardent advocators of the bloodless method, as Lorenz, Hoffa, Mickulicz, Lexer and others, tried the bloody methods of reduction first, but after a large experience taught them that by using this method we are very liable to have stiff joints as a result, and after they were convinced that the results obtained by the bloodless reductions were far superior to those obtained by the bloody methods, they accepted it as a law in all cases first to try the bloodless method of reduction, and after two or three attempts by this method have proved unsuccessful or the functional results obtained unsatisfactory, then to use the bloody method. If cases are taken at a suitable time, that is, from the third to the fifth year, surgery can show from 60 to 80 per cent. good functional results.

Dr. Harry M. Sherman, San Francisco, said that it certainly is a novelty to say that a congenital dislocation can be reduced by a gentle manipulation repeated a number of times, when it can not be reduced by violent manipulation at one sitting. Dr. Sherman said that it was as difficult for him to understand how Dr. Willis puts the femoral head through the narrow part of the capsule as it was difficult for him to understand how anyone can do it by violent manipulation after the method of Lorenz, excepting in a very small percentage of cases. The proposition is the old difficulty of making the femoral head pass the opening in the neck of the capsule. The former is invariably larger than the latter. The opening is smaller than is the bone which has to go through it. About the highest percentage of satisfactory anatomic repositions which can be expected is 10 per cent. with the forcible manipulation of Lorenz. Dr. Sherman still believes that the method which is right is the one which definitely does what the operator sets out to do. Dealing with a dislocation, the object is to reduce it. He said he could not accept any method as satisfactory which fails to reduce, and he did not see any reason for temporizing with a half-way measure when a real anatomic reduction can be accomplished by means of a small incision, an incision which shall go anterior to the tensor vaginæ femoris so as to avoid cutting off its nerve supply, and which shall cut no muscular tissue, and lying in its original position. In the latter case they may capsule of the joint. Through this the head can be put into the acetabulum and the reduction will have been accomplished. Dr. Sherman wanted to hear Dr. Willis' explanation of how he accomplishes the feat of making the camel go through the eye of the needle.

Dr. E. H. Parker, Portland, Ore., said that he has under his care a family in which the grandmother, aged 60, weighing 200 pounds, has congenital dislocation of the left hip joint, which has given no trouble all these years, although she has raised a large family. She walks with a limp, but gets along nicely. Her oldest daughter has congenital dislocation on the same side, but her granddaughter, a child of 10 years, is perfectly formed.

Dr. James E. Moore, Minneapolis, protested against the misnomer, "the bloodless operation." He declared it the most bloody and the most unsurgical procedure that he had ever had anything to do with. The operation of the future will be the open operation and not a mutilating one, which does not give the surgeon the opportunity to see what he is doing. There will be no more stiff legs and deformed children. The Lorenz method leaves the patients in worse condition than they were before.

Dr. S. C. Baldwin, Salt Lake City, said that he believes that Dr. Sherman is very near to the proper solution of the problem. There is in all these cases a malformation of the head and a filling up of the acetabulum. The head is so badly shaped that it will not stay in position. Dr. Baldwin said that the Lorenz operation is a very bloody operation, and that he does not believe that we should resort to it to such an extent as to cause a severe ecchymosis. The Hoffa operation does too much damage to the soft tissues. The operation of the future will be done in the general way Dr. Willis speaks of. After cutting down with a small incision, the head of the bone will be put in position. With all precautions there will at times be suppuration. It is not possible to avoid this in every case, and consequently an operation by the manipulation method without any great damage to the soft tissues is the best thing to do. Dr. Baldwin believes that the coming operation will be the Sherman operation.

Dr. A. J. Ochsner, Chicago, expressed the fear lest the drift of this discussion, being entirely against the manipulative method, should leave the wrong impression on the minds of those who have no experience with this operation. A great amount of harm has been done in patients not properly selected, especially as regards the age of the children, but this is not the case where the proper selection is made. Dr. Ochsner said that he could speak with authority because he has seen some twenty cases properly selected in which the dislocation was proved by the skiagraph before the treatment was begun and, after the treatment was completed, the skiagram showed that the dislocation had been reduced. Moreover, in one case of a double dislocation of which there is a skiagram, he has seen the specimen after autopsy, the patient having died three years later, after walking perfectly for one and a half years. The skiagram showed absolutely that there was a dislocation before this treatment was commenced, and as shown by the specimen, it was absolutely reduced; consequently this shows what can be done in properly selected cases. Dr. Ochsner said that he had never operated by the manipulative method. All of the cases he has observed before and after the treatment were operated on by his brother. In young children, to the age of 5 or 6 years, this method should be employed by a competent surgeon. If a surgeon knows how to perform this operation properly and chooses the proper kind of cases, this method will produce many excellent results which will be functionally and anatomically satisfactory.

Dr. P. W. Willis replied as to the position of one of the hips shown, of which it was said that this, being anterior to the plane of the body, would tend to cause a posterior dislocation. This hip was reported as being anterior and was brought forward purposely in order to bring the head of the bone back nearer the acetabulum. Some say that the open incision is a surgical procedure. After reading reports and hearing Dr. Willard's remarks, Dr. Willis still considers that this intensely surgical procedure gives us stiff joints and crippled patients. It does not matter whether the procedure is surgical or otherwise, providing the desired result is obtained. One speaker says: "Make a very little opening; what harm can it do?" Enough germs can get into a small opening to ruin both hips. A penetrating wound is one of the most dangerous. If an incision is decided on, make a large one to place the head in position. It is not everything, however, simply to open the joint. The long muscles are shortened, and it is necessary to stretch these and other structures in order to put the head into place. The reduction of the head is often easy, but to keep it there is the point. Even with open incision Dr. Willis' cases do not always stay there. According to the pathology of this condition, at birth the head of the bone is very close to the acetabular cavity, and in the majority of cases there is a large short capsule without contraction. As the child begins to walk, however, the head of the bone passes away from the socket and in time the capsule may be drawn out until it presents that contracted condition shown by Dr. Sherman. When this takes place the open operation is indicated. Good functional results are what we are striving for, and in many instances these can be obtained by the manipulative method. Dr. Willis disclaimed responsibility for the term "bloodless;" he did not refer to it in his paper. The operation is not bloodless, and even with great care there is ecchymosis. The manipulation should be as gentle as possible.

THE CURE OF HERNIA.*

HENRY O. MARCY, A.M., M.D., LL.D.

BOSTON.

Three decades have nearly passed since I first obtained respectful attention from the Section on Surgery of the American Medical Association, when I announced a new method for the cure of hernia.

This method was based on the reconstruction of the inguinal canal to its normal obliquity. This was rendered possible only by a free dissection of the parts, the resection of the redundant peritoneum and closure of the deeper structures beneath the cord. The cord was then replaced and the external structures united. The wound was sealed with collodion. The suture material was catgut, furnished me from Glasgow, Scotland, by the instrument maker who prepared ligatures for Mr. Lister, after his formula. The buried animal suture was the inspiration of the moment, born of necessity, in the closure of a strangulated inguinal hernia. This was in 1870. A long series of histologic experimental studies on animals was undertaken to determine the results of buried suturing, and the technic of the operation was carefully worked out in detail.

The crucial experience of the years has naturally resulted in very many modifications of technic, by many surgeons. The fundamental factors of the operation, however, must ever remain the same, since they are based on the physiologic plan of normal development.

The obliquity of the inguinal canal was more or less recognized by all the early anatomists, but, so far as I am aware, had never been emphasized, or even referred to, as the reason why hernia did not take place in the normally developed male. The reason that hernia is not more common is dependent on the fact that the intra-abdominal pressure, acting on the normal structures, brings this force to bear at right angles to the long axis of the canal and hence, the greater the pressure, the more closely the walls of the canal are approximated.

This valve-like construction of the canal is brought into play in the human organism only in two other instances: the entrance of the hepatic and pancreatic ducts into the intestine, and the point of entrance of the ureters into the bladder.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

The operative procedures for the cure of hernia are absolutely dependent on the use of buried sutures, since without them the reconstruction of the inguinal canal to its normal pattern is impossible.

More or less imperfect attempts were made to accomplish this, without recognition of the principle, by many of the early operators. One was the so-called invagination process, in which an instrument was firmly thrust, from below upward, through the canal, returning the peritoneal pouch, thereby carrying the cord upward, and fixing it in position by the introduction of wire sutures from below; more commonly they were brought out externally and twisted over some foreign material to protect the skin. Infection usually followed, and suppuration was welcomed because of the belief that the infiltration and induration, which supervened, greatly aided in strengthening the surrounding parts.

This method was improved on by the distinguished surgeon, John Wood of London, and his still well-known method of suturing by the implantation of wire, without the plug, in the canal. He became very dexterous in this operation and reported a large number of cures. Without especially emphasizing the reason, the result attained was the lifting of the internal ring and the cord to a much higher plane in the abdominal wall.

At an earlier period, great success was attained, especially by the surgeons of France, in the cure of hernia by boldly making an open wound, excising the testicle and cord and either closing it by means of sutures or, perhaps more commonly, by treating it as an open wound and allowing it to granulate from the bottom. This latter method was emphasized, since it was believed that the cicatricial mass resulting gave a stronger abdominal wall. It is extremely probable that these observations were correct, since the open-wound method and through and through suturing gave a wound almost necessarily septic, with a very imperfect result. Even now it does not appear possible that improvement could have been made on the older measures, until the scientific demonstration of wound infections, and, as a consequence, how to avoid them became the basis of a new technic. This must ever remain to the immortal honor of my great master, Lord Lister.

The object of this paper, however, is not a historical résumé, but rather to ascertain if, even now, we have arrived at a general consensus of opinion as to the measures which are essential and the operative procedures which should be adopted. At the outset let it be emphasized that, while the general measures of restoration may be agreed on, it is a well-known principle of applied mechanics that the operator best attains results by the means with which he is most familiar. While there are comparative means of excellence and the result attained good, the methods employed should never be considered absolutely faulty unless they fail to accomplish the end desired.

To make myself more clear, the first object of eating rice is the transposition of this nutritious article safely into the stomach. The Chinaman would declare that his chopsticks were used far more advantageously for this purpose, and besides that nine-tenths of all the rice eaten is expeditiously carried into the mouth by these simple instruments. Few Europeans or Americans, for this reason, however, would be content to abandon the fork or the spoon. For an equally good reason I should consider relatively immaterial the character of needle or other instruments employed. This view relegates as comparatively unimportant a very considerable number of so-called methods which are prominently labeled by the name of the author.

Beside the anatomic reconstruction, the one essential is the absorbable, animal suture. This may consist of properly prepared catgut, but for many reasons the carefully selected tendons from the smaller varieties of the kangaroo are much to be preferred. When prepared to retain their strength for only a few days—and they permit of ready absorption—they are ideal. They must be applied, however, so as to hold the reconstructed structures in coaptation with as little injury as possible and without constriction of the enclosed parts. Too much force applied is an almost universal criticism.

CAUSE.

When we remember the late period of development in fetal life, and that by second thought, as it were, Nature changed her plan and decided to remove the testicles from within the abdomen; and when we study the method by which she accomplishes this object, we not alone find the reason why such a large percentage of males suffer from hernia, but may wonder, rather, that more are not subject to this infirmity. The spermatic cord for the transfer of semen from the testicle to the seminal vesicle is not alone enormously lengthened, but its double system of accompanying vessels must be maintained. Organs of considerable size must be transposed to an entirely new relationship and they must carry before them a prolongation of the peritoneum as a proper protecting envelope. This dainty enwrapping structure becomes blended with the vas deferens and vessels, making up the component parts of the cord. This structure must lie at easy physiologic anchorage and yet the abdominal wall must not be weakened by its passage.

Defective closure of the internal ring is not rarely apparent, even in men who are not afflicted with hernia. Cloquet came to the conclusion, after 500 dissections, that the internal ring was so open that a depressed spot in the peritoneum marked its site, and this has since been called after him, the infundibular process of the peritoneum. In the normal subject, however, this is produced only by pulling on the cord, when, of course, its attachment will deflect outward the abdominal peritoneum. My own studies lead me to believe that the internal ring is often unduly open, owing to an incomplete development, and that this is by far the more common cause of hernia, even in those patients in whom this infirmity develops late in life.

By a singular, wise provision of Nature, the intestinal contents are so distributed that the law of gravity is minimized in its hydrostatic pressure. This, however, is necessarily greater in man, as an upright animal, on the lower portion of the abdominal restraining wall, than in the quadruped, and man, therefore, is much more likely to have hernia of the inguinal canal than animals.

Given a slight weakening of the internal ring in man, producing a dimpled depression, and multiply the intra-abdominal force constantly called into play by the time element of years, and we can easily see that there may come a period when these structures, little by little, may yield and form an opening for the lodgment, or escape, of a portion of the abdominal contents.

The man may not have been seriously incommoded until a late period of life. At last a sudden yielding of the external barrier gives evidence to him of the disability, which on this account has from time immemorial been called rupture.

The imperfect completion of the normal process following the extrusion of the testicle is often noticed in early childhood, when a decidedly open canal may be demonstrated, but Nature usually safely finishes the process during the early years of development; this is similarly noticed in umbilical hernia.

WHEN SHALL WE OPERATE?

The preceding discussion leads us to the proper consideration of the class of cases in which operation should be advised. During the tentative period of operative study, naturally all surgeons were more conservative. Since it has been shown that the operation is practically without risk to life, there has been a steadily increasing opinion favorable to operation. Contrary to the views of even a few years ago, at the risk of being dogmatic since the limits of the paper do not permit discussion, we may safely determine that the operation is advised on all children in whom there is difficulty in retaining the abdominal contents.

In children, my personal experience has been large and it has proved a profitable field of study in the elucidation of the fundamental causes of hernia.

Since the methods already referred to and which are to be more specifically described a little later have their simplest application in childhood, they are here to be especially commended. It is true that the surgical manipulation is as dainty as that on the eye, and, as a consequence, is as esthetically admired, but the collodion seal, as a sure antiseptic application, robs the subsequent treatment of its chief difficulty and danger. Were there not a more serious side to the consideration of the more commonly applied antiseptic dressings, by which the little patient is made an intense sufferer, this legacy of conservatism of the past would assume a most grotesque aspect. Some time since I saw one of these little martyrs of so-called modern science enveloped with swaddling clothes like a mummy, held in place by a plaster of Paris, fixed bandage, enveloping the little sufferer from the knees to the navel, and this in a children's hospital holding a first place in the greatest city of America.

A recent English writer tabulates several hundred operations on children, and ascribes a large share of his success to that which I unhesitatingly call a most cruel and injurious procedure.

All know that repair processes in young animals go on much more rapidly than elsewhere. The straining from crying is perhaps the greatest danger with which we have to contend. The happy child cries least, or not at all; and how can we hope to avoid these expressions of pain induced by such inquisitional surgery? The young adult, otherwise healthy, demands relief at our hands from a lifelong infirmity—an infirmity which debars him from athletics, from Government service, and from many of the more active and lucrative departments of life's vocations.

In all the older periods of life the hernial contents may not be safely and easily retained by external supports; in all the more grave and disabling conditions, where life's vocations are seriously limited, and pain and disability are present. There is a small class of cases in which the transposition of the abdominal contents is so extensive as not to permit a safe return into the contracted abdominal cavity, but this class is an extremely limited one and even there measures may be devised, preceding surgery, to make the operation usually a safe one.

OPERATIVE PROCEDURES.

In discussing the essentials, these should be reduced to the last analysis. Asepsis must be maintained, the contents of the hernial sac examined and reduced. The sac itself, if in any considerable degree pathologic and enlarged, is dissected to its base, evenly sutured, under slight tension, in the line of the axis of the canal and resected. The resilience of the peritoneum is quite sufficient to cause it to present an intra-abdominal smooth surface.

The suture best adapted for this purpose is a fine, double, continuous one, care being taken to coapt and not to constrict the included portions. The problem of restoration of the posterior wall of the canal is not so simple, owing in large measure to the deformed and weakened conditions found. Sir Astly Cooper, so far as I know, was the first to point out the singular increase of strength and reinforcement by Nature of the tendinous expansion of the transversalis muscle. Incorporated fibers of the muscle itself are sometimes seen to extend above the internal ring. When this condition exists the internal ring may be said to consist of a slightly ovate opening in the transverse muscle. One certainly finds Nature's strongest bulwark of the posterior wall of the canal to consist of these structures.

In a hernia that is at all pronounced, however, these are so weakened and deformed that they do not furnish a secure reinforcement for the reconstructed internal ring and posterior wall of the canal. In order to give additional strength, I have usually found it wise to include the posterior fibers of the conjoined tendon which are coapted with the posterior fibers of Poupart's ligament. In almost every instance in this way a safe, secure, firm posterior wall of the canal and internal ring, reformed high up on the cord posteriorly, may be constructed. It leaves, as lateral walls, the outer edge of the conjoined tendon and Poupart's ligament.

In other words, this portion of the canal, so far, has been restored in its normal relations and length. It now remains to replace the cord and to restore the divided fibers of the external oblique to reform the external wall of the canal. It may be well, at least for one of comparatively limited experience, to mark by forceps or suture the long, brilliant fibers of the external oblique at the time of division, and then there is an anatomic landmark for their reconstruction. I am in the habit of taking an extra suture through the structures which go to make up the upper border of the internal ring, since I have known a few cases of direct hernia to follow when the structures were unduly weak. This may not be necessary, but I deem it a wise precaution; a single mattress suture is usually the best means of reinforcement.

A third suture, subcuticular, also continuous and of the very finest type of material is taken through the deeper layer of the skin only; care should be observed that the needle does not penetrate the hair follicles or sweat ducts. If applied with proper care and accuracy, the edges of the skin are held in even coaptation. The collodion seal, reinforced by a few fibers of cotton, carefully applied and dried, finishes both the operation and the dressing.

If accurately and aseptically applied, easy, painless primary union will supervene.

Following these processes of repair, a strong, reconstructed inguinal canal is formed of normal obliquity. The intra-abdominal pressure is evenly borne by the reconstructed abdominal wall and hernia is no more likely to return than in the individual in whom the processes of normal development took place.

If the limits of this paper permitted, we would find a most interesting chapter of history in tracing the various modifications of this operation which have been recommended, especially during the last ten years.

Underlying these is a more or less intelligent effort at reconstruction to the normal pattern. The structures involved have been variably manipulated, even to the transplanting of the cord outside of the external oblique muscle. This latter method is, of course, not to be commended, since the structures of the cord are comparatively unprotected in their new relations and, at the best, emerge through a direct opening in the abdominal wall.

To all surgeons familiar with the practical advantages of the absorbable suture, it seems strange that any good operator can still be found using silk as a buried suture. Recently I discharged from the hospital a young, otherwise healthy, man who last December was operated on by one of Boston's chief hospital surgeons for the cure of hernia. By accident the cord was divided and, as a consequence, the testicle was removed. The hernia was cured, but he had had four subsequent operations because of stitch abscess. It became necessary to make a free dissection in order to find and to remove two deep silk ligatures, one of which was still encompassing the cord. The wound was reclosed by buried tendon sutures and the operation was followed by primary union. Instances of this sort are far too common to be considered accidental or ascribed to fault of technic other than the use of improper suture material.

Dr. Maynard of Dedham, Mass., in 1846 gave to the profession, as a surgical dressing, collodion, a discovery made incidentally to his research work in the investigation of gun cotton. The discovery has proved to be of very much greater value than was at first supposed, since its use in septic wounds, then almost invariably the rule, was detrimental rather than otherwise. An aseptic wound aseptically closed by aseptic, buried, absorbable sutures, is kept aseptic by the use of the collodion seal. Iodoform, in solution, inhibits the development of the *Streptococcus pyogenes albus* in the skin. The seal is loosened only by the proliferation of the epidermal cells and is absolutely trustworthy for a week or ten days. Such a seal may be reapplied, but an aseptic wound thus aseptically treated has in this period undergone processes of repair and is beyond the danger of subsequent infection.

The measures here recommended apply equally well to all aseptic wounds in all parts of the body, but they were first used and their values demonstrated in my early operative work for the cure of hernia.

Special Article

IMMUNITY.

CHAPTER XXIII.

PARATYPHOID FEVER.

Two Types of Organism.

In 1900 Schottmüller cultivated from the blood of five "typhoid" patients organisms which differ from the typhoid bacillus in that they attack dextrose with gas formation and are not agglutinated conspicuously by antityphoid serum. Since that time, many similar cases have been reported and two types of the paratyphoid bacillus have been recognized (Schottmüller). Group B causes first an acid reaction in milk which changes to a permanently alkaline reaction in about ten days, whereas Group A causes permanent acidity. (Kayser.) They resemble the typhoid bacillus morphologically. These organisms are more closely related to the bacillus enteritidis than to the typhoid bacillus.

The term paratyphoid is justified only because of the similarity of the symptoms to those of typhoid fever.

"Paracolon" Bacilli.

Previous to the observations of Schottmüller, Widal, in 1897, had shown a "paracolon" bacillus to be the cause of a typhoid-like infection, and a similar observation was made by Gwyn in this country in 1898. These organisms are not different from those which are now called paratyphoid bacilli, and the infections resemble the recorded cases of paratyphoid fever. The term "paracolon" should no longer be applied to these organisms.

Methods of Infection.

The disease occurs sporadically or in epidemic form, and bears a close resemblance to mild typhoid-like epidemics which have been noted from time to time, and which, presumably, were caused by eating poisonous meats. One such epidemic of 600 cases was caused in Switzerland in 1878 by the meat of a sick calf; the mortality was 1 per cent. A still older epidemic (1839) is cited, likewise caused by meat. In both instances, the infection eventually was carried from person to person by contact. A recent epidemic in Kiel, proved to be paratyphoid, is assumed by Fischer to have been caused by infected meat, on account of the peculiar distribution of the cases among the patrons of a particular market. Kurth also attributed a small epidemic to either uncooked meat or milk. Fischer mentions an epidemic of 50 cases in East Holstein which probably was caused by the milk of two infected cows. Shortly after the epidemic began the cows died and paratyphoid bacilli were cultivated from the muscles, spleen, liver and intestines. Infected water also may cause epidemics. De Feyfer in an epidemic of 14 persons in Holland, considered that the disease was transmitted through the water of a stream in which the clothing of the first patients had been washed. In another instance, a regimental infection (Saarbrücken) was traced to the discharges of a single soldier, the water supply having become contaminated through a defective water closet.

Characteristics of the Disease.

Paratyphoid, like typhoid fever, is accompanied by an enlarged spleen and many rose spots. Although severe symptoms may be present for a time the course of the disease usually is mild and the mortality is low. The incubation period approximates that of typhoid. In the few cases which have come to autopsy the intestinal lesions have varied from a mild ileocolitis with an intact mucous surface to a condition of superficial ulceration. The involvement of Peyer's patches and the solitary follicles which is so characteristic of typhoid is absent, although these structures may be moderately swollen. The mesenteric lymph glands are not markedly involved and there is little proliferation of the lymphoid or endothelial cells (Wells and Scott). The disease has no specific anatomic lesion.

Occurrence of Bacillus in the Body.

The organisms are found in the blood and various organs, in the rose spots, urine and feces of the patients. Practically nothing is known of the occurrence of the bacilli outside the body. Because of their presence in the stools and urine of the patients, the methods of dissemination and infection doubtless are similar to those concerned in typhoid. The bacillus is said to have a marked resistance to heat, withstanding 60 degrees C. for 30 minutes and not all cells being killed during one hour at this temperature. This may explain the fact that the virus is not always killed by cooking the meat. The organism probably has a wide distribution because of the occurrence of the infection in various parts of the world.

The toxicity of the bacilli depends on the existence of a fixed endotoxin; a soluble toxin is not produced.

The principles of prophylaxis against typhoid also apply to paratyphoid fever, with the addition that in the latter disease the possibility of meat infection must be kept in mind.

The serums of patients and immunized animals acquire bactericidal and agglutinating powers for the organism.

There is no serum therapy for the infection, nor has the occasion arisen to attempt vaccination.

Agglutination and Blood Cultures.

Serum from a paratyphoid patient may agglutinate the homologous bacillus in a dilution of 1/1000 or 1/2000 or more (E. H. Ruediger), whereas the typhoid bacillus is agglutinated only in low dilutions by the same serum. However, bacillus A and bacillus B are not identical in their agglutinable properties; in this respect it is stated that the latter is more closely related to the typhoid bacillus than the former. The agglutination test is said to have a higher diagnostic value than the Gruber-Widal reaction in typhoid, a stronger agglutinating power being developed in the serum of the patient. Nevertheless, the formation of coagglutinins may render the test confusing if proper serum dilution is not practiced. Conclusions should not be attempted until the test has been performed with both strains of the paratyphoid bacillus and with the typhoid bacillus. As in typhoid, early diagnosis may be best accomplished by bacteriologic examination of the blood.

DYSENTERY (BACILLARY).

Amebic Dysentery.

In 1878, Lösch, in St. Petersburg, discovered in the stools of dysenteric patients a protozoon ameboid organism which is now recognized as the cause of amebic dysentery. The organism is called Amœba coli (Lösch) or Amœba dysenteriæ (Councilman and Lafleur). The disease prevails especially in tropical and subtropical climates, but also occurs in sporadic form or in small epidemics in temperate latitudes, and often becomes chronic.

Bacillary Dysentery.

There is another type of dysentery, an acute infection which often appears in widespread epidemic form in both tropical and temperate climates, and prevails especially in the summer months. Such epidemics occur extensively in Japan, where the mortality may be 24 per cent.; in the Philippines, United States, Germany and other European countries. In industrial settlements in Germany the mortality is about 10 per cent. (Kruse). The incubation period may be as short as two or three days. In mild cases the patient may recover in from four to eight days, whereas severe cases last from two to four weeks, during which time death may occur. Occasionally the infection lasts sufficiently long to be considered chronic.

Two Types of Bacilli.

In 1898, Shiga, basing his conclusions on positive results with the agglutination test and on the constant presence of the organism in the stools of the infected, identified as the cause of the disease in Japan a microbe which is known as Bacillus dysenteriæ (Shiga). Flexner, in 1900, made similar observations on epidemic dysentery in Manila, and his organisms or one of them, differing slightly from that of Shiga is called Bacillus dysenteriæ (Flexner), or the Flexner-Harris bacillus, Harris being the name of the patient from whom this typical strain was cultivated. Kruse (1901) found both the Shiga and Flexner types in Germany, needlessly giving the names of "pseudodysentery" bacilli to the latter. In this country similar organisms have been found as the cause of institutional dysentery by Vedder and Duval,

Summer Diarrheas.

of summer diarrheas of infants by Duval and Bassett, and by Wolstein. It is the belief of Vedder and Duval that acute dysentery, the world over, "whether sporadic, institutional or epidemic, is caused by the dysentery bacillus." We must note, however, that the organism is not found in all cases of clinical dysentery, even by skilled bacteriologists. "Clinically, 24 of our 97 cases in which dysentery bacilli were found did not differ from the cases of ileocolitis in which the dysentery bacilli were not found." (Weaver and others.) It seems certain, nevertheless, that Bacillus dysenteriæ is the most important cause of acute dysentery. It rarely occurs in the stools of healthy individuals.

Characteristics of the Bacilli.

The organism has about the dimensions of the typhoid bacillus, but is thicker. It probably is non-motile, although Vedder and Duval, in opposition to others (Lentz) claim to have demonstrated flagellæ. It often shows a polymorphous appearance in cultures, but forms no spores. It is Gram-negative. It lives for from 12 to 17 days when dried (Pfuhl); direct sunlight kills it in 30 minutes, 1 per cent. carbolic acid in 30 minutes, 5 per cent. carbolic acid plus corrosive sublimate (1/20000) almost instantaneously. It is thought that it may live over winter and cause fresh outbreaks in the spring (Kruse). The organisms of Shiga and Flexner differ in their actions on sugars (i. e., in their acid-forming powers) and in the agglutinability. "The 'Shiga' type attacks glucose, but none of the other sugars, including mannite and lactose. The 'Flexner' type attacks glucose and mannite and dextrin but not lactose." (Flexner.) The "Flexner type then is the stronger acid-forming. An artificially produced immune serum which is specific for one organism has rather higher agglutinating and bactericidal powers for the corresponding type, but low for the other. Several other organisms have been cultivated from dysenteric patients, but their variations from these two types are slight. All are certainly very closely related. In this country the "Flexner" bacillus is much more common than that of "Shiga," but here and abroad both types are met, and sometimes in the same individual.

Distribution in the Body.

In the living, the bacillus is found only in the stools of the infected, in the mucous or muco-hemorrhagic portions of which it exists almost in pure culture, few colon bacilli being in the immediate vicinity; it has not been found in the blood or urine. In fatal cases, Shiga found it only in the intestinal ulcers and swollen lymphoid structures and in the mesenteric lymph glands. Flexner mentions its occurrence in the liver. The organism, if it reaches the circulation at all, either does so in small quantities, or is rapidly destroyed by the blood. The infection resembles cholera, but differs from typhoid and paratyphoid in this respect. An observation by Markwald (cited by Lentz) indicates, however, that the bacilli may reach the circulation. A woman sick with dysentery gave birth to a child, which died within a few hours. Dysenteric changes were found in the intestines, and the bacillus of dysentery was cultivated from the diphtheritic deposits on the intestines, from the meconium and from the heart's blood. The organisms must have reached the child through the placenta from the circulation of the mother.

Lesions.

The intestinal lesions vary from a simple inflammatory hyperemia to rather extensive superficial necrosis (diphtheritic inflammation), which rarely extends below the submucosa. Such foci are said to be the most marked in the descending colon and sigmoid where mechanical injury is most likely to occur. The necrotic areas separate by sloughing, leaving superficial ulcers. The lymphoid follicles are swollen and infiltrated with polymorphonuclear leucocytes, which also accumulate in the dilated lymph spaces of the intestinal wall. The ileum is so commonly involved that the condition is called an ileocolitis. Conspicuous changes are not found in the mesenteric glands or spleen. The liver and kidneys commonly show parenchymatous degenerations.

Toxicity of Organisms.

The dysentery bacillus is a highly toxic organism. Subcutaneous injections of killed cultures in man produce a more profound reaction than the organism of either cholera or typhoid. Ordinary laboratory animals are so susceptible that they are immunized with difficulty; the horse is less susceptible. The toxicity of the organism apparently depends on an intracellular toxin (an endotoxin) rather than on a soluble toxin. When living or killed cultures are submitted to autodigestion in salt solution (Conradi, Nisser and Shiga), or when bouillon cultures are allowed to grow for 30 days, the liquids are found to be toxic after the organisms are removed. In both instances, this toxicity probably depends on the liberation of endotoxins. The question as to whether the bacillus in the intestines produces a soluble toxin which is absorbed by the lymphatics, is undetermined. It seems more probable that the conditions are analogous to those of cholera, intoxication resulting from the liberation of endotoxins by the solvent action of the tissue fluids or cells on the bacilli. Dysenteric symptoms are not produced in animals by feeding the organisms.

The stools of the patient are the only known source of the organism and it continues to be excreted during convalescence.

Dissemination and Infection.

Latent or chronic cases are a source of danger to a community. Although the conditions outside the body are not favorable for the growth of the organism, it may remain living and virulent for several months. The methods of infection appear identical with those seen in typhoid. Water infection seems certain, and indirect transmission is readily accomplished by contact with the discharges. The best examples of contact infection are found in institutions, as insane asylums, or foundlings' homes, where the disease may become endemic.

Prophylaxis and Susceptibility.

The first essential for prophylaxis is correct diagnosis, for which the agglutination tests and bacteriologic examination of the stools are essential. Disinfection and other precautions should be practiced as rigidly as in typhoid. The patient should not be discharged until the stools are free from dysentery bacilli.

Poorly nourished individuals are particularly susceptible to infection, and among them the mortality is high. The disease is most common among young children, old people, and those who are confined in institutions. The conditions in Japan, however, where from June to December of one year nearly 90,000 were attacked, and in Germany, where severe epidemics occur in industrial communities, indicate that susceptibility is quite general. Digestive disturbances and enteritis from other causes are said to be predisposing factors. The normal serums of man and animals have very little bactericidal power for dysentery bacilli.

Immunity.

The subject of acquired immunity to dysentery is hardly on a satisfactory basis. The serum of convalescents shows a distinct bactericidal power for the organism, and there is good reason to believe that the acquired immunity persists for some time after the disappearance of the bactericidal amboceptors, an event which takes place rather early. As in typhoid, animals which through immunization have once been stimulated to produce antibodies, form them much more readily on the occasion of a subsequent inoculation. This acquired facility of producing antibodies may be a factor in acquired immunity. By immunizing horses, serums of rather high protective power have been obtained. Kruse prepared a serum of which 1/80000 gram would save a guinea-pig from a dose of the bacilli which killed a control in 20 hours. It is assumed that the protective power of this serum is due to its bactericidal action. The antitoxic serum which Rosenthal prepared, by immunizing with 30 days' old bouillon cultures, protected not only against the toxin, but also against the bacilli; and conversely an antibacterial serum protected against the toxin (cited by Lentz). Such results leave us very much in doubt as to the existence of a true antitoxic serum.

Vaccination and Serum Therapy.

The value and feasibility of protective inoculations are not well established. Shiga at one time practiced mixed active and passive immunization (bacilli plus immune serum) on 10,000 individuals. This did not decrease the number of infections, although a lower mortality resulted. Shiga claims that the therapeutic use of his serum reduces the mortality to one-third of the untreated. The serum of Kruse, and also that of Rosenthal, are said to be curative; the discharges rapidly decrease in number and the course of the disease is shortened. In the hands of the Rockefeller Institute antidysentery serum proved of no distinct value.

Agglutination.

The agglutination reaction with the serum of patients shows great variability. It is sometimes absent in spite of the presence of bacilli in the stools, and often disappears rapidly during convalescence (in two weeks occasionally). It is rarely as high as in typhoid, and this is true also of artificially prepared serums. In infantile diarrrheas it commonly appears at about the end of the first week of illness (Duval and Bassett). Evidently mild cases in which the course of the disease is from four to eight days may not be recognized by means of the agglutination reaction before the period of convalescence. In chronic cases it may persist from three to four months. In a series of cases studied by Duval and Bassett, the reaction with the serums of the patients was obtained in dilutions varying from 1/16 to 1/25, twenty times; 1/40 to 1/60, twelve times; 1/100, twice; 1/200, three times 1/500, once; 1/1000 twice. No reaction was obtained with the typhoid bacillus. Kruse considers the reaction diagnostic when it occurs in a dilution of 1/50; Pfuhl, 1/30. Strong co-agglutinins for other organisms, i. e., above 1/50,, have not been observed (Lentz). The tests should always be performed with both the "Shiga" and "Flexner" types, as the two have not identical agglutinable properties, and either organism may be the cause in a given instance. The absence of the reaction does not exclude dysenteric infection positively. Bacteriologic examination of the stools is important, often necessary, for early diagnosis.

Clinical Report

A CASE OF AINHUM.

MARCUS F. WHEATLAND, M.D.

NEWPORT, R. I.

Seeing the article on ainhum by Dr. Brayton in The Journal, July 8, 1905, reminded me of a similar case which came under my care about six years ago and which was reported to the Newport Medical Society during the past year.

Previous and Family History.—M. R., negro, widow, aged 53, was born in Queen Anne County, Maryland. Her mother died in childbirth, aged 42; her father was part Indian, and died of rheumatism, aged 92; he lost both toes when about 23 years old.

The patient consulted me in December, 1899, at which time a band had formed around the base of the little toe of the left foot, and from a fissure formed at this point there came a discharge. The toe was swollen and painful. With cleanliness it improved and remained quiescent until 1903, when it again began to swell and to cause great pain. The patient stated that one evening while in great pain the toe parted from the foot as if shot from a pistol and landed about 8 feet across the room carrying with it a piece of cloth which was wrapped around it. The disease appeared in the right foot about two years previous to its appearance in the left, but the process in the former was never very active. She thinks the process in the left foot was completed in four years.

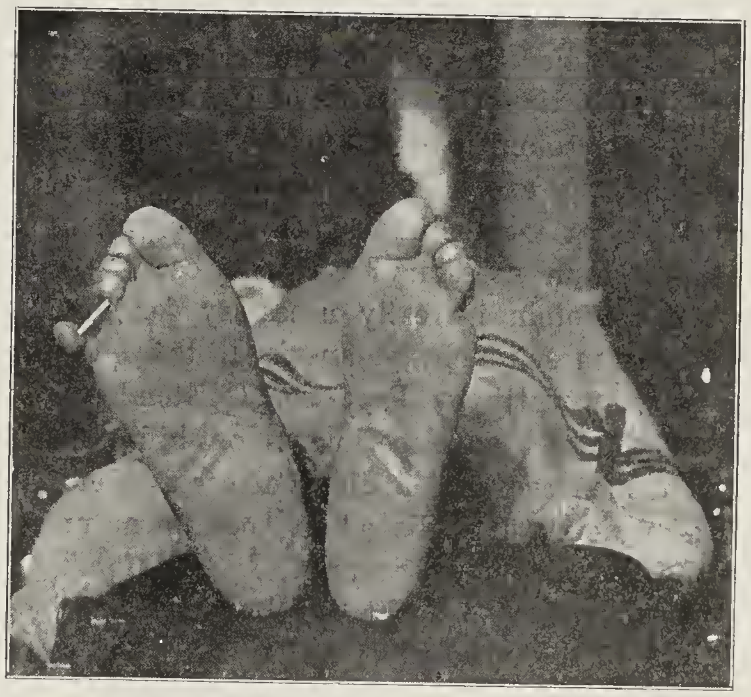

Fig. 1.—Little toe on left foot severed. Little toe on right foot constricted at base. Toe not much swollen.

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RECENT ADVANCES IN PHYSIOLOGIC CHEMISTRY.

In his recent address before the American Chemical Society at its Buffalo meeting, Professor J. H. Long[1] discusses briefly some of the most important recent advances in physiologic chemistry. While the work referred to may be familiar to many, nevertheless an outline of Professor Long's address may not be without interest because it should give us a fairly definite idea of what the actual workers in this field, the physiologic chemists, themselves consider the most important lines of advance.

The first problem discussed is that of protein in nutrition, a much debated question ever since the beginning of physiologic chemistry. Liebig held that the protein substances were built up into tissues and that the oxidation of these was the sole source of muscular energy. In 1866, however, Fick and Wiolicenus showed that protein combustion was far too little to account for the muscular work done in an ascent of Faulhorn, and since then practically all who have investigated the subject have concluded that fats and carbohydrates are the usual sources of muscular energy in man. The Liebig theory implied that our protein consumption should be high, but in time the wisdom of this plan came to be doubted. If protein is of use mainly to repair waste in the tissues, why expend large amounts of extra energy on the useless metabolization of more protein many times over than necessary? Thus arose the question how much protein is really necessary for the normal body? The most conclusive answer to this question has been given recently by Professor Chittenden of Yale University, based on experiments on himself and on groups of men engaged in different occupations, the results of which are published in book form under the title of "Physiological Economy of Nutrition." These results show, as is no doubt well known to most of our readers, that the usual protein intake may be restricted greatly for persons in all ordinary occupations (professional men, soldiers, athletes), and with evident benefit so far as the general physical condition is concerned. Consequently, the Chittenden investigation marks a decided step forward in the adjustment of our diet to our physiologic needs—a most important advance in physiologic chemistry, and of direct interest to physicians.[2]

The next phase discussed by Long deals with the structure and composition of the protein molecule. This problem is even older than the previous one, and up till about five years ago the work on it was largely by way of destructive analysis, and it became established that the products of protein destruction are essentially the same so long as it is done in water. The question now arose, is it possible to build up a true protein molecule with these substances, and the answers so far obtained are connected with the two names especially, Curtius and Fischer. Curtius has produced a large number of amino groups and Fischer has synthetized a large number of substances called by him polypeptids, many of which are hydrolyzed by pancreatic juice, give the biuret reaction, etc. In this way it is expected that bodies of great physiologie interest may be constructed.

The study of the soluble ferments is another field of physiologic chemistry in which great advances are being made. A few years ago the question of digestive enzymes was looked on as settled, but the recent investigations of Pawlow has upset entirely the established conceptions of their action. Pawlow has shown that the same digestive ferments have peptic and milk-curdling powers and discovered, furthermore, a new group of ferments called kinases, or activators, the most important being enterokinase, which converts inactive pancreatic juice into active. The erepsin katabolism of peptones, described by Cohnheim, has made clearer the hitherto unknown fate of these substances, which are now believed to be split up in the intestinal wall.

Finally, Long discusses the relations of chemistry to immunity. He points out first that chemists no longer regard all theories of immunity as "visionary and intangible," and that some of the phrases of the Erlich theory are now a part of the language of organic chemistry. The controversy between Arrhenius and Ehrlich as to the character of the reactions between toxin and antitoxin, whether reversible, as claimed by Arrhenius, or not, is outlined, and the opinion expressed that at present the theories of Ehrlich and his followers, based on the presence, as they claim, of several toxins in the fibrates of broth cultures of diphtheria bacilli, may serve to advance investigation better than the Arrhenius theory, an opinion that probably coincides closely with that of immunologists in general.

We note that Long has emphasized four distinct lines along which physiologic chemistry has made and is making progress, namely, the value of protein in nutrition, the composition of the protein molecule, the soluble ferments, and the chemical relations of toxins and other substances and their antibodies. Add to the achievements outlined in these lines the fundamental rôle that chemistry is known to play in general physiologic processes and in pharmacology, and the overwhelming importance of chemistry in normal and pathologic physiology can not be denied.

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[1] Science, Aug. 4, 1905.

[2] This matter was discussed very thoroughly by Dr. Billings and others in the Section on Practice of Medicine at the Portland Session of the Association.

ANTISTREPTOCOCCUS SERUM IN THE TREATMENT OF SCARLET FEVER.

Ever since the first careful bacteriologic studies of scarlet fever were made, it has been recognized that streptococci are almost constantly associated with this disease. The earlier investigations were made on the bacteriology of the throats and of the internal organs and bone marrow in fatal cases. Streptococci were found in a large percentage of these throats and organs, but the investigators regarded the invasion by these organisms as of a secondary nature and not as an essential part of the disease. More recently, blood cultures have shown that these organisms can be cultivated from the blood during life in only a small percentage of cases—12 per cent. in Hektoen's series of 100 cases. Baginsky and Sommerfeld, however, found streptococci in all the organs in every one of 82 cases which they examined postmortem. Some of these patients had died during the first days of the disease before there were signs of a secondary infection. So greatly impressed were these investigators with their findings that they have regarded the streptococcus as the etiologic factor of scarlet fever. This view has not been widely accepted, as the weight of evidence is in favor of the view that these organisms are secondary invaders.

In the light of these facts, it is not surprising that antistreptococcus serum should be tried in the treatment of this disease. This has been done by a number of investigators, among whom may be mentioned Aronson, Moser, Baginsky and Charlton. The earlier reports by these men were very encouraging, but it seems that too small a number of patients had been treated to draw conclusions from the results. Furthermore, some of these men are interested in the manufacture of the serum which they have used, and hence are probably somewhat prejudiced in favor of this treatment. Very recently Mendelsohn[1] of Baginsky's laboratory reported a long series of cases (146 in all) in which the patients were treated with Aronson's antistreptococcus serum. The mortality in this series was 9.2 per cent., which is not any better than the results obtained without serum in the mild epidemics. None of the complications were entirely prevented. Severe lymphadenitis was present in 8 per cent. of the cases and in 17 per cent. of those without serum. A larger proportion suppurated of those that were treated with serum than of those that were not injected. Otitis media developed in 13 per cent. of the injected cases and in 15 per cent. of the uninjected; hemorrhagic nephritis was present in 11.6 per cent. of the injected cases and in 12.2 per cent. of the uninjected cases.

This report shows that there is no great difference between the cases that are treated with antistreptococcus serum and those that are treated without the serum. In view of the fact that the streptococcus plays such an important part in the complications of this disease, it would seem that the failure in getting results with antistreptococcus serum must be due to improper methods of preparing the serum. We know that none of the antistreptococcus sera thus far prepared has demonstrable therapeutic value. It seems, therefore, that good results in the serum therapy of scarlet fever might be obtained if we had a more efficient antistreptococcus serum. Aronson's serum is prepared by injecting a horse with streptococcus isolated from a scarlatinal sore throat and made virulent for animals by passage through white mice. Moser's serum is said by some to have given good results. It is prepared by injecting a horse with several strains of streptococci coming from the internal organs of scarlet fever bodies. The organisms are not passed through laboratory animals before they are used in the immunization. Mendelsohn has used this serum on only four scarlet fever patients, but did not notice a marked improvement after its injection. As this series is very small, further trials with Moser's serum are indicated.

GLYCOGEN IN PATHOLOGIC CONDITIONS.

In addition to the various chemical ingredients constantly found in all animal cells, and sometimes referred to as the primary constituents, there are also secondary constituents which are not found in all cells, at least in recognizable quantities, of which perhaps the most important are fat and glycogen. Glycogen has until recently evaded successful study because it is very soluble in water, and also rapidly disappears from the cell after its death, both of which facts make it difficult to secure material in condition for examination. Methods have been devised, however, which permit of securing well-stained microscopic preparations from fresh material, and control by chemical means shows that the microscopic appearances are a reliable indication of the quantity of glycogen actually present in the tissues. During the process of evolution of these methods many and often erroneous observations and deductions have been made, which have recently undergone a clearing up at the hands of Gierke.[1] Outside of technical considerations, the glycogen question has touched on practical medicine in two chief points. The first is the diagnostic value of the occurrence of glycogen granules in the circulating leucocytes in disease; the second is the diagnostic and prognostic value of the finding of glycogen in the cells of tumors.

So far as available methods go, glycogen can not be detected in all cells under normal conditions. As is well known, it is most abundant in liver and muscle cells, after which in importance come hyalin cartilage and the middle layers of stratified epithelium. On the other hand, ordinary cylindrical epithelium, the pancreas, the nervous system, and many other organs seem quite free from visible glycogen. The usual teaching of the abundance of glycogen in fetal tissues is but partly correct; in fetal muscle it is very abundant and also in the cartilage, but during early fetal life the liver is quite free, and in other organs the amount of glycogen seems to bear no constant ratio to either the stage of development or the rate of growth.

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[1] Deut. med. Wochft., 1905, vol. xxxi, p. 461.

[1] Ziegler's Beitr., 1905, xxxvii, 502.

This idea of a relation of glycogen to cell multiplication seems to have misled earlier observers, who suggested the existence of a correlation between the amount of glycogen in pathologic tissues and the rate of their growth. For example, Brault found glycogen in all malignant tumors irrespective of nature or origin, and, believing it to vary in amount with the energy of their growth, suggested the estimation of glycogen content as a matter of prognostic significance. The most recent studies give quite different results. Glycogen is not present in all tumors by any means, nor is it an index of their embryonal nature. It is perhaps most abundant in hypernephromas, although normal adrenal tissue is free from or poor in glycogen; in squamous celled carcinomas with hornification it is also abundant, while less so in sarcomas, and altogether absent in many cylindrical celled carcinomas. Granulation tissue cells often contain glycogen and, therefore, it may be present in tubercles and gummas, but not in a manner or quantity at all characteristic or significant.

It is impossible, on these findings, to attribute the occurrence of glycogen in pathologic cells either to an embryonic condition of the cells or to their origin, and there seems to be no specific cause for such abnormal accumulation of the substance. While the circulating leucocytes frequently contain much glycogen during suppurative processes, they may react in the same way to other injuries. Likewise, a connective tissue cell in the vicinity of an abscess, a foreign body, or a tumor, may or may not take on glycogen. Gierke has made the interesting observation that the conditions under which this glycogenic infiltration occur are almost precisely those under which fatty changes are produced, and the two processes go hand in hand. For example, in an infarcted area fatty degeneration occurs in such cells as are deprived of their blood supply but which still receive some nourishment from diffusing blood plasma—that is, the cells about the periphery. Glycogen is also found in the same cells, appearing usually before the fat, which later may entirely replace it. This fatty accumulation is attributed to lack of oxygen, with resulting lack of combustion and accumulation of fat, and Gierke considers the accumulation of glycogen to be due to exactly the same cause. Glycogen is usually found only in cells with an intact nucleus—after the cell dies the glycogen disappears rapidly, although the more stable fat may remain or may even increase. Glycogen and fat often appear in the same cell, although either may occur alone. In tumors, therefore, the cells accumulate glycogen when their nutrition becomes impaired, just as they may also accumulate fat, but this tendency is more marked in some varieties of cells than in others. Glycogen granules may be found in leucocytes either because of injuries they have received while outside the vessels in areas of inflammation or other lesions, or from the effects of poisonous substances in the blood, or, perhaps more important, from toxic injuries to the bone marrow.

From the results of the work so far performed, it may be considered that the glycogen content of tumor cells is without value as an indication of malignancy, and that glycogen accumulation within leucocytes is produced under such various conditions and in such varying amounts by similar causes as to render it of very questionable diagnostic importance.

STATISTICAL INVESTIGATION OF CANCER.

Recently there has appeared, by Drs. Bashford and Murray of England, an interesting and valuable report on the statistical investigation of cancer, published as one of the scientific reports of the Imperial Cancer Research Fund, under the direction of the Royal College of Physicians of London and the Royal College of Surgeons of England. This work represents the accumulation of a large amount of statistics and has been made possible through the collaboration of the authorities of the metropolitan hospitals, the general registrar's office, various hospitals in Ireland, the officers of the Indian and colonial medical services and also members of the veterinary profession, as well as many public and private individuals.

Through the compilation many valuable and new facts appear which will at least modify our views on some phases of the cancer question.[1] A few of these may be briefly noted:

One important indication from this study is that sarcoma increases in frequency as life advances in much the same way as that long recognized for carcinoma. This fact might suggest that the two types of growth may not be so fundamentally different as often considered. Another suggestive fact derived from a study of the age incidence in man indicates that the age period at which cancer appears in those organs in the human body which disappear early or are active throughout life presents a general parallel to the incidence of the disease in animals with short and long lives. Furthermore, the accumulated data on the frequency of cancer in animals indicate, when age is taken into account, that they are as liable to the disease as man, and that the time at which new growths appear in animals stands in direct relation to the absolute duration of life in long- and short-lived animals.

A study of the cancer question in native races has brought out certain points worthy of mention. While the data as yet are somewhat limited, still those so far collected indicate the occurrence of cancer among all the races and under all climates throughout the empire; and the report further states that there is no reason to anticipate that any race of mankind is absolutely exempt from the disease. The races include those of Malta, Fiji, British Guiana, West Indies, and others remote from civilization. The further interesting fact is brought out that diet exerts no influence on the occurrence of new growths, for just as they are found in both herbivorous and carnivorous animals so they are found likewise in those races whose diet is restricted to either vegetable or animal food, as well as to those that subsist on a mixed diet.

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[1] They use the term cancer to include all forms of malignant new growths.

Attention is called to the importance of exercising caution in the interpretation of statistics from localities without taking into consideration the age incidence of cancer. In this way the existence of endemic centers have been thought to occur simply because the total number of individuals and their average age has not been taken into consideration.

Statistical studies of this sort, while not intended, of course, as a means of determining the nature or origin of cancer, are, however, of inestimable value in controling the conclusions derived in other ways, and they may also serve to indicate new and more favorable points of attack.

THE YELLOW FEVER EPIDEMIC.

New cases in New Orleans are not being quite so rapidly reported, and the mortality rate is steadily falling. Despite its noisy quarantine, Mississippi has some cases that have been concealed since July 20. Harsh quarantine regulations are causing widespread misery, while some enlightened communities have stamped out fever without restricting travel. It has been suggested, wrongly it is hoped, that most of the shotgun quarantines will come down when local merchants have disposed of their stocks at famine prices. If these quarantines are, indeed, mercenary in motive rather than due to cowardice and ignorance of rational methods of preventing disease, they mark one of the lowest depths of human depravity. On the Louisiana plantations the disease is finding ideal conditions for rapid spread, and the authorities find therein some of their greatest difficulties. Despite a few shortcomings, the campaign in the city of New Orleans is being valiantly fought and with real success, which will soon begin to show more graphically in the statistics. Over 40 officers of the United States Public Health and Marine-Hospital Service are now on duty in the infected area, and two have contracted the disease. While the Southern rail gateway into Illinois is being closely guarded, a few cases have developed in northern Missouri near the Iowa line and just across the Mississippi from Illinois. If the disease once obtained foothold in southern Illinois, it probably would be difficult to eradicate, if the stegomyia exists there in sufficient number, as the conditions are very difficult for effective sanitary work. The latest news from the scene of the epidemic continues to be encouraging. For instance, in New Orleans the cases that have occurred in the best quarter of the city, that above Canal street, have been mild and so far have not given rise to secondary cases. In other words, among the better classes the disease does not spread when the cases are properly cared for. Unquestionably the epidemic is checked, but continued hard work for three or four weeks yet will be necessary to show whether it can really be stamped out before frost kills the infection-bearing mosquitoes. While physicians hope for this, it will be highly satisfactory if modern methods do no more than cause the number of cases steadily to dwindle.

ETHICS IN THE COUNTY SOCIETY.

The peccadillos of a member of a county society, especially in the smaller communities, are pretty sure to be known to the other members. Very often the offending one in the little matters of professional conduct is guilty by reason of defective training and faulty early environment. Many an offender will cease his disturbing practice if the facts in their true light are kindly and tactfully laid before him. In other words, it should be the function of the county medical society to educate its members in professional conduct, and to avoid, so far as possible, trials and penalties. Rarely is there a society not numbering on its rolls at least one member capable of successfully playing the part of reformer and peacemaker. To him should be allotted the task of censor. Many an offender against professional courtesies and customs will agree to observe all the proprieties if he be properly approached. To begin an effort at reform by bringing charges against the culprit and hailing him before a trial committee does not offer the least hope of making him a better man. For instance, through ignorance or thoughtlessly, a physician occasionally permits himself to advertise in a way that offends his fellows. To win such a man over to the cause of clean medicine, charges and a trial are wholly ineffective, while in a majority of such instances private and kindly moral suasion will accomplish that end by making such a one desire to stand clean among his fellows. To this end organization in itself is a great first step. The society germinates and fosters a sense of professional pride. These things are not simply desiderata of the future. In many places they are long-established facts. Here and there over the country well-organized county societies have been blessed with members who love peace and who are willing to expend effort to rescue a misguided colleague. These men have not been so few as might be thought from the little we hear of them. Let us do away with unnecessary criticism of each others acts and have more peace conferences and fewer battles.

THE ELIMINATION OF THE MOSQUITO.

On page 585 of this issue of The Journal, Dr. Doty discusses the possibility of getting rid of that almost universal nuisance, the mosquito. It is only of late years that the habits of the insect have been carefully studied with a view to its extirpation, and yet there is much room for further knowledge which Doty points out will probably be gained by investigations now in progress. We know enough, however, to relieve ourselves, to a large extent, of the danger and discomfort caused by these pestiferous insects. The success of mosquito-killing methods in Havana and in some places along our Atlantic coast is a very encouraging indication of what is possible with well-directed systematic effort. If we had been more observing in years past, we should probably have seen the connection between the decrease of malaria and of mosquitoes in many sections of our country. It is a well-known fact that, with cultivation and drainage, malaria disappeared in extensive regions of the Middle West, but the coincident disappearance of the mosquito to any extent whatever was overlooked. Whether it will ever be possible completely to eliminate the danger from the mosquito in tropical regions with heavy rainfall is, perhaps, doubtful. We may have to rely largely on the quinin saturation method of Koch in many localities, but a great deal can undoubtedly be done. The fact that the mosquito is so much a home dweller, seldom going far from its place of origin, is a very important one, but its conveyance by steamers, railroad trains and other methods of rapid transit makes any disease of which it is the host more and more a world peril. The opening of the Panama canal may be, as some fear, the cause of the introduction of yellow fever into the Orient, and it is to be hoped that by the time that work is achieved the mosquito question will be more a matter of human control than it is at the present time. The stegomyia is apparently a cosmopolitan resident within certain degrees of latitude, a fact which involves very unfortunate possibilities if we fail to obtain a more perfect control of its migrations than we seem to have at present. The situation, however, is far more encouraging than it was as regards the possible propagation of yellow fever, notwithstanding recent developments. We have probably not yet learned all the iniquities of the mosquito, and it would be well if a still more general campaign of popular education were carried on against it.

UNCINARIASIS IN CALIFORNIA.

Dr Blumer's address on tropical diseases at the Portland session of the Association has apparently received a rather striking illustration from conditions existing in San Francisco. It is stated by the San Francisco *News Letter* that out of 115 Porto Ricans examined in that city recently, over 60 per cent. were found to be suffering from uncinariasis, and it is probable that this apparently represents the condition of the hundreds not examined. The infection seems to be fairly introduced and while it is not probable that the evil prognostications of the newspaper will be fully realized, the matter is one that deserves some public attention. The climate of California is not unfavorable to the spread of the disease and while it is not common in cities, if it should extend among the truck gardeners near San Francisco, there may be possibilities of evil to be considered.

UNWISE AND UNTIMELY EXPERIMENTATION.

It has almost invariably occurred in the history of epidemic diseases that "sure cures" are suggested, sometimes with considerable vehemence, by individuals of more or less scientific attainment, which do not stand the test of scientific investigation or experience. The present yellow-fever situation in New Orleans has been no exception to this rule, and the newspapers of the last few days have been full of notices of the prophylactic arsenic treatment of yellow fever advocated by Dr. R. B. Leach of St. Paul, Minn. According to the newspapers, he claims that the ingestion of one grain of arsenious acid in 1-100 grain doses, or continued until the epidemic ends, will render the individual immune from yellow fever. Incidentally, it is reported that thousands of boxes of arsenious acid tablets have already been sold to citizens of New Orleans. The employment of arsenic is not new. In the form of cacodylic acid (dimethylarsinic acid), as mentioned in THE JOURNAL, Aug. 17, 1901, arsenic acts "by stimulating the reproduction of cells, increasing the number of red blood corpuscles, rejuvenating the tissues and conferring on the economy an extraordinary degree of resistance to morbid influences." Dr. Leach claims that he is cognizant of from 16,000 to 20,000 tests of arsenization in yellow fever, but that these tests were made before the stegomyia had been taken into consideration. The well-known alterative properties of arsenic led to its use in yellow-fever epidemics in Brazil five years ago, and a monograph on the subject was written by Dr. Eduardo Magalhaes, a member of the Brazilian Yellow-fever Commission. If Dr. Leach's claims are valid, why were not reports made through accredited medical channels, and why has he delayed until now, in the midst of an epidemic, to give forth to the world the results of his experience and experiments? Under the conditions which at present prevail in New Orleans, the promulgation of any theory of this kind, not based on scientific principles, is dangerous to those who follow it and to others, because those who have implicit faith in the theory will not pay the proper attention to the cleaning of their premises, to the screening of their cisterns, to the oiling of places where mosquitoes might breed, and to other prophylactic measures. While Dr. Leach undoubtedly is single-minded in his advocacy of arsenic as a prophylactic of yellow fever, and while he is undoubtedly honest in his offer to submit himself and others to the test of inoculation after arsenization, he is gravely in error in making the claims he does for a procedure which is nothing more than empiric, and the following out of which, to the exclusion of approved hygienic measures, must entail grave danger to the community at large.

THE ANNUAL RAILROAD HOLOCAUST.

While few of the vast number of persons carried on American railroads suffer death or injury, the actual casualty figures are appalling. Undoubtedly the accidents of travel in America are excessive. Comparison with the casualty statistics of British railroads has so often been made that there is no need to reproduce the figures, but they are decidedly unfavorable to the railways of the United States, even though the British roads are more crowded and pass through more closely built up territory. Speed is not a factor, as there is no preponderance of accidents to the faster trains and as Great Britain has proportionally more fast trains than the United States. The annual report of the Interstate Commerce Commission for 1904, issued Aug. 16, 1905, presents the following alarming figures, to which are added for comparison those of the previous year:

	1903.	1904.	Increase per cent.
Passengers carried	694,891,535	715,419,682	3
Number of employes........	1,312,537	1,296,121	—1¼
Deaths	3,554	10,046	183
Non-fatal injuries..........	45,977	84,155	83
Passengers killed	321	441	37
Passengers injured	6,973	9,111	31
Employes killed	3,233	9,605	197
Employes injured..........	39,004	75,044	92

Passengers killed, 1904, to passengers carried as 1 to 1,622,267
Passengers injured, 1904, to passengers carried as 1 to 78,523

The statistics for years prior to 1903 exhibit, on the whole, a steady increase in tragedy. The figures are presented for information and for study. It is not in the province of medical men to ascertain the cause of this disgrace of American railroading nor to prescribe a remedy. Those functions are left to railroad men and lawmakers, with the assurance that there is herein plenty of work for both. The report shows that the installation of life-saving devices, such as automatic couplers, automatic signals, air brakes and safety switching devices, has progressed satisfactorily. Why, then, 37 per cent. increase in passengers killed and 197 per cent. in employes killed? The pages of railway journals will be scanned eagerly for a satisfactory reply. Are British railway employes of a higher grade? Are the railways of the United States not enforcing the rules that most of them have against intemperance among employes? Are dividends on watered stock given preference over expenditures for rigid and genuine "block system," elevated ways in cities and ample switching facilities? We can only ask questions. Physicians know, however, that a certain proportion of all sorts of accidents are due to the sudden onset of peculiar morbid mental states in those entrusted with hazards. This subject, in the light of the statistics here presented, demands a close and scientific investigation. Much useful effort is constantly applied to the mechanical problems of railroading, and improvements in this direction seem fully abreast of the times; but there is a most lamentable lack of any satisfactory study of the employes, i. e., of the psychology of railroading.

SMOG.

At a recent health congress in London, a member used a new term to indicate a frequent London condition, the black fog, which is not unknown in other large cities and which has been the cause of a great deal of bad language in the past. The word thus coined is a contraction of smoke fog "smog"—and its introduction was received with applause as being eminently expressive and appropriate. It is not exactly a pretty word, but it fits very well the thing it represents, and it has only to become known to be popular. London is undoubtedly the proper place for its coinage, for it is said to surpass all other places in the opacity of its smog, but so far as mere darkness is concerned some other British and American cities would afford ample justification for the use of the term.

THE PERILS OF THE LUNG TESTER.

In all our large cities there are many slot machines which, while morally innocent, have serious sanitary drawbacks. We refer to the lung testing apparatus that are found in places of amusement, saloons, etc. From a sanitary point of view there are few such appliances that are more objectionable and it is not necessary to specify why such is the case. We have not heard, however, of any general crusade against their use excepting in the city of Montreal where, though suppressed by the health authorities some years since, they have again crept in and become an insanitary nuisance calling for renewed action by the board of health. While it may seem desirable to some occasionally to test their lung capacity on these public machines, a little of the enlightenment that is going round in regard to tuberculous and other infections might be more properly applied to them than to public telephones and other comparatively innocent, but possibly or remotely dangerous apparatus.

Medical News

ALABAMA.

Hospital Reopened.—The City Hospital, Huntsville, which has been closed several months for repairs, was reopened August 15.

Hospital Company Organized.—The Union Street Private Hospital Company of Selma was organized August 9, with a capital stock of $10,000 and the following officers: Dr. Samuel G. Gay, president; Dr. John N. Furness, secretary, and Dr. Barney B. Rogan, treasurer.

Fined for Illegal Practice.—Dr. Thomas P. W. Brooks, Hackleburg, professing to be a graduate of the Georgia College of Eclectic Medicine and Surgery, was found guilty of practicing without a license, fined $25 and costs, and prohibited from practicing until he obtained a license.

Hospital Staff Elected.—The following visiting staff has been selected for St. Margaret's Hospital, Montgomery: Gynecology—Drs. Robert N. Pitts, Arthur H. Montgomery, G. J. Griel and J. H. Blue; surgery—Dr. Robert Goldthwaite, J. Norment Baker, William H. Hudson and Samuel A. Billing; medicine—Drs. Joseph L. Gaston, Milton L. Wood, John M. Sadler and Wooten W. Wilkerson; eye and ear—Drs. Paul S. Mertens, Charles A. Thigpen, William G. Thigpen, George A. Dennis and Henry S. Persons; pediatry—Drs. Charles T. Pollard, Forney C. Stevenson, Milton B. Kirkpatrick and Frank H. McConnico; genitourinary—Drs. Gibson Reynolds, Louis D. Robinson and H. T. Lay; pathology—Dr. Thomas C. Thorington, and advisory board—Drs. Charles A. Thigpen, chairman; J. Norment Baker, secretary; Joseph L. Gaston, Wooten M. Wilkerson and Robert Goldthwaite.

Personal.—Dr. Joseph D. Heacock, Birmingham, has been appointed a member of the health board of the Jefferson County Medical Society.——Dr. William W. Harper, Selma, is ill with typhoid fever.——Dr. William D. Pettus, Republic, who has been seriously ill for two months, is improving.——Dr. Wilbur F. Sadler, Montgomery, in a "personal difficulty" August 6, cut W. R. Barrett in the left temple. The wounds "are not regarded as at all fatal."—Dr. R. C. Woodson, Birmingham, has returned from Europe.——Dr. Wallace R. Bishop, Talladega, has been elected a member of the board of censors of the Talladega County Medical Society, vice Dr. T. Caffrey, removed to Dallas County.——Dr. Samuel H. Lowry, Huntsville, was stricken with paralysis July 6.——Dr. John D. S. Davis, Birmingham, has had conferred on him the degree of LL.D. by the Southwestern University, Jackson, Tenn.

ARKANSAS.

Van Leer Acquitted on Technicality.—Dr. Samuel C. Van Leer, Hot Springs, who has been under the ban of the Federal Medical Board and in trouble with the United States courts, because he prescribed hot-water baths not in accord with the regulations of the reservation, was acquitted on a technicality of procedure, August 7.

The State Board.—Drs. John W. Meek, Camden; William Crutcher, Pine Bluff, and Oscar E. Jones, Newport, are the newly appointed members of the State Board of Medical Examiners. The board reorganized July 11 and elected the following officers: President, Dr. M. L. Norwood, Lockesburg; vice-president, Dr. George V. Poyner, Green Forest; secretary, Dr. Joseph P. Runyan (re-elected), and treasurer, Dr. Ben L. Harrison, Jonesboro.

The "Drumming" Evil.—A plan is being devised by which a warning circular as to doctors' drummers may be distributed on all incoming trains by an officer under the direction of the mayor of Hot Springs. The Business Men's League is taking up the matter with the city authorities, with a view of determining the advisability of such steps.——On August 3 Alva Moore was arrested on two complaints of drumming for the Helena flats.——T. W. Standford, who was arrested on July 7, charged with a similar offense, was acquitted.

CALIFORNIA.

Manson Gives Lane Lectures.—Sir Patrick Manson, commenced the course of nine Lane lectures at Cooper Medical College, San Francisco, August 14.

Rapid Work on Hospital.—Two of the six buildings which are to make up the Merritt Hospital, Oakland, will be ready within three months. One of these is an operating pavilion, and the other a ward building three stories high.

Personal.—Dr. Stanley P. Black has been elected secretary of the Pasadena Board of Health and health officer.——Dr. Ruth A. French, Petaluma, was kicked by a horse, August 2, and sustained a fracture of the skull.——Drs. Francis M. Pottinger, Los Angeles, and George H. Evans, San Francisco, have been appointed delegates to the International Tuberculosis Congress.

Soon Loses License.—Dr. James V. Calhoun, San Francisco, recently graduated from Cooper Medical College, had his license cancelled by the State Board of Medical Examiners, August 2. It was alleged that Dr. Calhoun had advertised by means of a printed card as a private specialist, offering consultation and examination free. It was also alleged that his card contained a "grossly improbable statement."

Joint Sanitarium for Consumptives.—County Physician C. E. Stone, Marysville, proposes that steps be taken to unite with other counties of northern California and establish a joint sanatorium for indigent patients afflicted with consumption. His idea is to have the counties divide the cost of maintaining the institution, and that each send to it such patients as would otherwise be kept in separate county hospitals. By the present system such patients can not be isolated, and are allowed to mingle freely with other patients, some of whom are confined to the hospital only temporarily.

License Trials.—Dr. Walter E. Lilley, Merced, charged with practicing without a city license, was discharged August 10. ——Rudolph H. Garber, San Francisco, was arrested August 12, charged with practicing medicine without a license.——Dr. F. P. N. Van Handghen, Watsonville, was arrested for illegal practice July 18.——Fraud orders were issued July 18 against "Drs." R. Brook Sterling and R. H. Weston, San Francisco, for illegal use of the mails.——"Dr." T. J. Batiere, San Francisco, for whom a warrant was issued July 26, has fled from the city.——"Dr." S. Eve, Watsonville, under indictment for illegal practice, has left the state.——"Drs." Frank Watson and Josefa Dean of Watsonville have been arrested, charged with practicing medicine without a license.——"Dr." G. G. Sanchez, Bakersfield, is awaiting trial for alleged practice without license.——Warrants were issued for the arrest of three Chinese doctors of San Francisco, Tom She Bin, Tong Po Chy and Wong Him, on August 5.

COLORADO.

A New Sanatorium.—Dr. Henry B. Oertel has opened a sanatorium in Pueblo, thoroughly equipped for the care of obstetrical and surgical cases.

Personal.—Dr. Miller E. Preston has been appointed police surgeon of Denver, vice Dr. Francis E. Prewitt, resigned.—— Dr. Maurice Kahn, Leadville, has been appointed captain and assistant surgeon, N. G. Colo.

Correction.—Dr. William W. Bredin asks that the statement in The Journal of July 8 (page 110), be corrected. He gives the following as the facts in the case: "The city council of Denver has recently passed an ordinance to the effect that if a physician has no cases of confinement, he must send in a monthly report to that effect. I did not attend any cases of confinement during the month of May, and I failed to state that fact as many others did promptly on the first of June. . . . I was not fined . . . for not sending or reporting any birth, neither was I fined at all."

DELAWARE.

Personal.—Dr. William Marshall, Jr., has been appointed resident physician at the Delaware Hospital, Wilmington.

Unlicensed Practitioner Fined.—Charles M. Suit, Wilmington, accused of practicing medicine without a license, compromised by agreeing to refund money to persons he had been treating for cancer, and paying a fine for peddling without a license. He then left Wilmington.

Typhoid Fever in Wilmington.—An epidemic of typhoid is threatened in Wilmington, 41 cases having been reported, with, however, but few deaths. The outbreak is attributed to the pollution of the Brandywine River, from which the city receives its supply of drinking water, at West Chester and other places in Chester County, Pa.

DISTRICT OF COLUMBIA.

Personal.—Dr. William M. Sprigg has been appointed a member of the Board of Medical Examiners, vice Dr. Joseph Taber Johnson, who declined reappointment.——Dr. Frank P. Vale, police surgeon, has resigned.

Beginning of New Freedmen's Hospital.—On August 4 the first stake marking the site of the new Freedmen's Hospital, for which Congress appropriated $300,000, was driven by the superintendent, Dr. William A. Warfield.

Fined for Non-Appearance.—Drs. D. Percy Hickling and Frank P. Vale, were each fined $25 and costs for contempt of the Supreme Court of the District of Columbia, the contempt lying in their failure to appear after having been subpoenaed to testify in lunacy cases.

Typhoid in Washington.—The outbreak of typhoid fever in Washington is said to be greater in severity than any preceding epidemic, even the notable one of 1903. Since July 1 more than 300 new cases have been reported. It is stated that the new filtration beds would be ready August 19, and that after that date pure water would be supplied to the city.

ILLINOIS.

New Hospital Dedicated.—The Evangelical Lutheran Hospital at Granite City, erected at a cost of $40,000, and having accommodations for 96 patients, was formally dedicated August 13.

Princeton Hospital.—The Princeton Hospital and Sanitarium, which has been closed for a time, has been purchased by Dr. Matthew H. Blackburn and will soon be thrown open to the public.

Chooses Hospital Staff.—The board of Lakeview Hospital, Danville, met August 7 and elected the following staff for the coming year: Medical—Drs. Elmer B. Cooley, Henri S. Babcock, Abraham L. Fox, Francis W. Barton and Fred Baumgart, Danville; Dr. Jesse H. McIntosh, Vermilion Heights, and Dr. Jacob G. Fisher, Catlin. Surgical—Drs. William A. Cochran, Thomas E. Walton, A. Merrill Miller, Charles E. Wilkerson, Stephen C. Glidden and George L. Williamson, Danville; and eye and ear, Dr. Elbert E. Clark, Danville.

Chicago.

Home from Europe.—Drs. James B. Herrick and Henry Harms have returned after a summer in Europe.

Laboratory Moves.—The demolition of the county building has necessitated the transfer of the municipal laboratory to temporary quarters at Michigan Avenue and Fourteenth Street.

The Weekly Mortality.—The deaths for the week ended August 19 numbered 577, an increase of 38 over the previous week and of 140 over the corresponding week of 1904. Acute intestinal diseases caused 145 deaths; violence, 69; consumption, 46; nephritis, 35; nervous diseases, 33; heart diseases, 31, and cancer, 26. Among the important causes of death showing decreases are apoplexy and heart diseases, each 6 less; bronchitis and sunstroke, each 3 less; acute intestinal diseases, 55 less, and pneumonia, 14 less. Among those showing an increase are Bright's disease, 5; consumption, 10; cancer, 4; nervous diseases, 16; whooping cough, 4.

IOWA.

Sanitarium Opened.—Maple View Sanitarium, West Union, has been opened recently under the management of Drs. Frank B. Whitmore and Allen G. Rennison. The sanitarium has accommodations for 12 patients and is the only hospital in Fayette County.

It Costs to Be an Itinerant.—The Dubuque city council has amended the present ordinance by fixing the license for traveling doctors at $5 a day straight. If the doctor carries a band or concert company $10 a day extra will be charged for the first day and $5 for each subsequent day.

Hospital Accepts Conditions.—The Council Bluffs Woman's Christian Association has accepted the gift of $40,000 offered by J. D. Edmundson, Des Moines, under the conditions that the new hospital should be known as the Jennie Edmundson Memorial Hospital, in memory of his deceased wife; that the association provide a site and secure an additional $10,000.

KENTUCKY.

Off for Europe.—Dr. John D. Maguire, Lexington, sailed for Europe, July 22.——Dr. Stephen Sharp, Jr., Covington, sailed for Europe, August 6.

Kentucky Graduates.—On July 12 a class of 48 was graduated from the Kentucky School of Medicine. Dr. William H. Wathen delivered the announcement, and John H. Leathers conferred the degrees.——Kentucky University Medical Department graduated a class of 58, June 30. Rev. E. L. Powell delivered the doctorate address and Dr. Joseph B. Marvin conferred the degrees.——Dr. James M. Bodine delivered the faculty valedictory at the graduating exercises of the University of Louisville Medical Department, June 29, when a class of 25 received diplomas from Hon. Theodore L. Burnett.——Hospital College of Medicine, Louisville, graduated a class of 89, July 3. Addresses were made by Dr. Thomas Hunt Stucky and Dr. J. H. Blanton.

Sues State Board.—Dr. Samuel J. Fryer, Louisville, has entered suit against the State Board of Health to compel that body by mandatory injunction to issue him a certificate to practice medicine. He claims that he graduated from the Hospital College of Medicine and applied to Dr. W. H. Wathen, the county referee, for a certificate in July, 1903, and presented his diploma. He made a second application in January, which was also refused. The plaintiff claims that he graduated before the law requiring examinations went into effect, though after it was passed. For this reason he contends that he should not be subjected to the examination. Another member of the same class, it is said, recently sued the board and received his certificate.

MARYLAND.

Money for Hospital.—Toward building the proposed Union Hospital of Cecil County at Elkton, $4,500 of the $5,000 required to secure an appropriation from the state, has been obtained.

Smallpox.—The outbreak of smallpox in Calvert County is said to be limited to three cases on Fishing Creek, near Pushaw Station, on the Chesapeake Beach Railroad, who are under the care of Dr. J. L. Brayshaw, Friendship.

Fail to Report Tuberculosis.—There is much complaint by the State Board of Health that physicians fail to report cases of tuberculosis. This is pretty general throughout the state, notwithstanding the law passed at the last legislature requiring reports, and affixing a penalty of $100 fine and not exceeding six months' imprisonment, one or both, in the discretion of the court, for its violation. Publicity in such cases is forbidden. The secretary of the board declares his intention of enforcing the observance of the law.

Baltimore.

Pharmacist Dies.—Charles Schmidt, associate professor of pharmacy, University of Maryland, died August 14 from typhoid fever. He was director of the laboratories of Messrs. Sharpe & Dohme.

Personal.—Dr. Henry M. Hurd of the Johns Hopkins Hospital has gone to the Adirondacks for the remainder of August. ——Dr. William Sidney Thayer has gone to Cape Breton for the remainder of the summer.——Dr. Gordon Wilson has gone to North Hatley, Canada, for some weeks.——Dr. William M. Dabney has gone to Portland.——Dr. William M. Welch is in Paris.——Drs. James Bosley, John B. Schwatka and J. D. Norris have gone to the Antlers, I. T., where they will spend three weeks in hunting big game.——Dr. George A. Fleming is at Bar Harbor, Maine.

NEW YORK.

Attempt to Bribe Inspector.—Dr. William S. Goodale, Buffalo, tenement house inspector, accuses an owner of a tenement house with having offered him a bribe of $25 provided that he failed to report violations of the tenement house ordinance.

Improving Nassau Hospital.—This institution, located at Mineola, L. I., will be provided with a children's ward, wet kitchen, dressing room and more private rooms by Mrs. W. K. Vanderbilt, Jr. The addition will be about as large as the present building, and the ground has already been broken.

Organize Medical Library Association.—Physicians of Jamestown have organized this association to maintain a library at the W. C. A. Hospital. Dr. Era M. Scofield was elected president; Dr. Jane L. Greeley, vice-president; Dr. John W. Nelson, secretary, and Dr. John H. Wiggins, treasurer.

New York City.

Personal.—Dr. Henry Belt was thrown from his carriage in an accident at Narragansett Pier, R. I., breaking his arm and sustaining several lesser injuries.

New Tuberculosis Camp at Coney Island.—The system of treatment which is being carried on is the same as that used at Sea Breeze House. This is a summer hospital for the treatment of surgical tuberculosis, and was opened under the direction of Dr. Napier. Twelve children suffering from various forms of bone tuberculosis are now being treated in the hospital, which is a tent on the grounds of the reception hospital.

Examine Subway Air Again.—A large assortment of samples of subway air has been collected from different portions of the subway and from the basements of department stores, factories, tenements, etc., which Dr. George A. Soper, consulting sanitarian of the Board of Health, is analyzing for the purpose of ascertaining the relative conditions of the atmosphere in these various localities. Dr. Soper will make a definite report in about two weeks.

Healer Fined and Jailed.—For swindling poor folk of the East Side, posing as a physician, "healer of the sick," Alfred Meyer, a former convict, was sentenced August 4 in the Court of Special Sessions to eleven months in the penitentiary on Blackwell's Island, and to pay a fine of $500 or to serve in prison one day for each dollar not paid. There were more than 500 complaints against Meyer, of which the chief probation officer said he had personally investigated 150 and found their stories true.

Fight Over Bellevue Bids.—An application to make permanent a temporary injunction granted by Justice Amend restraining the trustees of Bellevue Hospital from awarding the contracts for pavilions A and B of their new building was heard by Justice Dowling in the Supreme Court. The action was brought by a taxpayer, who sets up the claim that the work was awarded to one who had not made the lowest bid and also because it was not made at the regular time and place of meeting of the board of trustees.

Typhoid Fever Spreading.—This disease is spreading in both Manhattan and Brooklyn. From August 12 to August 18 148 cases were reported to the Health Department. Of the new cases 27 were in the Bath Beach district. The reports from this district have not been in the least exaggerated. Policemen have been stationed at the bathing houses in the neighborhoods of the outlets of sewers, to warn people away, as it seems almost certain that some of the cases are due to bathers carelessly swallowing water in this vicinity.

Bakers' Strike and Tuberculosis.—As a result of the strike among the Kosher bakers on the East Side the Board of Health has made an investigation and issued the following statement: "While tubercle bacilli may be present on the hands of the bakers and be mixed with the dough, yet they are almost certainly killed during the process of baking. This destruction is still further insured by the bread being in the moist state. It is remarkable that among 2,400 patients applying for treatment at the tuberculosis clinic of this department from March 1, 1904, to March 1, 1905, not a single one followed the baking trade."

Many Diseased Children.—The Health Department, under the direction of Dr. Biggs, just completed an important investigation into the health of some of the school children of this city. Out of 13,941 children in four primary schools, 6,294 required medical attention for some abnormal condition. They were all in poor quarters, but the worst quarters for disease were avoided in order that the results might be taken in general. The complete result is as follows:

Bad nutrition	1,092
Swelling in anterior glands	2,604
Swelling in posterior glands	706
Chorea (nervousness)	136
Cardiac disease	232
Pulmonary disease	204
Skin disease	227
Deformity of spine	118
Deformity of chest	162
Deformity of extremities	210
Defective vision	3,219
Defective hearing	460
Nasal breathing	1,623
Bad teeth	3,314
Deformity of the palate	196
Bad mentality	823
Requiring medical attention	6,294
Total number examined	13,941

Contagious Diseases.—For the week ended August 5 there were reported to the sanitary bureau 402 cases of tuberculosis, with 141 deaths; 223 cases of measles, with 8 deaths; 193 cases of diphtheria, with 21 deaths; 122 cases of typhoid fever, with 13 deaths; 47 cases of scarlet fever, with 1 death;

24 cases of cerebrospinal meningitis, with 12 deaths; 3 cases of smallpox, with 1 death, and 17 cases of varicella.——For the week ended August 12 there were reported 421 cases of tuberculosis, with 165 deaths; 254 cases of typhoid fever, with 26 deaths; 178 cases of measles, with 9 deaths; 177 cases of diphtheria, with 25 deaths; 26 cases of cerebrospinal meningitis, with 19 deaths; 37 cases of scarlet fever, and 12 cases of varicella.

OHIO.

Cincinnati University.—At the request of the medical directors of the City Hospital the Board of Public Service adopted a resolution that hereafter the professor of pathology of the Cincinnati University shall be the head of the pathologic department of the hospital. The directors stated that they had been made convinced of the fact that a professorship of pathology would soon be added to the university staff.

Personal.—Dr. George Fisher, formerly physical director of the Cincinnati Y. M. C. A., has resigned his position of physical director of the Brooklyn Y. M. C. A. in order to become one of the general secretaries of the national committee of the association. He is spending a few weeks in Cincinnati before going to California to strengthen the organization in that state.——Dr. Eugene S. May, Cincinnati, has been appointed local surgeon for the B. & O. S. W. R. R.——Dr. W. Burnett Weaver, chief surgeon of the Cincinnati Traction Company, has resigned, and sailed for Europe, August 16.——Dr. Clyde R. McKinniss, Marion, has been appointed to the staff of the Columbus State Hospital for the Insane.——Dr. Sterling B. Taylor, Columbus, was detailed as surgeon to Troop B, during camp, from July 30 to August 6.——Dr. Frank Winders, Columbus, secretary of the Ohio State Board of Medical Examination and Registration, has tendered his resignation, to take effect Jan. 1, 1906, on account of the increased duties consequent on his election as secretary of the Ohio State Medical Society and editor of the *Ohio State Medical Journal.*

PENNSYLVANIA.

Typhoid in Allegheny.—There are at present 76 cases of typhoid fever under treatment in hospitals in Allegheny. The number of cases not in hospital is estimated by the Pittsburg *Dispatch* at 1,520. Meanwhile the superintendent of the local health board is said to deny the presence of the disease in the city.

Personal.—Dr. William N. Stein, Shenandoah, sailed for Glasgow on the *Astoria,* August 5.——Capt. Louis P. McCormick, Connellsville, has been appointed major and surgeon, N. G. Pa., and assigned to the Tenth Infantry, and Dr. James F. Elder, Beaver, has been commissioned first lieutenant and assistant surgeon in the same command.

Typhoid Fever at Dundaff.—Dr. Dixon, state health commissioner, has detailed Dr. Fred C. Johnson, chief medical officer of the State Department of Health, to make an investigation into the cause of the typhoid fever epidemic at this place, and to institute measures to prevent its spread. Dr. George Fox of Philadelphia will assist Dr. Johnson with the work.

Philadelphia.

Personal.—Dr. C. Albert Bigler, Jr., sailed for Europe on the *Etruria,* August 19.——Dr. J. Howard Taylor, assistant medical inspector in the Bureau of Health, who was rather severely injured by a fall August 16, is rapidly recovering.——Dr. Richard F. Woods was severely burned by the explosion of the gasoline tank of his automobile August 13, but is now recovering from the injury sustained.——Dr. Alfred Stengel, chief of the medical staff of the University Hospital, is confined to that institution with an acute intestinal affection. He has not typhoid fever, as was first reported.

Food Commission's Busy Month.—Since the middle of July Dr. B. F. Warren, state food commissioner, and his assistants have arrested 112 dealers in this city, charged with adulterating food products. All have had a hearing and have been returned to court for trial. The cases only covered five products, namely, 20 milk cases, 19 for alleged adulteration of chocolate cake, 2 for candy, and 9 on the charge of selling adulterated preserves and jam. So far this month there have been 19 cases of alleged adulteration of cake, 1 candy, 5 preserves and 37 on the charge of selling adulterated soft drinks.

Health Report.—The total number of deaths reported for the week aggregated 438, the same as for last week. The deaths in the corresponding week of 1904 aggregated 420. The principal causes were: Typhoid fever, 11; whooping cough, 4; cerebrospinal meningitis, 2; tuberculosis, 42; cancer, 30; diabetes, 3; apoplexy, 22; heart disease, 30; acute respiratory disease, 16; enteritis (under 2 years), 73; enteritis (over 2 years), 13; Bright's disease, 35; railroad injuries, 6; marasmus, 11. There were 185 cases of contagious diseases reported, with 14 deaths, as compared with 152 cases and 19 deaths for the preceding week. There were 125 cases of typhoid fever reported, with 11 deaths, as compared with 109 cases and 14 deaths for the previous week. It will be noted therefore, that typhoid fever is on the increase, though the malady is of a mild type and the mortality relatively low.

GENERAL.

Personal.—Dr. Joseph Ford, United States Army, who has been stationed in Oklahoma, was operated on for appendicitis at the General Hospital at the Presidio, San Francisco. As soon as he has recovered he will go to the Philippines for duty.

May Have Cure for Leprosy.—A later report is given out concerning the cure for leprosy which physicians in the Philippines are said to have discovered. The report states that 25 patients have been treated; of these 6 are reported as being absolutely cured while the others have been benefited. No official statement is received.

American Electrotherapeutic Association to Meet.—The fifteenth annual meeting of this association will be held at the New York Academy of Medicine, New York City, September 19-21. The program includes papers on all branches of electrotherapeutics, including the treatment of cancer and other malignant growths, tuberculosis, syphilis, gonorrhea, etc., by various forms of electricity, radium and its therapeutics, manual therapy, mechanical vibration, etc. Authors of papers include Drs. Rockwell, Cleaves, Massey, Granger, Baer, Snow, Reyburn, Kassabian, Stover, Gibson, Lindsay, Curtis, Roberts, Herdman and Deeks. The secretary is Dr. Clarence Edward Skinner, 67 Grove Street, New Haven, Conn. The chairman of the committee on arrangements is Dr. Morris Weil Brinkmann, 54 West Ninetieth Street, New York.

Mortality on Shipboard Among Immigrants.—Dr. E. T. Chamberlain, chief of the Bureau of Navigation of the Department of Commerce and Labor, reports that during the past three fiscal years ended June 30, 1905, from the ports of Europe 1,932,934 steerage passengers embarked for New York, of whom 423 died on the voyage, or about 22 deaths per 100,000 passengers. Allowing twelve days for the average voyage, the rate is equivalent to an annual death rate of about six and one-half (6.56) per 1,000. The highest monthly rate for the three years was January, the month of smallest travel, 38 deaths out of 87,260 in the steerage; the lowest rate, also 38 deaths, out of 256,838 steerage passengers, was May, one of the months of heaviest steerage travel to New York. Among the immigrants from northern Europe there were 242 deaths out of 1,351,221 steerage passengers; among those from southern Europe 181 deaths out of 581,713. Of the steerage passengers 31,873 were babies under one year, and 116 more were born in the steerage, two mothers dying in childbirth; 126,993 were children over 1 and under 8 years, and 1,774,068 passengers were over 8 years. Under 8 years 211 died; over 8 years, 212. The census figures for 1900 give deaths under 9 years in the United States, so exact comparison is not practicable. In the steerage one and one-third died out of every 1,000 children under 8 years. Only one steerage passenger out of nearly 2,000,000 died on shipboard from accident, and only one from yellow fever. Twenty-three committed suicide and seven disappeared (suicide, accident or murder). The principal causes of death were: Heart failure, 75 (20 children); pneumonia, 64 (37 children); inflammation of bowels, 40 (all children but five); meningitis, 34 (14 children); convulsions, 28 (children); apoplexy, 17; alcoholism, 17; marasmus or weakness, 17 (13 children); tuberculosis, 16 (8 children); bronchitis, 15 (12 children); congestion, 10; 5 children died from scarlet fever and 5 from measles. The remaining 47 deaths were due to 27 miscellaneous diseases.

THE YELLOW FEVER SITUATION.

EXTENSION OF DISEASE—RELATIVELY LOW MORTALITY—SEPTEMBER FEARED—FUMIGATION DAY IN NEW ORLEANS.

Louisiana.

Reinspection and Repair of Screens.—Flying squadrons have been organized to reinspect and repair screens in New Orleans.

Arrested for Failure to Screen.—Hart Newman was arrested August 22 for failure to screen three cisterns at Athletic Park, a resort owned by him.

Personal.—Surgeon Thomas D. Berry, United States Public Health and Marine-Hospital Service, has recovered from his attack of the fever.——Dr. John T. Crebbin, New Orleans, contracted the fever and has been gravely ill.——Surgeon Joseph H. White, United States Public Health and Marine-Hospital Service, has been made an honorary colonel on the staff of Governor Blanchard.

Resigned Rather Than Quarantine.—At Bayou Gaul the health board resigned rather than institute the quarantine demanded by citizens.

Mail Fumigation Unnecessary.—Some towns asked that New Orleans mails be fumigated, but the postmaster, after consultation with Dr. White, in charge of affairs, decided it was unnecessary.

Must Not Ship Bananas.—Surgeon-General Wyman ordered that no banana cars be shipped north from New Orleans on account of inability to destroy the mosquitoes that they are very likely to transport.

Many persons in New Orleans, including President Charles Janvier, president of the citizens' yellow fever committee, have been fined for failure to screen cisterns, etc., in accordance with the new mosquito ordinance. The courts are vigorous in sustaining the measure.

Wanted Militia to Abate Quarantine.—Local quarantines became so annoying that the State Board of Health and the governor considered calling out the militia to enforce the moderation orders of the state board.

Cases Increasing, Mortality Lessening.—There are more new foci in the good part of New Orleans and more prominent people are suffering, but the mortality is steadily less—very small among those well cared for from the beginning.——Nearly all new cases are near the originally infected area.

Fumigation Day.—On Sunday, August 20, nearly 300 tons of sulphur was burned in the effort simultaneously to destroy mosquitoes in every house in the city.——Four or five tons of wire screens are daily shipped into New Orleans.

Good Work of Committees.—The volunteer ward committees of New Orleans, under the splendid leadership of Rev. Beverly Warner, have accomplished wonders. Every room has been inspected. On one day every gutter in the city was salted to kill vegetation and mosquitoes.

Comparative Mortality.—The figures show a decreasing mortality. Comparing as of date August 20, the cases and deaths of this epidemic and that of 1878 we find:

	1878.	1905.
Cases to August 20	1,355	1,397
Deaths	496	201
Percentage mortality	37.	14.

Quarantines Recoil.—Prolonged quarantines are proving costly to the small towns, both directly and indirectly.——When a suspected case occurred at Bon Ami, the town found that absolute non-intercourse quarantines having suspended train service, it could not receive the services of a fever expert whom it asked the State Board of Health to send.——A case at Lafayette on August 1 caused a turning of the tables, as the town, after having been most rigid in its quarantine, now found itself cut off by the neighboring places.

A Second Marine-Hospital Surgeon Attacked.—Dr. Maxine Landry, United States Public Health and Marine-Hospital Service, was reported, on August 22, to be ill with the fever.

Immune Nurse Dies.—An immune nurse who went through the Cuban experience died of a second attack.

Fever Spreads in New Orleans.—The fever has spread to the St. Louis Cathedral and the Court buildings.

Freight Held Up.—Freight for the Isthmus of Panama in enormous quantities is being delayed at New Orleans by the interference with shipping.

Fever in Jail.—An Italian ill with fever spent Sunday in jail and created a panic when brought into court on Monday of this week.

Train Inspection Extended.—Surgeon Young, United States Public Health and Marine-Hospital Service, has charge of the train inspection service running out of New Orleans, and has extended the service in thorough fashion as far north as Memphis, Tenn.

Detention Camps.—On August 17 Camp Wyman had seventy-five inmates and a waiting list of 243; Camp Slidell had twenty inmates and 107 waiting, and Camp Avondale seventy-five inmates with a waiting list of 235.

Cross Purposes.—At Lake Charles the board of health wishes to admit freight from New Orleans but the citizens and municipal officials have thus far prevented such action.

Panic and Scarcity of Food.—Panic exists in the small towns and in those along the Gulf coast there is a scarcity of provisions, due to the many obstructing quarantines.

Conditions Favorable for Spread.—United States Public Health and Marine Hospital Service recognizes that the conditions are favorable for continued spread of the disease, and feels that to restrict it within reasonable limits will be a great measure of success.

Penalty for Not Reporting Cases.—A few of the older physicians even yet are unwilling to report their fever cases. To these Surgeon White has announced that prosecutions are certain and that the penalty will be, not only a fine, but imprisonment.

Banana and Oyster Famine.—Bananas are becoming scarce in New Orleans because of the embargo on fruit steamers from the tropics. The available supply is said to be coming via Mobile, and there is fear that the shipments bring with them a good many stegomyias.——New Orleans is also threatened with scarcity of oysters.

The New Orleans Record.—In New Orleans for the week ending August 12, there were 54 deaths from yellow fever in 112 from all causes, nearly half the week's mortality. Exclusive of negroes, the death rate for the week was 24.80.

The New Orleans record for August 21, 1905, is as follows:

Total cases to date	1.458
Total deaths to date	210
Percentage mortality	14.4 per cent.

Sanitary Work Should be Continued.—Surgeon White, addressing the ward presidents of the volunteer sanitary, emphasizes the necessity of making the organization permanent and continuing the work until, at least, the disease ceases. He said that once a week a "mosquito killing day" would be necessary, and that once every seven days all gutters must be flushed. The cistern inspection must continue and must be thorough. Until screening is perfect, cisterns must be oiled, and with high-grade oil to avoid unpleasant consequences.

Arsenized Devotees Die.—It is reported that 12 of the recent deaths from yellow fever have been of adherents of the arsenic theory exploited by Dr. Leach. A formal letter was issued August 22 by Surgeon J. H. White, United States Public Health and Marine-Hospital Service, and by the president and advisory committee of the New Orleans Medical Society, telling how patients were under treatment who had partaken of the arsenic diet for the supposed sufficient period to render them immune. The letter was drawn forth by the announcement that there would be a mass-meeting of the arsenic adherents Wednesday or Thursday night to denounce the medical practitioners of New Orleans.

The Arsenization Idea.—Some difficulty has arisen from the notoriety attending the visit to New Orleans of Dr. Reginald B. Leach, a homeopathic physician of St. Paul, Minn., who holds that arsenization is a preventive of yellow fever infection. He has talked freely to the newspapers and has addressed public meetings of sympathizers. He announced that he came to New Orleans to give his theory a practical demonstration, by allowing himself to be bitten by an infected stegomyia. He refused to go on with the experiment unless it was conducted by the New Orleans Medical Society, which refused his request, not caring to countenance an experiment that might result in death and not having any active members who could well be spared from the active fight against the disease. Many physicians fear an epidemic of arsenical poisoning, the popular love for a "specific" having led hundreds, after reading Dr. Leach's newspaper interviews and articles, to eat arsenic. Belief in this extraordinary theory has led many citizens of New Orleans to ignore the orders of Dr. White and his assistants. The eaters of arsenic pills have neglected to clean up their premises and screen their cisterns. Orders were issued on August 18 for the instant arrest of all who have failed to obey the mosquito ordinance. The disciples of Dr. Leach held an indignation meeting at which the medical profession and the press were jointly denounced.

Outside Parishes.—Calcasieu Parish, which stopped through traffic on the Southern Pacific, has since ameliorated its restrictions.——Madison Parish barred out freight and drugs as well as passengers. However, a case of fever developed at Tallulah, in the parish.——Rapides Parish has ameliorated its quarantine.——The conditions in St. John and St. Charles Parishes are exceedingly bad, the houses of the poor being full of mosquitoes. Dr. Corput, M.H.S., is in charge and has his hands full. Many are so anxious to get away that crowds wait their turn to undergo the ten days required at the detention camps.——Jefferson Parish had five cases, all imported from the original New Orleans focus. No quarantine was established, but the cases were promptly and effectively isolated, while a campaign was waged against mosquitoes. The disease has disappeared from the parish, though there is daily mingling of the citizens with the people of New Orleans.

Other Towns.—Gueydan condemns panic quarantines.——Washington announces that it is a clean town, that mosquitoes are exterminated and trains are forbidden to enter the town.——Mansfield admits daily an engine and a mail car.——Baton Rouge has erected a yellow fever hospital, and is busy oiling and screening.——Sporadic cases have occurred at Diamond, Sarpy and Reserve plantation.——Patterson has had a number of cases.——Many cases have been discovered at the mouth of Bayou La Fourche.——Alexandria admits mail.——Algiers, a town of 20,000 population, just across the Mississippi from New Orleans, had a case of yellow fever late in July. The patient was properly screened and mosquitoes were killed. After the lapse of three weeks a house-to-house canvass showed that the disease had not spread.——No new cases have occurred at Shreveport and quarantine is relaxed.——La Place has a number of cases.——Allentown and Pleasant Hill are isolated.——On August 17 the situation near New Orleans was as follows: Diamond plantation, St. Charles parish, twenty-six cases, three deaths; Alexandria detention camp, three cases; Patterson, St. Mary parish, fifty-two cases, one death; Tallulah, Madison parish, three cases, one death; Pointe Celeste, Plaquemines parish, seven cases, one death; Lafayette, two cases; Rayne, two; La Place, twenty-one; Terre Haute plantation, four; Bucktown, one; Willswood plantation, five cases, two deaths; Empire plantation, one; Sunrise, Plaquemines Parish, one; Bayou Cook, one case, one death.——New cases were found on August 18, at Hanson City one, at Shrewsbury two, at McDonogesville one, at Pecan Grove five, as well as six new cases at Patterson, with one death.——The one victim at Alexandria died.——Ouachita has abandoned its shotgun quarantine.——Iberville called off its quarantine but an influx of refuges from infected Bayou Goul led citizens to demand the rigid quarantine, and in consequence the health board has resigned.——On August 21 Hanson City reported eight new cases, Kenna four, Iberville two, Corinne two, and Patterson ten.——Riverside reports, to August 18, forty--eight cases and three deaths.

Funds to Fight Fever.—Governor Blanchard has arranged with bankers to furnish $100,000 as the state's contribution to the New Orleans fund to fight the epidemic.——Three New York life insurance companies—the Mutual, the New York Life and the Equitable—have each been asked for $5,000 contributions.

Interparish Conference.—Lafayette was the scene on August 8 of a conference of officials from the parishes of Calcasieu, St. Landry, Acadia, Vermillion and Lafayette, at which a schedule of uniform quarantine regulations was adopted. This permits re-establishment of through passenger travel and provides five-day detention for those from New Orleans and other infected points, responsible inspectors, uniform certificates, and permits entrance of fumigated baggage.

During two days at Leeville there were found 69 positive cases of fever, 53 suspicious cases and 145 cases of dengue. There are about 300 houses and families there and not a single house but has one or more cases of sickness. The people are distracted. All seem to have lost ambition to work. They are completely demoralized. Two more deaths are reported there.——Patterson reports 15 new cases and no deaths. St. Tammany parish reports a case on the road between Mandeville and Lewisburg. Hanson City reports 6 new cases, Kenner 1 and Sarpy plantation 2. There was one death on Elizabeth plantation in Iberville. St. Rose, in St. Charles parish, has 2 cases and 1 is dead. Corinne plantation, in St. Bernard parish, reports one death. Mississippi City reports 3 new cases.

Other States.

Alabama.—Tuscaloosa is quarantined against all yellow fever points and enforces a two-weeks detention.——The Mobile quarantine against New Orleans is to last until December, unless earlier revoked.——Dr. John Guiteras of Havana, on August 15, addressed the citizens of Mobile on the subject of yellow fever.——The Jefferson County Medical Society at Birmingham, on August 14, decided by unanimous vote to ask for the raising of the quarantine against Montgomery.

Arkansas.—Having secured a state quarantine through the aid of the militia Dr. Cantrell asked local boards to withdraw their quarantines.——Texarkana reports a quarantine death, a quarantine guard having fatally shot a citizen running over the line.

Florida.—State health officer, Dr. Joseph Y. Porter, on August 14, extended the detention period for entry into the state from six to ten days.——The Hillsboro County Medical Society meeting at Tampa was addressed by Dr. John Guiteras of Havana and Dr. Porter, state health officer.——A few cases of dengue at Tampa caused a yellow fever scare.

Georgia.—Augusta has instituted an "absolute non-intercourse quarantine" against all infected places.——Columbus requires twenty days' detention before coming within five miles of the town.——The United States Public Health and Marine-Hospital Service has opened an office in Atlanta, in charge of Dr. Charles P. Wertenbaker, for the issue of health certificates.——Cordele requires twenty-one days' absence from an infected point before granting admission.——The mayor of Savannah has asked Surgeon-General Wyman to throw a cordon of soldiers around New Orleans, allowing no one to leave the city until after having undergone five days' detention under observation.——Atlanta was much displeased with a story in the New York Tribune of August 11 alleging there were at least a dozen concealed cases of yellow fever in that city.

Illinois.—Cairo and southern Illinois is now quarantined against the states of Louisiana and Mississippi, and all fever infected points in other states, and no passengers coming from either of those states or places will be admitted to Cairo unless they can show health certificates signed by a duly authorized and accredited board of health, showing that they have not been in the above-named sections within ten days. Furthermore, the city of Cairo is quarantined against the world, and no person can come into the city from any place unless they can show health certificates showing that they have not been in a fever infected district in ten days.——It was announced from Cairo on August 13 that Dr. Egan of the Illinois Board of Health and Dr. A. T. McCormack of the Kentucky board had arranged all differences regarding certificates and travel. However, on August 21, from the same place it was announced that Illinois would not receive certificates issued at Paducah, Bowling Green, Fulton or McCracken County, Ky., or at Bird's Point, Mo. No one can get into or through Cairo now without a satisfactory certificate of health.——Many refugees from Louisiana are in Chicago, Evanston and nearby places.

Indiana.—Dr. T. Victor Keene, city sanitarian of Indianapolis, has gone to New Orleans to study yellow fever.

Kansas and Missouri have a uniform quarantine.

Kentucky.—Two detention hospitals have just been erected by the railroads entering Louisville from the south, to be used to care for persons reaching the city who are sick. Louisville has opened her doors to yellow fever refugees, and Kentucky will not quarantine. Dr. John H. Ward has been appointed an assistant to the Health Office for the purpose of issuing health certificates to travelers who wish to go into districts which have quarantined against other points unless the individual has a certificate of health.——Dr. Vernon Robins, bacteriologist to the Health Department has hatched out several genuine stegomyia mosquitoes from larvæ obtained from a small pond at the station of the Louisville and Nashville railroad.

Maryland.—Baltimore reports the stegomyia present.

Mississippi.—Jackson does not permit through passengers to change cars at the city station nor to get off a train for lunch.——Box cars are not permitted to stop in the city, whether disinfected or not.——The members of the Italian colony have been notified that if they permit any friends from other cities to visit them the entire colony will be held ten days in detention camp and then "put on the rock pile or in jail."——Vicksburg has guards patrolling the river front to prevent persons landing from boats, the guards being under orders to shoot anyone disobeying orders not to approach the shore.——Natchez is *incommunicado* with the entire world, and Jefferson, nearby, refuses to admit citizens of Natchez. Shotguns on both sides enforce the order.——Governor Vardaman commended the citizens of various towns who refused admission to fumigated freight from New Orleans.——The governor and various health officials of the state have bitterly accused New Orleans and the Louisiana State Board of Health of bad faith, double-dealing and concealment of cases of yellow fever.——Tupelo bars out passengers and freight from infected points.——Sardis, Oxford, Brookhaven, Hazelhurst and Terry have quarantines.——Canton admits no one without a ten-day health certificate, and forbids relays of train crews on the Illinois Central Railway.——Tutweiler, Oakland, Greenville, Nesbit, West Point and Granada are quarantined.——Dr. John F. Hunter, Jackson, secretary of the State Board of Health, on August 8 courageously announced that he regarded "shotgun quarantine as wholly useless," and urged that where in force they should be abandoned. He advised the people to turn their attention from quarantines to sanitation and to extermination of mosquitoes.——On August 10 the Board of Health announced that there was not a case of yellow fever in the state.——On August 16, 11 cases of yellow fever were found at Mississippi City and 5 more on the succeeding day. It is said cases have been concealed there since July 20. In any event Governor Vardaman says no more about the perfidy of New Orleans, and now advises all Mississippi communities fully to co-operate with the efforts of the Marine-Hospital Service and to accept its certificates.——A new case occurred August 21 at Mississippi City.——Governor Vardaman has arranged with members of the Legislature for authority to borrow $50,000, or as much thereof as may be needed, to meet the necessities of the epidemic and has pledged himself to use the funds as economically as possible.——The suspicious case at Yazoo City was found by Dr. Wasdir, United States Public Health and Marine-Hospital Service, to be one of pernicious malarial fever.——Dr. Hicks, health officer of Vicksburg, on August 14 sent back to New Orleans a carload of sugar which had been partly unloaded before discovery. The board of health decided to prosecute the railroad for delivering the sugar.——There appears good reason to believe that the infection of Mississippi City did not come from New Orleans.

Missouri.—Three cases of yellow fever, with one death, were reported from Gregory, Mo., ten miles south of Keokuk, Iowa. The victims were Italians recently arrived from Greenwich, Miss. A spread of the disease in that section is not anticipated.——The St. Louis *Post-Dispatch* says: "Let us use the methods of science and civilization, not of ignorance and barbarism."——St. Louis will use a steamboat as a yellow fever hospital, if cases occur.

Six of the Italian laborers quarantined at Gregory have escaped.——The health board of Keokuk has issued orders prohibiting trains or steamboats stopping at Keokuk.

New York.—A laborer recently returned from Panama, who was isolated in the Norwegian Hospital, Brooklyn, and reported to be suffering from yellow fever, is now declared to be suffering from tropical malarial fever, and his recovery is despaired of.——Dr. A. H. Doty on August 15 removed from the Mallory Line steamer *Concho*, from Galveston, ten persons having temperature above normal, and kept them under observation as suspects.

Oklahoma.—Guthrie decided not to quarantine, the mayor announcing his full acceptance of the results of the late Dr. Reed's work in Cuba.

Pennsylvania.—The Pennsylvania State Quarantine Board at its meeting at Marcus Hook on August 8, decided to establish quarantine against all ports south of St. Mary's, Ga., which includes all ports on coast and gulf from which an invasion of yellow fever is to be feared. It is considered that with the precautions taken at Marcus Hook, Philadelphia stands in no immediate danger of a visitation of the fever.

South Carolina.—Charleston fumigates cars, detains vessels from Central America, and requires five days' detention of persons from infected points.——The Board of Health of Columbia decided that quarantine was unnecessary.

Tennessee.—The Memphis and Shelby County Medical Society approved the quarantine as being demanded by the commercial bodies, but expressed its conviction that the disease is spread by mosquitoes.——Memphis permits through passengers to step from one train to another, but no more.——The Chattanooga quarantine is rigid and has been accompanied by various spectacular procedures. Through cars from Louisiana must have doors and windows closed and locked while passing through the city. Laundry operations have been restricted by fear of the workers getting yellow fever from Pullman car bed linen. One traveler said: "Knowing as we all do, that yellow fever is not even contagious without the mosquito inoculation, it is needless to say that Chattanooga is worth a visit just to see the fun." Another traveler wrote: "They were whirled at speed through Mississippi and Tennessee towns; there was no buffet or diner, and ice and water alike gave out. Neither conductor nor porter were permitted to leave the car at any station, and women and children were made to suffer 'sweatbox' punishment from closed sashes. In a high temperature this was often prolonged by switching off the sleeper and 'isolating' it a mile or so away, awaiting some through train to whirl the infected monster to the next insane town."—Memphis has had its quarantine troubles, and has finally ameliorated its conditions. One man secured a court injunction suspending the quarantine so far as his family was concerned.——Many trains have been annulled until travel is resumed.——It is alleged that politics played its part in the quarantine, the Board of Health being shorn of power, which was transferred to the chief of police.——Knoxville inspects all trains.——Brownsville keeps out everyone who has not a certificate from its county board of health.——Moscow ordained "that it shall be unlawful for any person to enter the corporate limits during the prevalence of yellow fever in the South."—It is said that the stegomyia abounds in Knoxville.——The Tennessee Legislature at its last session provided only a reduced epidemic fund of $5,000. Request has therefore been made of Surgeon-General Wyman to conduct train inspections with the corps of the United States Public Health and Marine-Hospital Service.——The Tennessee health authorities are endeavoring to arrange with Surgeon Young, United States Public Health and Marine-Hospital Service, and with the authorities of Mississippi and Arkansas for uniform certificates of health.——Memphis continues to kill mosquitoes and oil stagnant water.——Memphis has decided to permit passengers to transfer through the city, a detention car to be provided.

Texas.—Houston has a new mosquito ordinance, and oil has been supplied for pools, swamps, cisterns, etc.——Somerville is cleaning up and killing mosquitoes.——Jasper has a rigid quarantine.——It is proposed to inspect trains entering Texas from Indian Territory, to exclude refugees coming in by the roundabout way.——*The Texas State Journal of Medicine* scores those physicians who, disbelieving in the mosquito hypothesis, publish their dissent in the newspapers. It well says that such expressions are "pernicious, contrary to demonstrated facts, calculated to lessen medical influence, disturb public confidence, threaten commerce, and endanger human life."——As a matter of precaution the annual encampment of the Texas National Guard will not occur this year.——The Texas Legislature provided no funds to fight disease and forbade the issuing of emergency certificates. The State Health Officer may therefore be compelled to accept public subscriptions in order to meet necessary expenses.

Virginia.—A strict quarantine against yellow fever was arranged for by the State Board of Health August 14. Correspondence from the Norfolk Board of Health was read setting forth the necessity of state action and the board determined on a vigorous method which is practically a quarantine against the infected districts. Inspectors will meet all trains at the state line and detain any suspected cases. Boats from the south will be subject to strict examination and quarantine regulations by the Norfolk authorities.

General and Foreign.

Cases to Date.—Up to the evening of August 20, 1,641 cases had been reported, with 221 deaths from 322 sub-foci of infection. On August 20, 61 new cases were reported in New Orleans and 21 outside of the city, making a total of 82, from 16 new sub-foci of infection, and 9 deaths.

Epidemic in Honduras.—It is reported that yellow fever is practically epidemic in Honduras, and that the disease appeared there simultaneously with the outbreak in New Orleans in May. It is believed that the disease was conveyed to Honduras by Italian freight handlers on the fruit steamers plying between there and New Orleans.

Panama.—Goverorn Magoon is supporting extraordinary efforts to perfect the proper sanitation of the Isthmus. Laborers have been withdrawn from other tasks for this purpose, and every effort is being made to assure sanitary camps, to get a good water supply into Panama, to erect hospitals, to fill in swamps and to cut down the underbrush about Colon and all the camps.

Record to August 23.—New cases outside New Orleans, August 22, 69; new deaths, 3; new cases in New Orleans, 57; new deaths, 9; new sub-foci, 21. In all 1,598 cases have been reported, with 230 deaths, a death rate of 14.4 per cent.

FOREIGN.

The Chair of Surgery in Leeds University.—Mr. Edward Ward, who has held the professorship of surgery in Leeds for the past six years, has resigned. He is to be succeeded by Mr. Harry Littlewood, M.Sc., F.R.C.S.

Cholera in Russia.—A dispatch from Europe states that cholera is still raging in several provinces on the left bank of the Vistula. The report states that the Russian censor has forbidden the publication of any details of the epidemic. Until now the frontier districts have not been affected.

International Congress of Hydrology.—The seventh meeting of the International Congress of Hydrology, Climatology, Geology and Physical Therapeutics will be held in Venice, Oct. 10, 1905. The general secretary is Dr. Fausto Orellice, S. Stefano 2803, to whom all communications should be addressed.

International Exhibition in New Zealand.—The government of New Zealand, it is reported, has decided to hold an international exhibition at Canterbury from November, 1906, to April, 1907. One of the principal objects of the exhibition will be to demonstrate the resources of New Zealand as a food-producing country.

Summer Diarrhea Among Children in London.—A cable report from London, dated August 19, states that every hospital for children is full and that cases of summer diarrhea are being turned away because of lack of accommodation. There is reported to be a greatly increased mortality from this disease among children under 2 years of age.

The Plague Mortality.—It is reported that the plague epidemic has perceptibly declined. The Central Provinces, Central India and Rajputana are said to be free from the disease, but this is probably doubtful. The officers investigating the disease will remain in India till October. They are now engaged in research work in Bombay.

New Public Mortuary in Hong Kong.—The new public mortuary, which was completed in the early part of the year, is equipped so that the most varied pathologic research can be undertaken. The institution includes one research laboratory for the examination of rats and other animals, two large mortuaries, and two small laboratories for research work.

Epidemic of Sore Throat in London.—It is reported that hundreds of cases of sore throat have occurred in London. The disease is said to be slightly contagious. The first symptoms are slight hardness in the throat, which by morning has developed into a stinging pain. In some cases the Eustachian tube seems to be involved as a few patients complain of partial deafness.

Swimming in the Glasgow Public Schools.—For some time the Glasgow school board has given lessons in swimming in the public schools, and it is stated that these are much appreciated. Over 90 per cent. of the boys, receiving two lessons a week, were able to swim well after eight weeks, and about 50 per cent. of those receiving one lesson a week were fairly proficient in the same time.

Malaria in Italy.—The prophylactic administration of quinin is the distinctive feature of the campaign against malaria now being pushed into the Roman Campagna, under the auspices of the Italian Red Cross Society. During the month of June it is reported that 8,021 persons were given quinin in preventive doses. There were 168 cases of malaria in the section under observation, all of which occurred among persons who refused prophylaxis or were negligent in pursuing treatment.

Pure Milk Depots in England.—In an effort to check infant mortality the municipality of Leeds has decided to establish pure milk depots where the poor can obtain clean milk. The lord mayor has started a fund for this purpose with a subscription of $1,000. A committee has been appointed, composed of medical men, and the chairman in a letter asking for subscription refers to what has been done in America in this way. The committee intends purchasing milk from farmers whose cows are free from tuberculosis. It is intended that the cows shall be milked and the milk cooled and bottled under the immediate supervision of the employés or officials of the committee.

London Coroner Advocates Day Nurseries.—Dr. Waldo, the coroner for the city of London, is quoted as saying that the high death rate among infants and young children is largely due to ignorance and to involuntary neglect. Many women who are employed during the day leave their children to be looked after by neighbors, with the result that the children are often fed milk tainted with germs from the dust and refuse in the streets. The ignorance of mothers as to the proper way of caring for a baby or of feeding it, Dr. Waldo thinks, is also a cause of the high death rate. He states that he is in favor of the establishment of crèches near all large factories and workshops, where mothers can leave children in the care of a competent attendant and have them looked after properly on payment of a small fee.

An Antimalarial League in Greece.—An antimalarial league has recently been founded in Athens under the patronage of the king. The objects of the league are to disseminate knowledge concerning the results of modern malarial research among the people; to study the distribution of malaria and its special characteristics in the various districts; to draw up maps showing the marshes in each department; to remove pools in the neighborhood of houses; to investigate the means of drying up or of purifying the marshes; the destruction of mosquitoes; the introduction of mechanical means of protection of houses, etc.; the gratuitous supply of quinin, and the drafting of a bill providing for the carrying out of these objects and its presentation to the government. Professor Hadzimichalis, president of the Superior Health Council, is president of the league.

The Mission to Lepers in the East.—During the thirty years of its existence this mission has received about $850,000. Its first asylum was built in 1875 and it has now 42 asylums of its own while it aids 16 others. It has 20 homes for the untainted children of leper parents. This separation of healthy children, says the *British Medical Journal*, is one of the most important branches of the society's work in the struggle against leprosy. In addition to India, the society is active in various centers of Burmah, Ceylon, China, Japan and Sumatra. Several asylums in India have been transferred to its care, showing that the endeavors of the mission to lepers are appreciated on the spot, so much so that it receives considerable aid from the government. The medical side of the work is kept well in view. In many places fully qualified men are in charge of the asylums; in others there are hospital assistants, or helpers, with some medical knowledge. In the East there is no doubt that western medical influence is called on to play a preponderating part in the advancement of civilization.

Longer Period of Study for Indian Medical Students.—It was proposed to increase the period of study in the Calcutta Medical School from five to six years, but after the subject was thoroughly discussed it was decided to make no change, as a certain number of native medical men, supported by a limited portion of the native press, advised students to go to Japan and study rather than to Europe or Calcutta. One reason given for this advice is the reputed cheapness of study and of living in Japan, while at the same time it is argued that the education is equally good. It is forgotten, says the *Lancet*, that students who do not possess qualifications recognized by the government naturally have to shift for themselves as best they can in various forms of private practice. That a certain section of the native press should support such a proposal is not altogether astonishing and it is taken advantage of to attempt a sort of rebuff to British and European medical pretensions. In fact, the proposal was very inadequately considered on its merits and was chiefly made use of as a political move. The *Lancet* considers it very poor patriotism on the part of the Bengali "nation" to sacrifice its medical students for the sake of a very doubtful political snub.

Leprosy in China.—The Public Health and Marine-Hospital Service calls attention to a medical report, by Dr. Georges Brarbezieux, in the publication of the Chinese Imperial Customs, in which is described a remarkable focus of leprosy existing in Yunnan, the most southwest province of China. The report states that the number of lepers is very great and that they wander in the fields and about the streets of towns, frequenting abandoned pagodas and presenting the horrible stigmata of the disease. There are in Yunnan entire villages of lepers where the inhabitants live miserably on the products of rice fields. These persons have slight relations with the outside world, though they are free from the restraint of sanitary regulations and are not by any means ostracized. Nevertheless, they seclude themselves from the society of healthy persons, mingle with lepers only, and do not visit other villages except when the gravity of their disease renders labor impossible. When broken down physically by the progress of the disease they join themselves to more prosperous and healthy communities, and thus swell the immense army that lives in such places by public charity. With the advent of white men in Yunnan the number of leprous beggars has notably increased. It is estimated that in Yunnan there is one leper for every 100 inhabitants, but the concentration in certain parts of the country is still greater than the general figures indicate. There are no institutions, public or private, for the care of these unfortunates, and the disease is not considered to be more than very slightly, if at all, contagious.

LONDON LETTER.

Goats and Malta Fever.

An important discovery seems to have been made with regard to the propagation of Malta fever. About twelve months ago a commission was appointed by the admiralty, the war office and the civil government of Malta for the purpose of inquiring into the prevalence of Malta or Mediterranean fever among the naval and military forces and the general population of Malta. The commission originated in a letter sent by the colonial secretary to the Royal Society in which he drew attention to the prevalence of the fever and invited the society to nominate a commission of investigation. This was done, and Colonel Bruce of the army medical department (who in 1887 discovered the microbe of Malta fever, the *Micrococcus melitensis*), was appointed chairman. For some time the committee has been engaged in pathologic investigations of an extended character. A series of epidemologic inquiries were conducted in the Maltese Islands by Dr. R. W. Johnstone, one of the medical inspectors of the local government board. Then attention was directed to the milk supply. In Malta the usual source of milk is the goat, flocks of which are driven about the streets to be milked at customers' doors. Two members of the commission, Dr. Zammit and Major Horrocks, have determined experimentally that goats are susceptible to Malta fever. Hence they infer that the disease may be spread to man by the medium of milk. Numerous tests showed that some of the goats in every herd examined were suffering from Malta fever, and that the micrococcus is excreted in the milk in enormous numbers when the disease has existed long enough to bring about a change in the physical character of the fluid.

The King's Hospital Fund: Permanent Income of $250,000 Secured.

The King's Hospital Fund was founded in 1897 by his majesty when Prince of Wales, who saw in the scheme a striking way of commemorating the sixtieth year of the reign of the late queen. In the first eleven months of its existence $1,100,000 was paid into the fund, and this has been increased each year until at the end of 1903 the total amounted to $5,500,000. The awards paid to the various London hospitals have amounted to $2,500,000, and more than $3,300,000 has been invested. As the result of some recent gifts and bequests the fund has now reached such a capital amount that a permanent income of $250,000 is secured—the object at which the trustees have been aiming for some time. All the hospitals within a radius of seven miles from Charing Cross or within the area of London County Council are entitled to share in the benefits of the fund, which since its foundation has been instrumental in opening no fewer than 443 free beds.

The Government and Industrial Mercurial Poisoning.

The government has issued a memorandum reminding medical practitioners that they must notify the chief inspector of factories of every case of mercurial poisoning contracted in a factory or workshop. Proper notification forms for this, as also for anthrax, for poisoning by lead, phosphorus or arsenic are supplied. Factory surgeons are obliged to investigate and to report on all cases of mercurial poisoning brought to their knowledge, and in certifying children and young persons for employment in industries in which mercury is used they are reminded of the undesirability of young persons being employed in mercurial processes, not because they are more susceptible to the poison, but because of their probable inattention to the necessary precautions. Fifty-six cases of mercurial poisoning were reported between May, 1899, and Dec. 31, 1904. They occurred in the following industries: Manufacture of thermometers, 15; electric meters, 15; hatters, furriers, 10; chemical works, 7; water gilding, 5; powder factories, 3; photoengraving, 1. Factory surgeons have power at their periodical medical examinations to suspend not only workers showing signs of poisoning, but those who, by inferior physique, indulgence in alcohol, careless habits and want of attention to the regulations, show a liability to mercurial intoxication.

The Quatercentenary of the Royal College of Surgeons of Edinburgh.

With fitting pomp the Royal College of Surgeons of Edinburgh has celebrated its quatercentenary. The celebration began by a service in St. Gile's Cathedral, which was attended by a large and brilliant gathering. The honorary fellows-elect, who included distinguished surgeons from all parts of the world, among whom were the American professors Halsted, Keen and Howard Kelly, the fellows and a representative company of guests marched in procession to the cathedral. The commemoration ceremony was held in the afternoon and was attended by representatives of other colleges, of various universities and of learned bodies. Sir Patrick Heron Watson, the president, delivered a short address of welcome in which he sketched the history of the college. Its origin as a corporate body may be traced to the reign of James IV of Scotland, who in 1506 confirmed the royal charter which a year previously had been granted to the barber-surgeons resident within the borough of Edinburgh by the provost, bailies and council of the borough. There is reason to suppose, however, that previously an organized body of practitioners existed to whose desire for authority to practice the college is indebted for its inception. The honorary fellowship was then conferred on a number of distinguished foreign and British surgeons. A banquet was held at which 350 were present. The president was accompanied by the lord provost of Edinburgh, the French ambassador and other prominent officials and distinguished guests.

"Costly Medical Errors."

Under this and similar titles the lay press waxes very indignant at errors in diagnosis made by physicians who have sent patients to the London fever hospitals. It appears that during 1904, 21,000 cases of scarlatina and 538 cases of smallpox were admitted to these hospitals, and that also nearly 2,000 cases of mistaken diagnosis occurred. The average period of detention in these latter cases was a little over three weeks and the expenditure represented $60,000. The chairman of the statistical committee of the hospitals said that this expenditure ought never to have been incurred and that these patients should never have been sent to hospitals. How infallibility of diagnosis is to be secured he did not explain.

The Proposed Amalgamation of the London Medical Societies.

The executive committee of representatives of the London medical societies, appointed to consider a scheme of amalgamation, as mentioned in The Journal, May 6, 1905, page 1461, has presented a report. The committee appointed chartered accountants to investigate the rolls of membership and the accounts of the principal 22 London societies. These were found to have a membership of 7,229, composed of 4,997 persons. Of these 3,725 are members of only one society and the remaining 1,272 are members of more than one society. The balance of assets over liabilities (including certain bequests and trust funds) is more than $200,000. If 3,800 members of societies other than the Royal Medical and Chirurgical Society become members at a subscription of $5 per annum the new society will have a small balance of income over expenditure. If any members of these societies become fellows at a subscription of $15 the balance will be increased. This estimate is based on the present income and expenditure of the Royal Medical and Chirurgical Society and the income and expenditure of 17 other societies, and makes no allowance for any economics which may be effected by the union. The present income of the Royal Medical and Chirurgical Society is $25,000; its expenditure is $21,500. In view of the facts that 3,525 persons already subscribe $5 each to the other societies and that 1,272 pay from $10 upward, it is thought that the new society will have a sufficient balance of income over expenditure to provide for improvements and for any sinking fund rendered necessary by extensions of the premises of the Royal Medical and Chirurgical Society. The committee made the following suggestions: 1. The new society shall be called the Royal Society of Medicine, or the Royal Academy of Medicine, according to the vote of the societies concerned. 2. It shall be housed at 20 Hanover Square, the present premises of the Royal Medical and Chirurgical Society. Increased accommodation can be obtained by extending the premises and by the absorption of certain rooms now occupied by tenants. 3. The society shall meet four or more times annually to discuss subjects of medical and scientific interest. 4. The society shall consist of the following sections, with power to add new sections or to modify the existing ones: 1, Anesthetic; 2, clinical; 3, dermatologic; 4, diseases of children; 5, epidemiologic; 6 laryngologic, otologic and rhinologic; 7, medical; 8, mental medicine (psychiatry); 9, neurologic; 10, obstetric and gynecologic; 11, odontologic; 12, ophthalmologic; 13, pathologic; 14, state medicine; 15, surgical; 16, therapeutic, including general therapeutics, pharmacology, electrotherapeutics, balneology and climatology. It is hoped that in the early future an anatomic and physiologic section will be formed. 5. The society shall consist of fellows, members, honorary fellows and honorary members. The fellowship shall be restricted to those practitioners whose scientific attainments are satisfactory to the general council. 7. A fellow shall pay annually $15 and shall have the right to attend all meetings of the society or any of its sections, and shall have the full use of the library. 8. Each section shall have power to elect as members of the society such persons as the council of the section shall think fit, provided that the names be previously submitted to the council of the society for approval. 9. A member of any particular section shall pay annually $5 and shall have the right to attend all the meetings of his section, but must pay an additional $1 annually if he wishes to use the library, and a further subscription of $2.50 for each additional section. 10. The general management of the society shall be under the control of a general council consisting of the president, the presidents of the various sections, two treasurers, two librarians, two secretaries and eight other fellows. 11. A monthly publication shall be issued except in the months of July, August and September, and be called "The Proceedings of the Royal Society of Medicine." It will be under the control of an editorial committee and will contain a record of the work of each section during the previous month. In addition the committee will select, subject to the approval of the general council, such papers as they may consider worthy of publication in the transactions of the society. The committee further suggested that it would be an advantage to form a committee of representatives of the various sections to receive all papers to be read. This committee would have power to decide before which section a paper should be read and whether other sections of the society be asked to join in the discussion. The committee concludes that the union of the medical societies will do much to enhance the prestige of British medicine and to increase the value of the work carried on by the existing societies, and that it will be a great convenience to the profession.

The Increase of Suicide.

At the Medicolegal Society Dr. Wynn Westcott, coroner for Northeast London, read an important paper on suicide. He found that inquest juries bring in only about 1 per cent. of suicides as guilty of *felo de se;* in cases where there is no evidence of the mental condition of the person they attribute the act to temporary insanity. He said that patients are often prematurely discharged from asylums and in the exigencies of home life slay themselves. Of predisposing causes alcoholism is the most common, then the presence of disease. An additional grievance or an overmastering passion, he stated, is usually the proximate cause. The relation of the sexes is very constant—three men to one woman. The rate of suicide per million of the population is constantly increasing; thus in 1861 it was 66; in 1881, 77; in 1891, 85; in 1901, 96, and in 1903, 105.

Correspondence

The Yellow Fever Epidemic.

NATCHEZ, MISS., Aug. 15, 1905.

To the Editor:—In THE JOURNAL, August 12, you did a palpable injustice to some of the best people in the South when you refer to the quarantines as relics of the middle ages. Please let me call your attention to the report of the president of the Louisiana State Board of Health, in which he admits that he was aware of the existence of the fever on the 13th, but waited eight days before admitting it, thus allowing the people from the infected area time to scatter all over the states of Alabama, Mississippi and Louisiana. It is this continued failure to keep faith with the people that has forced the present harsh measures. We know that non-intercourse with infected areas will prevent the introduction of the disease into the healthy towns, and propose to follow up the plan that has proved safe in other times. We have had two small epidemics here; in both cases the infection was brought here when there were no reported cases in New Orleans. We lost some of our best people each time, and the fever spread in spite of every known method of checking its progress.

I have had considerable experience in the treatment of the fever though not an immune, and I may tell you that I am unable to prevent the mosquitoes biting either myself or the patients. My own house is screened throughout with the finest of wire screens, and each bed has the very best mosquito netting, yet in spite of all these precautions we have to endure the annoyance and stings of these pests. All southern people know these things, and for this reason they seriously doubt the possibility of checking the spread of the infection by means of screens. They know the practical impossibility of preventing the patient being bitten.

As to the quarantines: We do not enjoy them at all ourselves. They almost destroy trade and prevent business of all kinds. But we can not help ourselves. We do not know where the infection has spread, so a policy of exclusion is being practiced. We harm no one; simply say to them, "For the present please stay at home." If you will come here and visit us, and let us show you our death records, we are sure that you would favor anything that gave promise of safety from this pestilence.

It may be that some reporter allowed his imagiantion to run away with his regard for the truth, and to that report you referred. But to my mind, the people have acted with great forbearance, considering the vast amount they had at stake. We do all in our power to render the six days' detention as pleasant as possible to all concerned. But this city is certainly closed to the world for the present. If it were not so, persons leaving New Orleans could go direct to Chicago, procure a health certificate, and be here in less than three days.

I trust that you will publish this little note, and you can refer to the issue of THE JOURNAL for August 12 for the report of Dr. Souchon to which reference is made.

J. C. BALLARD, M.D.

An Indorsement of Governor Pennypacker by Philippine Islands Medical Association.

MANILA, P. I., July 12, 1905.

To the Editor:—By direction of the Committee on Public Policy and Legislation of the Philippine Islands Medical Association, I have the honor to forward a copy of a resolution tendering a vote of thanks to Governor Pennypacker of Pennsylvania for the service which he has rendered the medical profession of the world and the people of his state in withholding his signature from the bill passed by the legislature to legalize and regulate the practice of osteopathy in Pennsylvania.

Governor Pennypacker has evidently given the subject of class legislation more study than is usually bestowed on it by chief executives, as is shown by his clear understanding of those principles of ethics and justice for which the medical profession has always stood.

He could have rendered his people no greater service than that which has been accomplished by his veto which may truly be called "A veto for the protection of the people of Pennsylvania from the evils of legalized quackery."

Very respectfully,

R. E. L. NEWBERNE.

Secretary-Treasurer, Philippine Islands Medical Association.

RESOLUTIONS.

WHEREAS, It having come to the knowledge of the Committee on Public Policy and Legislation of the Philippine Islands Medical Association, through the editorial pages of THE JOURNAL of the American Medical Association, that Governor Pennypacker of Pennsylvania has vetoed the bill passed by the legislature to legalize and regulate the practice of osteopathy in that state; and

WHEREAS, The reasons given by the governor for his course are so manifestly just and fair, it was, on motion,

Resolved, That the Committee on Public Policy and Legislation of the Philippine Islands Medical Association tender a vote of thanks to the governor of the commonwealth of Pennsylvania for the careful study which he has given this objectionable bill, and for the just, courageous and scholarly stand which he has taken in the interest of science and justice, and for the protection of the people against the evils of class legislation. It was further

Resolved, That the secretary of the committee be instructed to forward copies of the resolution of the committee to Governor Pennypacker and to THE JOURNAL of the American Medical Association.

Finsen's Light Institute.

COPENHAGEN, July 11, 1905.

To the Editor:—After a week spent at Finsen's Light Institute I have begun to realize the magnitude and extent of the work performed here. Each day from 150 to 200 patients receive treatment, among whom one can recognize types from all civilized nations. The institute itself is situated in a quiet part of Copenhagen, the streets leading thereto being amply provided with shade trees which produce a pleasing and restful effect as one approaches the buildings. The institute physicians, four in number, are well trained and courteous. The government annually subscribes 30,000 kroner toward the maintenance of the institution. This, together with the Nobel prize money which Finsen munificently tendered the institute, has rendered possible its present complete organization.

All who seek treatment obtain it. Those who can afford to pay do so, and those who can not afford to pay receive treatment gratis. A school is also maintained for the children who are compelled to undergo treatment for a long time. Much compassion is shown the poor unfortunates who come disfigured with disease, and they are treated most kindly by physicians and nurses alike. From 8 to 11 a. m. every day the physicians are at work in their large, well-lighted clinic room, examining new patients and treating by topical applications and the galvanic cautery such lesions of the nasal and oval cavities as are inaccessible to the lamp treatment. In this room the doctors indicate with pencil by marking circles around the various lesions which are to be exposed to the chemical light rays that day. Thus is the progress of each patient watched and directed daily.

From the clinic the patient is conducted to the laboratory for light treatment. Here are eight large 50-ampere arc lamps, each lamp being equipped with four projectors containing lenses and cooling devices to accommodate four patients. Thus 32 patients can be treated at one time, each patient being under the immediate care of a separate nurse who applies the light. Several other lamps are placed in smaller rooms where more privacy is obtained. The current supplied by the city is 500 volts direct. This being too high for safety, is used to actuate a motor which in turn drives a dynamo that delivers a 70-volt direct current. This current supplies the energy for all the apparatus.

With the patient placed on the table, the area which has been pencil-marked by the physician is brought to focus under the light, and with a compressor lens over the lesion, is exposed for one hour and ten minutes. In twenty-four hours a strong reaction is visible where the light has acted, vesicles form which take from six to ten days to heal up. If this exposure has not been sufficiently strong to destroy the active lesion another is given, and so on, one treatment every eight or ten days until the disease is vanquished. If the disease is extensive different regions are exposed daily.

The conditions which yield best to the light treatment are lupus vulgaris and erythematosis, acne, small non-elevated angiomata or port-wine marks, and very superficial epithelioma. For these diseases and conditions the chemical light treatment as carried out here is as near specific as anything medical or surgical can be within the meaning of that word. For ordinary or deep-seated epithelioma the Roentgen rays are used. For this purpose a 20-inch Rumkorff induction coil is provided, with mercury turbine interruptor on the 70-volt direct current. Twenty-minute exposures are made and repeated when reaction permits. Patients suffering from lupus erythematosis are given in addition to light treatment from 20 to 30 centigrams of quinin daily.

The results obtained here can be ascribed to efficient apparatus, and, more important yet, correct technic and patience. The rooms of the institute are open to the physicians of the world, who can see for themselves and judge; nothing is kept hidden. The management of Finsen's Institute desire to have it known that they have no connection whatsoever with a so-called Finsen Institute of America, located, I believe, in Chicago and widely advertised in the daily press.

Albert Soiland, M.D. (Los Angeles).

Marriages

William G. Doern, M.D., to Miss Reeves, both of Fort Madison, Iowa, August 15.

Walter F. McCabe, M.D., to Miss Anna M. Moe, both of Beloit, Wis., August 12.

Thomas Garton Kell, M.D., Pineville, N. C., to Miss Marie Laura Delmas of Pascagoula, Miss., August 9.

Reginald M. Burdon, M.D., Green Bay, Wis., to Miss Louise Lange of Houghton, Mich., August 16.

Louis F. Baker, M.D., to Mrs. Nellie S. Appleby, both of Fitchburg, Mass., in New York City, August 11.

David James Graham, M.D., Edinburgh, Scotland, to Miss Ethyl Gray of San Francisco, in New York City, August 9.

George J. Koch, M.D., to Miss Josephine Fitzmaurice, August 9.

Francis E. King, M.D., to Miss Mary Owens Randall, at Baltimore, August 14.

Treston R. Ayars, M.D., to Mrs. Fannie Hamilton Shedd, both of St. Louis, August 16.

Charles L. Large, M.D., Forest Grove, Ore., to Miss Edna L. Hicks of Fairmount, Minn.

Deacon Steinmetz, M.D., to Mrs. Ellen Fagan Crosby, both of Philadelphia, August 14.

Frank Dyer Sanger, M.D., Baltimore, to Miss Grace Hamilton Hague Cochran, August 9.

George H. Ehrhorn, M.D., Tea, S. D., to Mrs. Florrie B. Dales, at Anniston, Ala., August 3.

Robert Lee Schorr, M.D., to Miss Mabell Stanley Leonard, both of Detroit, Mich., August 23.

Harry C. Parker, M.D., Boston, to Miss Clara Margaret Parker of La Grange, Ill., August 16.

William C. Arons, M.D., Hudson, Wis., to Miss Mary C. MacMurdy of Aitkin, Minn., August 4.

George M. Livingston, M.D., Manistique, Mich., to Miss Mabel A. Joy of Albion, Mich., June 28.

Marcus Harold Merchant, M.D., to Miss Alice Louise Gardner, both of Warren, R. I., August 14.

Charles Wallace Ransom, M.D., Brooklyn, Wis., to Miss Myrtle B. Richards of Beloit, Wis., June 14.

Harry Hamilton Snively, M.D., Columbus, Ohio, to Miss Florence Knowlton of Plymouth, Ohio, August 15.

Harley Sylvester Herrick, M.D., Westford, Vt., to Miss Florence Amelia Holyoke of St. Albans, Vt., August 2.

Lillian B. Eshleman, M.D., Battle Creek, Mich., and Prof. Percy Taylor Magan of Unavara, Madison, Tenn., at Cherokee, Iowa, August 23.

Deaths

Samuel Wilson Trimmer, M.D. Philadelphia College of Medicine and Surgery, 1854, a prominent physician and politician of Luzerne County, Pa., some-time prothonotary and oil inspector of the county; a member of the National Association of Railway Surgeons, Luzerne County Medical Society and Lehigh Valley Medical Society, died at his home in White Haven, July 31, from angina pectoris, after an illness of several weeks, aged 71.

Clarkson C. Schuyler, M.D. Albany (N. Y.) Medical College, 1875, member of the Clinton County Medical Society, for 14 years consulting surgeon to the Troy Hospital, member of the Association of Military Surgeons of the United States, and state forest commissioner from 1893 to 1895, died from cirrhosis of the liver at his home in Plattsburgh, N. Y., August 16, aged 55.

John H. Stringfellow, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1845, known as the father of Atchison, Kan., speaker of the first Kansas House of Representatives, and founder of the *Squatter Sovereign*, the first newspaper published in that state, died at his home in St. Joseph, Mo., July 29, from pneumonia, aged 86.

Henry D. Stauf, M.D. Missouri Medical College, St. Louis, 1885, of St. Louis, who wandered away from home when ill July 28, is supposed to have fallen into the Mississippi River and been drowned on that day, aged 42. His body was taken from the river at Barrow, Tenn., August 12.

Robert Marsena Stone, M.D. New York, 1874; St. Louis College of Physicians and Surgeons, 1884; a member of the American Medical Association; a prominent practitioner of Omaha, who had made a special study of anesthesia for many years, died at his home in Omaha, August 14, from nephritis, after an illness of several weeks, aged 58.

Otto Negelspach, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1887, was killed instantly at his home in Millersburg, Ohio, August 14, by touching a broken telephone wire which had crossed an electric light wire, aged 37.

Andrew Carr Kemper, M.D. University of Louisville Medical Department, 1866, who served throughout the Civil War as surgeon, for the most part on the staff of General Halleck, died at his home in Cincinnati, August 15, aged 73.

W. Dalton Deshazo, M.D. University College of Medicine, Richmond, Va., 1905, of Stokesdale, N. C., died at the home of J. P. McMichael, near Madison, N. C., August 11, from typhoid fever, after an illness of three weeks, aged 24.

Samuel D. Tracy, M.D. Barnes Medical College, St. Louis, 1899, of Odin, Ill., president of the Southern Illinois Medical Association, died at the Olney Hospital, August 11, from typhoid fever, after a lingering illness, aged 29.

Robert Hugh Cooke, M.D. Starling Medical College, Columbus, Ohio, 1858, a surgeon in the Army during the Civil War, who retired from practice in 1866, died at his home in Grayville, August 6, after a long illness, aged 73.

John Van Vliet, M.D. Ensworth Medical College, St. Joseph, Mo., 1880, died at his home in Wheaton, Kan., August 7, from the effects of carbolic acid self-administered while despondent over long-continued ill health, aged 52.

J. L. Thigpen, M.D. Medical Department of the University of Georgia, Augusta, 1881, died at his home near Pineview, Ga., August 4, after a period of invalidism, due to cerebral hemorrhage, of four or five years, aged 68.

Francis Marion Setzler, M.D. Medical College of the State of South Carolina, Charleston, 1862, died at his home, near Whitmire, S. C., July 29, from disease of the stomach, after an illness of six months, aged 60.

W. S. Duncan, M.D. Illinois Army Board, 1864, (Years of Practice, Illinois), 1884; assistant surgeon Tenth Illinois Volunteer Cavalry in the Civil War, died at his home in Greenup, Ill., August 2, aged 80.

E. R. Weaver, M.D. Tennessee Medical College, Knoxville, 1892, of Highland Park, Chattanooga, Tenn., died at Erlanger Hospital in that city, August 4, after an illness of five weeks, aged 45.

Kimball David Webster, M.D. Vermont Medical College, Woodstock, 1837, said to have been the oldest practitioner in New Hampshire, died at his home in Gilsum, N. H., August 9, aged 94.

Harriman Couch, M.D. (Years of Practice, Illinois), 1879, said to have been the oldest practitioner of Peoria, Ill., died at St. Francis' Hospital in that city, August 18, after a long illness.

Frederick C. Hall, M.D. Medico-Chirurgical College of Philadelphia, 1894, died at his home in Scranton, Pa., August 14, from septicemia contracted in an operation six years before.

Joseph D. Wade, M.D. Medical College of the State of South Carolina, Charleston, 1857, died at his home in Marshallville, Ga., August 2, after a long period of decline, aged 72.

John H. King, M.D. University of Maryland School of Medicine, Baltimore, 1872, of Pocomoke City, Md., died at Ocean City, Md., August 12, from heart disease, aged 47.

Robert Patterson Robins, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1880, of Philadelphia, died at Sharon, Conn., August 13.

Wilfred J. Labelle, M.D. Laval University Medical Despartment, Quebec, 1895, died suddenly at his home in Swanton, Vt., August 9, from heart disease, aged 33.

John W. Holloway, M.D. University of Louisville Medical Department, 1850, died at his home in Nicholasville, Ky., from senile debility, August 14, aged 82.

Robert J. Clark, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868, died at his home at Chestnut Level, Pa., August 19.

Nathan M. Scales, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1860, died at his home at Vose, Ky., August 18, aged 67.

Cornelius C. V. Crawford, M.D. Jefferson Medical College, Philadelphia, 1863, of Camp Ground, Pa., died at Atlantic City, N. J., August 16.

D. H. Patchen, M.D. Illinois, 1879, of Fremont, Ind., was found dead in a hotel at Walcott, August 10. The coroner's verdict was suicide.

Samuel Sherbourne, M.D. Long Island College Hospital, Brooklyn, N. Y., 1882, died at his home in Philadelphia, August 14, aged 71.

James A. Murray, M.D. Chattanooga (Tenn.) Medical College, 1894, died at his home in Glenalice, Tenn., August 9, from pneumonia.

George E. Smith, M.D. Medical College of Ohio, Cincinnati, 1862, died at his home in Oberlin, Ohio, August 3.

Samuel J. Brown, M.D. Missouri, 1896, died at his home in Beaumont Station, Mo., August 14, aged 39.

Rudolf Bestle, M.D. Albany (N. Y.) Medical College, 1888, died at his home in Hunter, N. Y., August 9.

I. C. Truett, M.D. (Certificate, Tennessee), 1896, died at his home in Livingston, Tenn., July 29.

Book Notices

TREATISE ON PLAGUE, Dealing with the Historical, Epidemiological, Clinical, Therapeutic and Preventive Aspects of the Disease. By W. J. Simpson, M.D. Cloth. Pp. 466. Price, $5.00. Cambridge: The University Press. 1905.

The contents of the book are divided into four principal parts: history and distribution of plague; epidemiology of plague; plague in the individual; measures for prevention and suppression of plague. There are two appendices, one giving the deaths from plague in India in 1904 and one giving the provisions of the International Sanitary Convention at Paris, 1903. There are maps, charts and illustrations of buboes, etc. "Few thought it possible, when plague broke out in Bombay in 1896 after an absence of 200 years, that the disease would not be controlled, checked and stamped out in a short time. It was a rude awakening when deaths began to mount up to a few thousand to find old scenes associated with plague epidemics reappear. The closed houses, the deserted streets, and nearly half of the population fleeing panic-stricken from the city, testified to the fact that plague had lost none of its old horrors. . . . The next year and every year since 1896, the disease has recrudesced in Bombay, and the number of deaths is fast mounting up beyond the mortality of any epidemics of plague in any single city in the past with the exception of those of Constantinople and Grand Cairo. And still the disease continues. Plague has moreover spread from Bombay to the Bombay Presidency, and from the Bombay Presidency to a large portion of India. Slow in its progress it has steadily advanced; and now the 30.000 deaths from plague which occurred in India in the past year, and which created so much alarm, has reached during the past two years over three-quarters of a million per annum. In 1903 the number of deaths from plague in India was 853,000, and in 1904 it was over a million, being 1,040,429. . . . The total number of deaths in India officially recorded from plague since 1896 was, up to the end of December, 1904, 3,150,000." Do not these statements from the preface come as a shock to most of us? The book is written with the organization of a high grade Indian public health service in mind, which is regarded as essential for the establishment of proper and effective preventive measures. At the same time plague in its various aspects is considered in such a way as to interest and greatly instruct all that are in any way concerned about this disease. The importance from the point of view of a prevention of conjoint action on the part of those engaged in research and of those engaged in administration is clearly recognized and stated. In the seventh century two kings of Erin summoned a council at Temora because the land was not sufficient to support the population. The chiefs decreed that a fast should be observed so that they might with one accord solicit God to remove by some species of pestilence the burthensome multitudes of the inferior people. And a pestilence did come; it removed the authors of the petition, the two kings and a third of the nobles concerned. This sounds passing strange to us at this time, but there are those even now who hold that plagues are necessary to keep down populations that otherwise would perish by hunger. This doctrine is easy-going and would lead to the saving of much trouble; for to prevent the spread of plague in India demands strenuous statesmanship as well as organized sanitary service. In the meantime the condition of the people of India in the worse affected provinces is most deplorable. "It not only claims the deepest sympathy, but also in the interests of humanity imperatively demands the closest attention. . . ." Dr. Simpson's book does not appear to be the product of an alarmist, but of an earnest, practical sanitarian, with broad views, and his treatise should be in the library of all students of preventive medicine.

ACUTE CONTAGIOUS DISEASES. By William M. Welch and Jay F. Schamberg, M.D. Illustrated with 109 Engravings and 61 Full-Page Plates. Cloth. Pp. 781. Price, $5.00. Philadelphia: Lea Bros. & Co. 1905.

This book deals with vaccinia, smallpox, chickenpox, scarlet fever, measles, typhus fever, diphtheria and disinfection, i. e., the diseases that by virtue of extreme contagiousness require isolation and treatment in special hospitals. Nearly one-half of the 781 pages are given over to the discussion of smallpox and allied subjects, e. g., vaccinia and varioloid diseases in lower animals. Vaccination in all its phases is considered with great thoroughness. Dr. Welch's long personal experience with smallpox is drawn on freely and instructively, and nothing but satisfaction can be expressed with the presentation of the various topics regarding it. Our knowledge concerning this disease is here summarized in an attractive and serviceable manner and with interesting references here and elsewhere as well to the older literature on the subjects discussed. We believe, however, that the authors are a little prematurely skeptical concerning the value of the red-light treatment of smallpox advocated by Finsen. The necessity of actually demonstrating that the actinic rays are excluded completely in so-called red-light wards before any opinion may be formed as to the value of the treatment is not emphasized; furthermore, nothing is said of the limitations of the treatment outlined by Finsen, namely, that it must be begun before the fourth or fifth day of the disease.

Scarlet fever is given adequate consideration. No definite stand is taken as to the vexed question of the etiology of this disease. Most of the advocates of the streptococcal nature of the disease are cited, with some notable omissions (Moser and others). The views as to the value of antistreptococcus serum in the treatment appear conservatively sane. The extensive literature in regard to scarlet fever has been reviewed with great care. About 90 pages are given to the treatment of diphtheria. The antidiphtheric serum is given first place and a large amount of statistics bearing on the results are presented. The last chapter deals with disinfection. The illustrations are mostly of the various eruptions and rashes of the contagious disease. In the index we note that the names of the authors quoted in the text are omitted. The reviewer believes that it is of advantage in works of this nature to index the names of authors. The book is recommended heartily to physicians for guidance and information with respect to the important diseases of which it treats.

A Manual of Midwifery for Students and Practitioners. By H., Jellett, B.A., M.D., F.R.C.P.I., L.M., with the assistance in special subjects of W. R. Dawson, M.D., F.R.C.P.I., Medical Superintendent Farnham House, Dublin; H. C. Drury, M.D., F.R.C.P.I., Physician to Sir Patrick Dun's Hospital, Dublin; T. G. Moorhead, M.D., Physician to the Royal City of Dublin Hospital, Dublin; R. J. Rowlette, M.D., Pathologist to the Rotunda Hospital and to Dr. Stevens' Hospital, Dublin. With 476 Illustrations. Cloth. Pp. 1158. Price, $5.50. New York: William Wood & Co.

In times past it was the popular belief that all things British gave evidence of their insular opinions. The work of Henry Jellett, of Dublin, would most emphatically refute any such opinion, if held. A perusal of his manual of obstetrics will impress all with the cosmopolitan character of the presentation of the material embodied in the volume. We may say with positiveness that no British obstetric writer has so broadly interpreted the work of the foreign authorities as has Dr. Jellett; the recognition of American writers is particularly frequent. From first to last one finds constant pleasure in reading the various topics. The style is easy, entertaining, and the writer has not entered into pedantic discussions; the matter is sufficiently concise for students, yet amply broad for the practitioner; the work has been so brought up to date that the latter will find much to attract him, while the former will receive a thorough foundation in the principles and practice of obstetrics. To cover the innumerable virtues of the book would necessitate a mention of nearly every topic discussed. The parts of the volume which deserve special commendation, if they may be given a preference, are the physiology of pregnancy, labor and the puerperium, and the consideration of chorio-epithelioma in the pathology of pregnancy. Special mention must be made of the obstetric operations, the presentation of which is eminently fair, free of all dogmatism of statement, and abundantly adequate for the needs of those for whom the manual is primarily intended. Certain aspects of the volume appear faulty to an American. We can not agree with Dr. Jellett in his recommendation of the Dublin method of conducting the third stage of labor if he has correctly described it; the technic of the Dublin method is not that of Credé; therefore, we can not accord priority to the rotunda for the proper technic of fundal placental expression, for Credé has suggested a material improvement. Dr. Jellett describes the Dublin method as follows: The ulnar surface of the hand should be placed behind the uterus, and expression be consummated by a downward and backward movement as the uterus is compressed from side to side. We believe this is dangerous teaching for two reasons: First, the "side-to-side" compression means the production of an actual cavity within the uterus, which does not physiologically exist, with the possibility of causing an aspiration of air—a danger which he himself mentions in the discussion; secondly, the more valid objection lies in the fact that lateral compression may produce a dangerous injury to the tubes and ovaries. We believe traction on the cord deserves no mention in a modern obstetric work as a means of delivering the placenta beyond a most unequivocal condemnation. We regret the omission of all mention of the disposal of the pubic hair in his discussions of surgical cleanliness; to say the least it is inconsistent to demand the routine shaving in gynecologic work and to omit its mention in connection with obstetric surgery. In the discussion of the treatment of eclampsia we feel that too great stress is laid on the administration of sedatives and emptying the uterus without a direct correlation of the eliminative treatment. The exhibition of chloral, bromids, morphia, and chloroform are not curative measures, are merely empirically applied expedients. Elimination is the *sine qua non* and should be most prominently brought forward in connection with all other therapeutic measures until we have a specific therapeusis. The treatment of asphyxia neonatorum is insufficiently stated, being practically limited to Schultze's swinging and Hall's maneuver, two methods formerly much in vogue, and the former still recommended with unvarying regularity. The dangers of Schultze's swinging—the rapid cooling of the body (retention of heat being a most essential requisite), the great danger of producing fractures, if not mortal injuries, the liability of causing aspiration of mucus, and, finally, the necessity of violent exertions on the part of the manipulator, leave little to recommend the procedure. We find no mention of Byrd's, Bruist's, Prochownik's, Laborde's methods, and the most convenient plan of rhythmic compression of the chest while the trunk of the child is submerged in a warm bath. The illustrations generally depict the descriptions of the text and are well executed; they truly illustrate the work.

Multiple Personality, an Experimental Investigation Into the Nature of Human Individuality. By Boris Sidis, M.A., Ph.D. (Harvard), Author of the Psychology of Suggestion and Psychopathologic Researches, and Simon P. Goodhart, Ph.B. (Yale), M.D. Cloth. Pp. 456. Price, $2.50 net. New York: D. Appleton & Co. 1905.

This work is in three parts. In the first, by Dr. Sidis, the subject of personality is treated, the author going through the various types of life to illustrate the development of the individual consciousness. This, of course, is largely psychologic, the view being held that as the organizations pass upward on the scale they become more complex and the possibilities of dissociation more numerous. The constitution of the individual mind, according to the author, is made up of many subordinate individual minds less complex in their nature. There may be, he says, "as many different personalities, parasitic or secondary, as there are possible combinations and disaggregations of psychophysiological aggregates. There may, therefore, be different forms of secondary consciousness or of multiple personality. These may be of a simultaneous character or one of alternation. The personalities may appear side by side or they may appear alternately. The play of personality may be of a dramatic character, the characters and personality appearing on the scene of consciousness like so many actors, the whole appearing as a play of many different persons." In other words, passing upward from the simplest individual consciousness of the lowest organism with a neuron the author finds the highest complications of neurons still a bundle of disagreeable consciousnesses or personalities. Thus in certain conditions and in certain peculiarly constituted individuals, the whole higher system of cells and association fibers may be switched off from its normal psychologic functioning corresponding to its past life and experience into something quite different so far as the consciousness or sense of identity of the individual is concerned. Recollections may be suppressed, new combinations of the highest association centers be brought into play and a complete break in the individual life be accomplished more or less completely or permanently. This is, perhaps, not an adequate explanation of the author's ideas, but it comes as near to it as is possible without going very much more extensively into their interpretation. The second part of the book, by Drs. Sidis and Goodhart, gives their observations of the case of the Rev. Mr. Hanna, which was carefully studied by them several years ago. It is an interesting account and probably the most thorough study of any such instance that has ever been made, but it does not seem to our mind to be altogether the best one to illustrate some of the phases of so-called multiple personality. The third part, by Dr. Sidis, is entitled "Consciousness and Multiple Personality," and goes at length into the pathologic psychology of the morbid conditions here discussed. The reader will find this part of the work interesting and suggestive in many ways, and the explanations given are, perhaps, as satisfactory as is possible with our present knowledge, but they do not appear to us to clear up the subject entirely. One can easily conceive of a subconscious personality under many normal conditions. Our common automatic movements naturally suggest it, and it may come more visibly into play under certain quasi pathologic conditions. The complete change of personality, however, many instances of which have been reported where the subject apparently takes up an entirely distinct and seemingly normal existence, is not so easily explainable. If we can exclude delusions, epileptic states which are themselves somewhat obscure and hysterical deception in these cases, there is left a rather difficult problem. The subject, however, is well studied in many of its aspects by the author and the work can be profitably pursued by anyone interested in such studies.

Practical Pediatrics. A Manual of the Medical and Surgical Diseases of Infancy and Childhood. By Dr. E. Graetzer, Editor of the *Centralblatt fur Kinderheilkunde* and the *Excerpta Medica*. Authorized Translation, with Numerous Additions and Notes, by Herman B. Sheffield, M.D., Instructor in Diseases of Children, and Attending Pediatrist (O.P.D.). Flexible Cloth. Pp. xii-544. Price. $3.00 net. Philadelphia: F. A. Davis Co.

The stated purpose of this volume is "to be brief and to the point, and contain as many parenthetical points as possible, so as to permit at a glance of the selection of the more important from the less important material." A book of this kind is usually justly subject to adverse comment because it recounts symptoms and remedies without discussing fundamental conditions and treatment principles; the result is a jumble of details difficult to assimilate and supplying no knowledge of relative values; accurate and complete, perhaps, but neither clear nor discriminating; really "practical," therefore, only in appearance. The present volume, however, is singularly free from the faults of its class. Of course, this book presupposes familiarity with disease in adults, and naturally it will not take the place of a thorough treatise on diseases of children. The section on the now very important subject of modification of cow's milk is notably unsatisfactory, but the chapter on palatable prescribing is valuable. With Dr. Sheffield's timely comments and addenda the book is generally up-to-date and extensive in its range.

Lehrbuch Der Kinderkrankheiten für Arzte und Studireende von Dr. Adolf Baginsky, Professor der Kinderkeilkunde an der Universität Berlin. Achte völlig neu durchgearbeitete und verbesserte Auflage. Paper. Pp. 1168. Leipzig. Verlag von S. Hirzel, 1905.

This classic on children's diseases appears in its eighth edition. Baginsky's book represents his own vast experience together with a painstaking study of the literature. The new edition follows very shortly on the seventh, indicating the large circulation which the book enjoys. Nearly every chapter gives evidence of alterations and additions. The subject matter is thoroughly reliable and altogether up to date. It would be difficult to select any subject which is not carefully and exhaustively considered. The subjects of diphtheria, typhoid fever, gastrointestinal diseases and the diseases of the new born are especially attractive. They contain the results of the author's extensive personal observations and clinical studies. The study of infant feeding is not treated in a dogmatic way, and the various plans of feeding which are in vogue in the different centers are discussed at some length. He advocates pure milk, properly diluted, whatever method be employed. The proprietary foods are mentioned and methods of administering them discussed, though their use is not advised.

Malformations of the Genital Organs of Woman. By Ch. Debierre, Professor of Anatomy in the Medical Faculty at Lille. With 85 Illustrations. Translated by J. Henry C. Simes, M.D., Emeritus Professor of Genito-Urinary and Venereal Diseases in the Philadelphia Polyclinic. Cloth. Pp. 182. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1905.

This work is of little practical use to the general practitioner and perhaps is not intended for him. The conditions it describes are not often met in practice. Many of the anomalies noted are of medicolegal importance, but the quotations from French non-medical writers might well have been omitted.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

METHOD OF GIVING YEAST IN TUBERCULOSIS.

———, Aug. 15, 1905.

To the Editor:—Will you kindly enlighten me as to the proper way to administer yeast in the treatment of tuberculosis? Your review of article in the London *Lancet*, by W. R. Huggard, appearing in The Journal, July 1, 1905, says nothing about doses, time of administering, etc. If brewers' yeast is not accessible, could ordinary home-made yeast be used safely? J. W.

Answer.—It has not been definitely determined just what is the best way to administer yeast in the treatment of tuberculosis. Huggard and Morland have given the dried yeast suspended in milk or water, which may be drunk during the meal. Their doses have varied from three to ten grams (a piece the size of a filbert to that of a walnut) twice daily. A good variety of common pressed yeast may be used. The German *Presshefe* is preferred by some. More recently Huggard and Morland have been giving ten grams every five days as an experiment. This was suggested to them by the observation that the opsonic power of the blood (see Journal A. M. A., 1904, vol. 42, p. 1689) often falls somewhat immediately after the ingestion of yeast, but later rises above the normal level, and stays there for several days. They believe that the beneficial results of yeast are attributable to this rise in the opsonic power of the blood, which is a direct aid to phagocytosis. We would advise that too much dependence be not placed on the treatment till further evidence be produced regarding its true value.

State Boards of Registration

COMING EXAMINATIONS.

Wyoming State Board of Medical Examiners, State Capitol, Cheyenne, Wyo., September 6. Secretary, S. B. Miller, Laramie.

Massachusetts Board of Registration in Medicine, State House, Boston, September 12-13. Secretary, E. B. Harvey, Boston.

Michigan June Report.—Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the examination held at Lansing, June 13, 1905. Sixty-eight candidates were examined, of whom 67 passed and 1 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
University of Michigan	(1905)	89.84, 88, 84.94, 91.10, 87.42, 88.52, 88.26, 78.31, 86.73, 91.47, 87.89, 88.57, 88.31, 87.52, 89, 87.57, 89.73, 87.36, 92.89, 86.52, 86.31, 85.73, 86, 88.42, 89.94, 83.47, 85.26, 86.42, 90.21, 85, 88.52, 90.36, 83, 84.05, 90.68, 86.52, 83.26, 86.36, 86.26, 82.10, 83.36, 89, 90.63;
	(1904)	88.42, 83.94, 88.57, 85.10, 88.84, 87.47, 84;
	(1903)	87.
University of Michigan. Homeo. Dept.	(1905)	88.57, 83.78, 84.57;
	(1903)	84.89.
Woman's Med. Coll., Philadelphia	(1904)	91.89
College of P. & S., Chicago	(1898)	75.42;
	(1896)	75.21
Kentucky School of Medicine	(1904)	85.10
Detroit Coll. of Med	(1905)	70.42, 80.26, 79;
	(1902)	85.89
American Med. Miss. Coll.	(1901)	87.84, 83.94
Royal University of Turin, Italy	(1895)	84.57
New York Homeo. Med. Coll.	(1905)	86.21

FAILED.

College.	Year Grad.	Per Cent.
College of P. & S., Chicago	(1903)	66.31

The general average attained by representatives of the University of Michigan, excluding graduates of the homeopathic department was 87.1.

Ohio June Report.—In the report of the examinations held in June and published in The Journal, Aug. 19, 1905, the percentage of 88 attained by one graduate of the Western Reserve University was omitted. The general average attained by representatives of Cleveland College of Physicians and Surgeons was given as 82 when it should have been 89.14.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Aug. 19, 1905:

Rand, I. W., asst.-surgeon, granted leave of absence for one month, with permission to apply for an extension for one month.

Carter, Edward C., surgeon, leave of absence extended one month.

Heard, George P., asst.-surgeon, having reported arrival at San Francisco, Cal., from Manila, P. I., will take station at Army General Hospital, Presidio of San Francisco, Cal.

Glennan, James D., surgeon, and Darnall, C. R., asst.-surgeon, detailed members of examining board at Fort Monroe, Va.

Davidson, W. T., asst.-surgeon, relieved from duty at Army General Hospital, Presidio of San Francisco, and ordered to Presidio of Monterey, Cal., for temporary duty.

Gibner, Herbert C., and Bruns, Earl H., asst.-surgeons, relieved from duty with troops now on duty at the Sequoia and Yosemite National Parks, Cal., and to accompany Fifteenth Infantry to Philippine Islands. On arrival at Manila to report to commanding general, Philippines Division, for assignment to duty.

Cornman, Leighton R., contract surgeon, ordered from Army General Hospital, Presidio of San Francisco, to his home, Lowell, Mass., for annulment of contract.

Clayton, George R., contract surgeon, granted leave of absence for one month.

Lauderdale, C. E., dental surgeon, granted one month's leave of absence.

Stearns, Charles H., contract surgeon, returned from leave of absence to duty at Fort Monroe, Va.

Hallwood, J. B., contract surgeon, returned from leave of absence to duty at Fort Leavenworth, Kan.

Kieruluff, H. Newton, contract surgeon, relieved from further duty in the U. S. Transport Service, and ordered to duty in Philippine Islands.

Lemmon, Robert, contract surgeon, left Fort Preble, Maine, and arrived at Fort McKinley, Maine, for duty.

Wertenbaker, C. I., contract surgeon, left Madison Barracks, N. Y., en route to Ogdensburg, N. Y., with Third Battalion, Twenty-third Infantry.

Dougherty, J. C., contract surgeon, returned to duty at Fort Slocum, N. Y., from detached service at Fort Monroe, Va.

Byars, C. R., contract surgeon, returned to duty at Fort Sam Houston, Texas, from temporary duty at Fort McIntosh, Texas.

White, J. S., contract surgeon, left Fort Harrison, Mont., for his proper station, Fort Snelling, Minn.

Lowe, Thomas S., contract surgeon, will accompany Third Squadron, Thirteenth Cavalry, to Fort Sill, Okla., on completion of which duty will avail himself of leave of absence.

Navy Changes.

Change in the Medical Corps, U. S. Navy, for the week ending Aug. 19, 1905:

Brooks, F. H., asst.-surgeon, ordered to the Naval Hospital, New York.

Dunbar, A. W., surgeon, detached from the *Wyoming* and ordered home to wait orders.

Ames, H. E., medical inspector, detached from the Naval Academy and ordered to the *Maine,* for duty as fleet surgeon of the North Atlantic Fleet.

Lewis, D. O., medical inspector, detached from duty on the *Chicago* as fleet surgeon of the Pacific squadron and ordered home to wait orders.

Beyer, H. G., medical inspector, detached from the Naval Medical School, Washington, D. C., and ordered to special duty in connection with an international congress, Paris, France, and thence to the Asiatic fleet, for duty as fleet surgeon.

Dickson, S. H., medical inspector, detached from the *Maine* and from duty as fleet surgeon of the North Atlantic fleet, and ordered home to wait orders.

Biddle, C., surgeon, detached from duty as fleet surgeon of the Asiatic fleet, and ordered to the *Chicago* for duty as fleet surgeon of the Pacific squadron.

Berryhill, T. A., surgeon, ordered to Washington, D. C., September 1, for duty as instructor at the Naval Medical School, Washington, D. C.

Gatewood, J. D., surgeon, ordered to Washington, D. C., Aug. 22, 1905, for duty as instructor at the Naval Medical School.

Benton, F. L., P. A. surgeon, ordered to the Naval Hospital, New York, N. Y., for duty.

Murphy, J. A., P. A. surgeon., detached from the Naval Medical School, Washington, D. C., and ordered to the *Des Moines.*

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Aug. 16, 1905:

Sawtelle, H. W., surgeon, leave of absence granted him for one month from July 21, 1905, amended so as to be for twenty-three days.

Sawtelle, H. W., surgeon, to proceed to Norfolk and other points in state of Virginia for special temporary duty.

Cofer, L. E., P. A. surgeon, to proceed to Hile, T. H., for special temporary duty.

Lavinder, C. H., P. A. surgeon, to proceed from Gulfport, Miss., to New Orleans, La., and report to Surgeon J. H. White for special temporary duty.

von Ezdorf, R. H., P. A. surgeon, relieved from duty in the Canal Zone and directed to proceed to New Orleans, La., and report to Surgeon J. H. White for special temporary duty.

King, W. W., P. A. surgeon, to proceed to San Juan, Porto Rico, for special temporary duty.

Goldberger, Joseph, P. A. surgeon, to proceed from Mansfield to Alexandria, La., for special temporary duty.

Stimson, A. M., asst.-surgeon. Department letter of July 10, 1905, amended so as to grant him leave of absense for seventeen days instead of one month and fourteen days.

Ebert, H. G., asst.-surgeon. Department letter of July 13, 1905, granting him leave of absence for a period of two months from Aug. 4, 1905, revoked.

Addis, W. E., acting asst.-surgeon, to proceed to Jackson, Miss., and report to P. A. Surgeon G. B. Young for temporary duty.

Cleaves, F. H., acting asst.-surgeon, granted leave of absence for one day, Aug. 3, 1905.

Gray, R. H., acting asst.-surgeon. Department letter of June 24, 1905, amended so as to grant leave of absence for twenty-five days from July 6, instead of thirty days.

Houghton, M. W., acting asst.-surgeon, granted leave of absence for one day, Aug. 31, 1905.

Kennard, K. S., acting asst.-surgeon. Department letter of July 26, granting him leave of absence for a period of twenty-one days from Aug. 7, 1905, cancelled by Department letter of Aug. 11, 1905.

Nall, R. P., acting asst.-surgeon, to proceed to Jackson, Miss., and report to P. A. surgeon G. B. Young for temporary duty.

Stuart, A. F., acting asst.-surgeon. Department letter of May 27, 1905, amended so as to grant him leave of absence for twenty-eight days instead of thirty days, from July 3, 1905.

Holsendorf, B. E., pharmacist, to proceed to San Juan, Porto Rico, for special temporary duty.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended, Aug. 21, 1905:

SMALLPOX—UNITED STATES.

California: Los Angeles, July 22-August 8, 5 cases.

Florida: Jacksonville, July 22-August 5, 2 cases.

Illinois: Chicago, August 5-12, 6 cases; Danville, July 29-August 8, 1 case.

Indiana: South Bend, July 29-August 12, 2 cases.

Kentucky: Lexington, July 22-August 3, 3 cases.

Louisiana: New Orleans, July 29-August 12, 5 cases.

Massachusetts: Lowell, August 5-12, 3 cases.

Missouri: St. Joseph, July 22-29, 1 case.

New Hampshire: Nashua, July 23-August 12, 3 cases.

New York: New York, July 29-August 5, 3 cases, 1 death.

Ohio: Cincinnati, August 3-12, 5 cases.

Pennsylvania: August 5-12, Altoona, 1 case; York, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: June 3-10, 1 case.

Porto Rico: San Juan, June 1-30, present.

SMALLPOX—FOREIGN.

Brazil: Bahia, July 1-8, 1 death; Rio de Janeiro, July 2-9, 18 cases, 1 death.

Chili: Iquique, July 15-22, 1 case.

France: Paris, July 15-22, 33 cases, 2 deaths.

Great Britain: July 15-22, Birmingham, 3 cases; Bristol, 1 case; London, July 8-15, 2 cases; Manchester, July 15-22, 1 case; New Castle-on-Tyne, July 8-22, 5 cases; Nottingham, July 22-29, 1 case.

India: Calcutta, June 24-July 8, 7 deaths; Madras, July 1-7, 3 deaths.

Italy: Catania, July 21-27, 2 deaths.

Russia: Moscow, July 8-22, 7 cases, 9 deaths; Odessa, July 15-22, 3 cases.

Turkey: Constantinople, July 16-23, 3 deaths.

YELLOW FEVER—UNITED STATES.

Louisiana: Sellers, August 7, 4 cases; Shreveport, August 1-9, 2 cases; New Orleans, July 21-August 11, 720 cases, 118 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, July 2-10, 37 cases, 12 deaths.

Guatemala: Livingston, July 15-22, 2 deaths; Zacapa, August 3, 9 deaths.

Honduras: Choloma: July 26, 10 cases, 4 deaths; Puerto Cortez, July 1-24, 25 cases, 6 deaths; San Pedro, July 26, 100 cases, 19 deaths.

Mexico: July 30-August 5, Coatzacoalcos, 1 case; Veru Cruz, 4 cases, 1 death.

Panama: July 18-25, Colon, 6 cases, 2 deaths; Panama, 8 cases, 2 deaths.

CHOLERA.

India: Calcutta, June 18-July 8, 20 deaths.

PLAGUE—INSULAR.

Philippine Islands: June 3-10, Cebu, 4 cases, 3 deaths; Manila, 1 case, 1 death.

PLAGUE—FOREIGN.

Australia: Maruborough, June 10-17, 10 cases, 7 deaths.

Brazil: Rio de Janeiro, July 8-16, 2 cases.

India: General, June 18-24, 5,078 cases, 4,563 deaths; Calcutta, June 18-July 8, 56 deaths.

Medical Organization

Georgia.

Bartow County Medical Society.—This society has perfected its organization and has adopted the constitution and by-laws as component branch of the state association. Dr. Alfred T. Calhoun, Cartersville, is president, and Dr. Oliver H. Buford, secretary.

Clarke County Medical Society.—Physicians of the county met at Athens, June 28, and with the assistance of Dr. Samuel C. Benedict, Athens, councilor for the eighth district, organized a society on the standard plan and elected the following officers: Dr. James C. Bloomfield, president; Dr. Daniel D. Quillian, vice-president; Dr. Henry M. Fullilove, secretary-treasurer, and Drs. Isham H. Goss, Samuel H. Dillard and —Echols, censors, all of Athens, Ga.

Cobb County Medical Society.—This society was organized in Marietta the last week in July with ten charter members and the following officers: President, Dr. Charles T. Nolan, Marietta; vice-president, Dr. E. M. Bailey, Acworth; Dr. William C. Humphries, Acworth, secretary and treasurer, and Drs. J. G. Malone, William A. Kemp, Marietta, and J. E. Lester, Kennesaw, censors.

Jackson County Medical Society.—At a meeting called at Jefferson, August 9, by Dr. William B. Hardman, Harmony Grove, councilor for the ninth district, the physicians of the county organized a society on the standard plan with the following officers: Dr. J. C. Bennett, Jefferson, president; Dr. Leonard J. Sharp, Converse, vice-president; Dr. John A. Bryan, Pendergrass, secretary, and Dr. Albert D. White, Pendergrass, treasurer.

Illinois.

Boone County Medical Society.—Physicians of the county met in Belvidere, July 14, and organized a medical society with the following officers: President, Dr. Robert W. McInnes; vice-president, Dr. Daniel E. Foote; secretary, Dr. R. Boyd Andrews, and treasurer, Dr. John B. Leitzell, all of Belvidere.

Indian Territory.

Indian Territory Medical Association.—At a conference July 13 in Oklahoma City, between committees representing both the Oklahoma and Indian Territory medical associations, with a view to the union of the two organizations when statehood is secured, it was decided to hold a joint meeting at Oklahoma City, May 8, 1906. Dr. William E. Dicken, Oklahoma City, was chosen president, and Dr. LeRoy Long, South McAlester, I. T., secretary, of the joint session.

Kansas.

Cowley County Medical Society.—The physicians of Cowley County met at Winfield, July 13, and with the aid of Dr. Oliver J. Furst, Peabody, councilor for the fourth district, organized a society on the standard plan with a charter membership of 14. Dr. James W. Sparks, Arkansas City, was elected president; Dr. Leon Jacobus, Winfield, vice-president; Dr. Ernest F. Day, Arkansas City, secretary, and Dr. H. L. Snyder, Winfield, treasurer. A preliminary meeting was held June 24 in Winfield.

Kentucky.

Boone County Medical Society.—This society met at Burlington, July 23, and adopted a constitution and by-laws.

Madison County Medical Society.—At the meeting of this society in Richmond, July 22. Dr. Frank H. Clarke, Lexington, president of the Kentucky State Medical Society, and Dr. Isaac A. Shirley, Winchester, made addresses on "Medical Organization."

Missouri.

Worth County Medical Society.—On July 12 Dr. E. H. Miller, councilor of the third district, met the physicians of the county at Grant City and assisted in the organization of a county society on the standard plan. Dr. Oliver P. M. Mills, Grant City, was elected president; Dr. E. Paulus Nesbitt, Sheridan, vice-president; Dr. J. K. Phipps, Grant City, secretary, and Dr. J. F. Bove, Allendale, treasurer.

Pennsylvania.

Clinton County Medical Society.—At the meeting held July 21, at Lock Haven, the committee appointed at the last meeting to submit a report on the matters outlined in Dr. McCormack's address, reported, recommending a uniform fee bill; the adoption of some system of delinquents throughout the county; minimum fee for examining applicants for life insurance; a definite understanding about night calls, and fee for same; the holding of clinics at the hospital at each meeting of the society; a definite understanding as to what constitutes contract practice and rules governing the same; that all professional positions shall be paid according to regular fee bill rate, and the adoption of a resolution instructing the delegates to the state convention to concur in any movement tending to the unification of the profession in the state. The report was adopted and a committee consisting of Drs. Francis P. Ball, Lock Haven; C. L. Fulmer, Renovo, and Saylor J. McGhee, Mill Hall, was appointed to carry out the recommendations.

South Carolina.

Florence County Medical Society.—This society, at its meeting in Florence, July 10, elected Dr. N. W. Hicks, Florence, president, and adopted the by-laws suggested for county societies by the American Medical Association.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Administration of Digitalis.

A Hecht, in *Amer. Jour. Med. Sciences,* states that in the treatment of diseases of the heart it is necessary not only to strengthen the heart muscles, but to keep up the patient's nutrition. For this reason drugs that tend to upset the patient's digestion must be avoided. In this connection he mentions digitalis as a preparation which is especially liable to disturb the stomach when it is in an atonic condition, as this drug is likely to remain in the stomach for a considerable length of time and to produce nausea. On this account he recommends that it be prescribed with agents which tend to counteract this tendency. The author recommends the following formula:

℞.	Pulv. digitalis			
	Quin. hydrochlor., āā	gr. xx	1	30
	Ext. nucis vom	gr. iv-vii		25-.45

M. Ft. capsulæ No. xxx. Sig.: One capsule three times a day.

H. O. Hall, in *Amer. Medicine,* calls attention to the fact that digitalis may cause delirium and hallucinations which are sometimes attributed to the disease affecting the patient instead of to the digitalis. He, therefore, states that in all cases in which delirium occurs in patients suffering from heart diseases, it should be decided that the toxic effect of digitalis is not a factor in the production of these symptoms. This can be done by attention to the elimination, as digitalis is cumulative in action.

In cases of cardiac dropsy the following combination is recommended by Beasley:

℞.	Infusi digitalis	ʒi	4	
	Potass. acetatis	gr. x		65
	Tinct. opii	m. v		30
	Aquæ chloroformi q. s. ad	℥ss	15	

M. Sig.: To be taken at one dose and repeated three times daily.

For nervous palpitation he recommends the following:

℞.	Tinct. digitalis	m. v		30
	Syr. aurantii	ʒi	4	
	Acidi hydrocyanici dil	m. ii		12
	Aquæ camphoræ q. s. ad	℥i	30	

M. Sig.: At one dose and repeat once in four hours if necessary.

A combination of digitalis, scilla and hydrargyrum, for the treatment of cardiac insufficiency, accompanied by edema and dropsy, is as follows:

℞.	Pulv. digitalis			
	Pulv. scillæ			
	Pil. hydrarg., āā	gr. i		06
	Ext. hyoscyami	gr. ii		12

M. Ft. pillula No. i. Sig.: One such pill twice daily.

The following combination is sometimes of value in heart cases:

℞.	Tinct. digitalis	m. x		65
	Spts. chloroformi	m. xv	1	
	Inf. gentianæ co. q. s. ad	℥i	30	

M. Sig.: At one dose and repeat three times daily. Or:

℞.	Tinct. digitalis	m. v		30
	Spts. glycerylis nitratis (1 per cent.)	m. i		06
	Tinct. strophanthi	m. iii		20
	Caffeinæ citratæ	gr. i		06
	Spts. arom. q. s. ad	ʒi	4	

M. Sig.: At one dose in a wineglass of water and repeat two or three times a day.

Lobar Pneumonia in Children.

Lobar pneumonia in infants, according to Koplik, in *Boston Med. and Surg. Jour.*, differs in children as compared to adults in that double pneumonia is less frequent in children and pneumonia of the upper lobes is more frequent. The treatment should be outlined in much the same manner as in other infectious diseases or in typhoid fever.

The temperature requires treatment according to the mischief it is doing. Some infants bear high temperature remarkably well, while others do not. Hydrotherapy is the sheet anchor in the treatment of temperature. And in its application it must be kept in mind that the Brand bath or the cold bath are second in importance to the milder measures of sponging or to the application of cold compresses wrung out of water at a temperature of from 75 to 80 F. Infants, as a rule, bear the cold bath very badly and when the reaction is delayed it is difficult, particularly in bottle-fed infants, to rouse them out of the depression caused by it. The author applies a definite index for hydrotherapy in these cases. If a child does not react from a cold sponge, a lukewarm sponge is applied, and in some infants it is impossible to sponge at all. In such cases he recommends compresses, wrung out of water at a temperature of from 75 to 80 F. and applied from the neck to the umbilicus.

The heart should always be supported if necessary. Children above 5 years of age require but little support for the heart, as a rule, while those under 5 frequently require active support.

Alcohol and digitalis are the best remedies in supporting the heart in lobar pneumonia in infants, using a reliable tincture of digitalis and alcohol in the form of whisky, which is much preferable, in the author's opinion, to brandy, and it should not be given in too large doses on account of the danger of upsetting the stomach. If cyanosis be present, showing the strain on the right ventricle, nitroglycerin is regarded as the most useful remedy, given in doses ranging from 1/100 to 1/150 grain (.0006-.0004) every few hours. In younger children a smaller dose is required. He pleads for greater caution in the use of strychnia in pneumonia on account of the dangers from strychnia poison and also because of the lack of knowledge as to its exact action. It should not be used in nervous children who, without its use, show tremors and unrest due to toxemia and high temperature. The nutrition of the patient is by far the most important thing to be considered in this disease. Water should be given frequently, if the tongue is dry, in teaspoonful doses, perhaps every half-hour, if it does not disturb the child too much. The hourly system of stimulation is to be condemned. The medicines and food should be given at about the same time if it can be so arranged, so as to disturb the patient as little as possible. If these intervals can be lengthened to every three hours so much the better for the patient, for rest is an important element.

[In bottle-fed infants and in young children it is often unwise to give food and medicine at the same time, as dislike for the medicine may cause the child to refuse to take the necessary nourishment.]

He has not seen much benefit from the use of oxygen. The room should be kept at a temperature of from 67 to 68 F. and well ventilated; it should be quiet and isolated.

Complications must be watched for. If during the course of the disease a high temperature reigns (105 F.) for any length of time, the ears of the patient must be examined, and if the temperature does not drop at the end of seven or eight days, the chest should be examined for effusion, and if that is absent, examine the heart carefully. The cough should be controlled and, if necessary, codein may be used, or paregoric or the wine of opium, rarely morphin or the stronger preparations of opium. In younger children tympanitis is troublesome and for its relief a calomel purge is of service.

Tympanitis embarrasses the heart (and by some authorities produces atelectasis of the lungs) and calomel relieves the condition when given in five-grain (.30) doses for a young child. Ordinarily one-half grain doses (.03) repeated every two hours will suffice.

[A warm mustard bath will often aid in giving relief when tympanites is present, especially if the bath be preceded by a colon flushing with warm water.]

Collapse is treated by warmth to the body and the internal administration of camphor and nitroglycerin.

Conjunctivitis.

In the treatment of chronic catarrhal conjunctivitis, the *Internat. Jour. of Surgery* recommends removal of the cause, the use of glasses to remove the eyestrain. Lachrymal and nasal troubles should be corrected. If atmospheric conditions are the cause a change of climate is recommended. Sometimes the occupation by working in irritating vapors produces this condition. After the cause has been removed the conjunctiva becomes normal, as a rule. In some cases a stimulating astringent is necessary. For this purpose the following combination is recommended:

℞.	Zinci sulphatis	gr. i		06
	Aquæ dest	℥i	30	

M. Sig.: A few drops to be instilled into the eye. Or:

℞.	Acidi borici	gr. xv	1	
	Aquæ dest	℥i	30	

M. Sig.: Use as an eye lotion. Or:

℞.	Acidi tannici	gr. x		65
	Glycerini	℥i	30	

M. Sig.: To be applied locally to the conjunctiva. Or:

℞.	Argenti nitratis	gr. ss		03
	Aquæ dest	℥i	30	

M. Sig.: Apply locally with an applicator.

Other astringents such as copper sulphate or alum may be lightly applied to the everted lid every other day. Ointments of mercury are also of service as follows:

℞.	Ung. hydrarg. oxidi flavi	gr. i		06
	Lanolini	ʒi	4	

M. Ft. unguentum. Sig.: A small piece applied locally to the conjunctiva and light massage given to the closed lid. Or:

℞.	Ung. hydrarg. ammon	gr. i		06
	Lanolini	ʒi	4	

M. Ft. unguentum. Sig.: A small amount to be applied locally.

It is often necessary in these cases to change from one remedy to another in order to obtain the best results. In cases of follicular conjunctivitis the general health and hygienic surroundings of the patient should be inquired into and the patient should, in a way, be quarantined, having a separate bed, bed linen, towels, etc. Internally, iron in some form is of value and locally the astringents used in the chronic catarrhal form are of service. The follicle may be destroyed by expression with the thumb nail or dressing forceps.

Psoriasis.

Shoemaker recommends the following application locally in the treatment of psoriasis:

℞.	Acidi salicylici			
	Sulphuris sublim., āā	ʒi	4	
	Olei eucalypti	ʒss	2	
	Ung. aquæ rosæ	℥i	30	

M. Ft. unguentum. Sig.: Rub a small amount in well on the patches.

Internally, he recommends:

℞.	Creosoti	m. ii		12
	Pepsini (scale)	gr. ii		12

M. Ft. capsulæ No. i. Sig.: One capsule three times a day, after meals.

He also recommends chrysarobin in the treatment of psoriasis. combined as follows:

℞.	Olei cadini	ʒss	2	
	Chrysarobini	gr. xx	1	30
	Ung. zinci oxidi	℥i	30	

M. Ft. unguentum. Sig.: Apply locally to the affected areas.

Erysipelas.

In order to prevent the infection from spreading, Floeckinger, in *Amer. Therapist*, recommends that the border line be painted with pure tincture of iodin. If the point of origin can be located he cauterizes it with pure carbolic acid. He recommends the tinctura ferri chloridi in doses of from 10 to 20 (.65-1.30) minims in glycerin every two or three hours. He also recommends the use of antistreptococcic serum as an injection in doses of 20 c.c., and he repeats the dose in from six to twelve hours, according to the severity of the infection. He regards this line of treatment as the most effective. Abscess formation demands multiple incision.

The *Med. Press* recommends the following combinations in the treatment of erysipelas:

℞.	Guaiacol		
	Tinct. iodi		
	Spts. etheris, āā	ʒi	4
	Menthol	gr. i	06

M. Sig.: Paint the affected surface three or four times a day.

Internally the following may be used:

℞.	Spts. camphoræ	℥i	30
	Aquæ laurocerosi	ʒss	2
	Syrupi simplicis	ʒi	4
	Misturæ amygdalæ	℥iv	120

M. Sig.: One tablespoonful every two hours, followed by a warm drink.

Medicolegal

Conclusions Based on Narrations of Patient.—The Supreme Court of Illinois says, in Stevens vs. People, that, while it is competent to show exclamations indicating pain as being some evidence of pain itself, and to show where the patient locates the seat of his or her suffering, this court knows of no well considered case where it is held competent for the physician to testify that he reached his conclusion or formed his opinion as to the ailment or physical condition of the patient from the cause or history of the injury, ailment or disease as narrated by the patient.

Railroad Company Not Liable for Negligence at Hospital.—The Court of Appeals of Kentucky says, in Illinois Central Railroad Company vs. Buchanan, that the latter party while in the service of the railroad company had his kneecap broken and was sent to the Illinois Central Hospital for treatment. He subsequently brought this action against the railroad company for damages, claiming that while under the care of the physicians and nurses of the hospital he was unskillfully and improperly treated. It was shown, however, that the Illinois Central Hospital Association, which conducted the hospital, was a separate and distinct corporation from the railroad company, although all officers and employes of the railroad company were made members of the corporation, with certain exceptions, and sums which the members were required to pay were collected by the railroad company to pay the expenses of the hospital, and went into the hands of the treasurer of the hospital association, who was also the treasurer of the railroad company. So the court says that the proposition was presented that, because the railroad company simply acted as the agent in the gathering of the funds from its employes for the hospital purposes, it thereby made a contract to be responsible for the conduct of those in control of the hospital. The conclusion reached by the court is that the railroad company was in no way liable for the conduct of the directors of the hospital corporation, or the physicians or the attendants at the hospital. The court says that if the railroad company was the real party at interest, and was simply using the hospital association for its financial profit, then the court might consider whether or not it was a case where it should look at the substance, and not the shadow, of things, in determining its liability. Doubtless the railroad company was indirectly benefited by its employes having proper and humane treatment at the hospital prepared for them, but that incidental benefit could not raise the question suggested, nor make it liable for the act of servant or agent of an independent corporation.

Status Lymphaticus Death During Chloroform.—The Second Appellate Division of the Supreme Court of New York says that the trial judge told the jury in the malpractice case of Wood vs. Wyeth that in a civil case the evidence to establish negligence must be just as strong as that required to establish guilt in a prosecution for manslaughter. No discussion is necessary to show that such is not the law. It is conclusively settled by authority in the state of New York that in a civil case the plaintiff rests only under the burden of proving his case by a preponderance of evidence, and not beyond a reasonable doubt. The law required that the physician, on undertaking treatment of the patient, should possess that reasonable degree of learning and skill ordinarily belonging to a physician and surgeon in the locality in which he practiced, and imposed on him the duty to use reasonable care and diligence in the exercise of his skill and the application of his learning, and to act according to his best judgment. It was conceded on the trial that there was no question as to the physician's learning or skill, so that the only remaining questions were whether he used reasonable care and diligence in the exercise of his skill and the application of his learning to accomplish the purpose for which he was employed, and whether he acted according to his best judgment. If he did, he was not legally responsible for the death of the boy. According to the physician, he found the patient suffering from blood poisoning, which was in danger of becoming general. His temperature was more than 100 degrees, and he knew positively that blood poisoning was going to get into his system. He thereon resolved to operate on the boy that day, to try to save him from this general blood poisoning. He then questioned the patient as to whether he had had any breakfast, and the boy responded that he had had a piece of meat and some bread. He used chloroform as an anesthetic instead of some other agent because he believed it was safe and better for the child, who presented such a bad appearance that the physician did not intrust anybody else to administer the chloroform, but gave it himself. Unfortunately, the chloroform proved fatal, because of a condition of the patient's system described as "status lymphaticus," not discoverable by any physical examination that could have been made before death. The theory of the plaintiff's counsel, as indicated by a question to the witness, was that the boy had eaten a breakfast consisting of a quarter of a pound of pork, a quarter of a pound of ham, four slices of bread, two eggs, and a cup of coffee, only three hours before the operation; but, if this were the fact, there was no evidence, the court says, that the physician was informed of it. The test here applicable to his conduct was not what the patient had actually done in the way of taking food, but what the patient told the physician on that subject. The case, instead of being one of negligence, appeared to be only another melancholy instance of a death on the operating table in a charity hospital of a patient being treated with a high degree of skill and care by a surgeon of unquestioned learning. Such a death is always painful enough to the conscientious surgeon under whose care it occurs, but it can not subject him to any legal liability, where there is no sufficient proof that he was derelict in the performance of his professional duty toward his patient.

Admissibility of Dying Declarations.—The Supreme Court of Illinois says, in Brom vs. People, that the admission of the dying declaration of the deceased in a homicide case forms an exception or qualification to the well-settled rule that secondary or hearsay evidence is not admissible. The reasons usually given in the books for the admission of such declarations are, first, that the solemnity of the occasion under which they are made dispenses with the necessity of an oath; and, secondly, the impossibility in many cases of producing better proof of the homicide makes it necessary that such declarations be admitted in order that those clearly guilty may not escape punishment. Such declarations are made not under oath. There is no opportunity given to cross-examine the party making the same, and the accused is deprived of the right to meet his accuser before the court and jury face to face, and the courts for those reasons are not disposed to extend the rule to embrace cases which do not clearly fall within all its limitations. The cases in which said declarations are admitted have been confined by the courts to cases where the declarations were made by the injured party under the fixed belief and moral conviction that his death was impending and certain to follow almost immediately. The declarant in this case may have been excited from what the physicians told him, and may have thought, from his condition, that he would not get well, and that he might eventually die from the effects of his wounds. That, however, was not sufficient to make the declaration admissible. He must have entertained at the time he signed the declaration a fixed belief and moral conviction that his death was then impending, and certain to follow almost immediately. The question of his belief that his death was impending and certain to follow almost immediately could not alone be determined from what the physician testified he said on that subject on the occasion of signing the instrument, but his acts were to be considered in connection with his words, as well as the circumstances which surrounded him at the time the declaration was signed, in determining what his belief relative to his immediate death was at that time. Furthermore, while the court does not hold that he could not have ratified a statement prepared the previous evening by the state's attorney, so as to have made it his dying declaration, the evidence that he did ratify it after he was impressed with impending death should be of such a character as to satisfy the mind of such ratification beyond any reasonable doubt.

Operation to Improve Appearance After Injury.—The Supreme Court of Oregon says that in the personal injury case of Busch vs. Robinson, where the plaintiff's hand was caught between the rollers of a mangle, a physician, after describing the extent of the injury, and that there was a webbing of the fingers down to the middle joint, testified that the cosmetic effect of the hand would be improved by an operation dividing the fingers again so that the woman could wear a glove; that, while it would probably not improve the usefulness of the hand, it would much improve its appearance; and that the reasonable charges of a surgeon for performing the operation would be about $100. He further testified, over objection, that it would be better for the plaintiff to go to a hospital during the operation and treatment, and that the expense there would be $2 a day for about thirty days. The objection to this testimony was that the expense attending the further treatment of the hand to improve its appearance was not a proper element of damages for the jury's consideration. But the court says that it would seem that the operation or further treatment and the expense attending it would be but the natural and probable result of the injury—as much so, almost, as it was necessary to employ a surgeon in the first instance to secure proper treatment for saving the hand, if possible. It was, therefore, within the rule for the measure of damages.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

August 12.

1 *Conditions Determining Variations in the Energy of Tumor Growths. L. Loeb, Philadelphia.
2 *Infection in Transportation. H. M. Bracken, Minneapolis, Minn.
3 *Diseases of the Heart and Their Treatment: A Synopsis. O. Lerch, New Orleans, La.
4 *Study of Enzyme Action and Its Relation to Human Metabolism and the Development of Tuberculosis. H. E. Lewis, Burlington, Vt.
5 *Anastomosis and Transplantation of Blood Vessels. A. Carrel, Chicago.
6 *Mercuric Chlorid, Intravenously or Intramuscularly, for Epidemic Cerebrospinal Meningitis. R. Hogner, Boston.

1. **Conditions Determining Variations in Energy of Tumor Growths.**—Loeb asserts the rate of tumor growth is not only influenced by the species into which the tumor is transplanted, but also by variations which exist among individuals or families of the same species. Under certain conditions a state of active immunity can be experimentally produced. It can be accomplished more easily with some tumors than with others. The energy of tumor growth can be experimentally increased through successive transplantations up to a certain maximum. It is also possible to cause an experimental decrease in the energy of tumor growth. These variations are caused by a direct stimulating or depressing effect on the tumor cells. Contact metastases may occur, and different tumors which are morphologically similar or identical behave differently in this respect. The greatest care ought to be exercised to prevent a tumor from touching the wound during extirpation. The fact that surgeons operating on tumors do not become infected agrees with the facts found in experimental tumor inoculations. Tumor growth is primarily due to an increased energy of growth of those cells from which the tumor takes its origin; it can not be due to a lowered resistance of the organism in which the cells carry on their apparently unlimited growth. If a tumor can not be successfully inoculated into other animals, it is probably not due to the fact that other animals are more resistant toward the growth of inoculated tumor cells than the animal in which the tumor growth developed originally, but to other causes still unknown.

2.—See abstract in The Journal, May 27, 1905, page 1707.

3. **Diseases of Heart and Their Treatment.**—Lerch emphasizes the fact that health and life depend largely on the equilibrium that exists between arterial and venous pressure. As long as compensation is perfect, no matter what the lesion may be, the patient does not suffer any inconvenience. The object, therefore, of all treatment must be to keep such a compensation or to re-establish it when lost. In patients with a completely broken compensation rest and drugs must be used. As soon as the compensation is re-established mechanical and dietetic treatment must take the place of drugs, and if under its employment the heart again begins to fail, the prognosis is grave.

5. **Anastomosis and Transplantation of Blood Vessels.**—Carrel states that when a segment of artery is removed the circulation may be restored in the peripheral portion by interposing between the cut ends a segment of vein. Experiments on dogs were undertaken with the view of finding a new treatment of aneurism. A segment of carotid or femoral artery was resected. The continuity of the vessel was restored by interposing a segment of jugular or femoral vein. After completion of anastomosis, the peripheral arterial circulation was immediately restored. The anastomosis and the venous wall adequately support the arterial blood pressure. The circulation below the venous segment appears normal.

6. **Mercuric Chlorid in Epidemic Cerebrospinal Meningitis.**—Hogner has found intragluteal injections of mercuric chlorid, twice a day, of great value in the treatment of epidemic cerebrospinal meningitis. He uses: Mercuric chlorid, 2 parts; sodium chlorid, 9 parts; distilled water to 1,000. One to 4 c.c. are used for intravenous or intramuscular injection, once or twice a day. The maximum dose intravenously is 4 c.c. of the solution. Hogner prefers the intravenous injections and he cautions against extravenous injections on account of the bad local effects.

Medical Record, New York.

August 12.

7 *New Method of Orchidopexy. C. Beck, New York.
8 *Dynamics of Dreams. A. E. Gibson, Los Angeles, Cal.
9 *Length of Enteron (Small Intestine). B. Robinson, Chicago.
10 Position of the Bladder in Fibroid of the Uterus. J. A. Schmitt, New York.
11 Dual Genital and Extragenital Chancres—Chancre a Distance. M. L. Heidingsfeld, Cincinnati, Ohio.

7. **New Method of Orchidopexy.**—Beck says that the widespread opinion that a retained testicle will descend from the inguinal canal to the scrotum at the age of puberty is erroneous, and that while it may sometimes occur, he has never seen it do so himself. He, therefore, thinks it unwise to defer surgical action until puberty, owing to the risk of atrophy, and advises operation after the third year, unless there is some contraindication. His method of operating, which he calls the "necktie operation," is essentially as follows: The incision is like the Bassini incision, prolonged downward, and the testicle is lifted from its bed and freed from all adhesions. It is then pulled down into a pocket prepared for it in the scrotum. In order to secure it there, a flap is dissected from the outer margin of the inguinal ring downward, and turned in such a manner that it can be attached to the opposite layer in a semilunar shape. Thus this band surrounds the testicle

like a necktie, the testicle being retained as in a buttonhole. The length of the semilunar flap will be dictated by the greater or lesser extensibility of the cord. The aponeurosis is then united above.

8. **Dynamics of Dreams.**—Gibson presents an exhaustive analysis of the physical and psychical basis of dreams and sums up his views in part as follows: Dream and waking differ in degree and form of manifestation only, not in principle and essence. Like waking consciousness, dream reveals, but does not create. The same world that surrounds the waking individual surrounds the dreamer, only the viewpoints and media of observation are changed. As the life experience of an individual in his waking consciousness receives its character and value by and through his power of response to environment, so in a similar way the value of a dream depends on the power of the ego to respond to consciousness in its various forms of emotions, ideas and feelings which constitute the environments of the subjective or dream plane. Waking or dreaming, the individual is, or becomes, what he chooses to be at any given moment of his existence. The background for ordinary dreams consists of undigested remnants of waking life. Hence, ordinary dreams are merely undigested life, being made up by longings, desires, anticipations, idle hopes and miscarried realizations, which, occupying the mind during the day, are overtaken by sleep before having reached their fruition. Hence the mixture, in most dreams, of the sane and the insane, of truth and delusion. On the other hand, the life lived out and assimilated in a purposeful existence becomes absorbed in the formation of character and leaves no residue to form the bizarre staging for the confused dream. And to such an individual the intuitions of dream life, with their dazzling imagery, will introduce symbols, which, properly interpreted, may carry the significance of prevision or prophecy. Therefore, to turn dreams into useful, intelligent and intelligible factors, we must fill our waking life with deeds and thoughts of universal usefulness, and freight the train of events with an unflinching devotion to duty and virtue.

9. **Length of Enteron.**—Robinson reports the results of measurements made at autopsies on 450 males and 150 females. The average length of the enteron in the males was 23 feet, and in the females was 19 feet. The length of the enteron may be very much modified by local or general disease, especially during childhood, and also by the character of the food consumed. The enteron increases in length most rapidly a few months subsequent to birth, when it may grow one and one-half feet a month, and it assumes its chief length in early childhood. A subject with a maximum length of enteron possesses a stronger constitution than a subject with minimum length, as he can digest and economize more food. The human enteron presents colossal differences as to length (males 11½ feet minimum, 32 feet maximum = 20 feet, and female, 10½ feet minimum, 30 feet maximum = 19½ feet). This variation of 20 feet is almost equal to the length of an average enteron. The enteron varies over double to two and one-half times its length. In adults the relation of the length of the enteron to the body length is as 7.2 to 1. There is a vast difference between the absolute and relative length of the enteron in man. The enteron measured *in situ* is 3 to 6 feet less in length than when extirpated. Different diseases of the enteron may result in elongation or contraction.

Medical News, New York.

August 12.

12 *An Analytical and Clinical Study of Thirty Cases of Ectopic Pregnancy. S. M. Brickner. New York.
13 *Treatment of Chronic Nasal Catarrhs with Sulphur. L. Kolipinski, Washington, D. C.
14 Treatment of the Individual Case in Appendicitis. C. C. Allison, Omaha, Neb.
15 Disease of the Pancreas. O. M. Logenecker, Rosedale, Kan.
16 Malarial Hemoglobinuria. L. A. Greene, Greenville, Fla.
17 The Doctor and the Public School. T. Toepel, Atlanta, Ga.
18 Case of Cervical Spina Bifida—Syringomyelomeningocele with Hydromyelus and Hydrocephalus. D. J. Davis, Chicago.

12. **Analytical Study of Ectopic Pregnancy.**—A clinical study of 30 cases leads Brickner to draw the following conclusions: Sterility does not necessarily precede the development of ectopic pregnancy. If it does exist, its cause is often the same as the cause of abnormal pregnancy. The main characteristic of the bleeding in ectopic gestation is its great irregularity, there being no type. As a general rule it is not profuse. It may be constant or intermittent, and its character or profuseness has no relation to the type of the lesion. A chilly feeling often accompanies the bleeding, and vomiting and nausea often accompany the first flow. The uterine flow has apparently no connection with the death of the fetus. The pain in tubal pregnancy is usually localized over the side of the lesion. It has no definite character; it may be cramplike over the affected tube; it may simulate labor pains; it may be sharp and sudden, or it may be of a bearing-down nature. The pain during a tubal abortion and that concomitant with the presence of a hematosalpinx is usually cramplike. The usual symptoms of pregnancy may be present. They are frequently absent, but their absence does not militate against the possibility or probability of an ectopic pregnancy. Tenderness on palpation of the mass adjacent to the uterus is of great diagnostic value when taken in connection with the history and the other pelvic findings. A rise of temperature between 99 and 100 F., in the absence of signs of infection, is worthy of consideration in the diagnosis. The causative factors of tubal pregnancy are probably numerous. Not one element, but many, may bring about the condition in different instances. It is likely that atavistic tendencies, congenital or acquired anomalies, pelvic inflammations, ovarian and tubal disease, all play a rôle in individual cases; but none of these factors alone is sufficient to explain all cases. There are as yet no definite data by which we can differentiate diagnostically between all the varieties of ectopic gestation. Occasionally this may be done, but it is impossible always to distinguish between an unruptured tube and a tubal mole. A hematocele and a freshly ruptured tube can almost always be differentiated from the other usual lesions.

13. **Treatment of Chronic Nasal Catarrh.**—In treating the several forms of chronic nasal catarrh it is Kolipinski's custom to have the patients seated with head erect and the mouth open. The anterior nasal cavity is exposed with a speculum, the tip of the nose elevated and the sulphur freely and thoroughly blown in with a strong powder blower. This has been properly done when the powder appears from mouth and opposite nostril and an irritative cough results. The treatment is repeated on the other side. The posterior nasal space and naso pharynx may also be treated directly by way of the floor of the nose or fauces. These procedures are not entrusted to the patient unless he is unusually attentive to his own case. They are made two or three times a week for a month, and once a week for the next two months. The local sensations of sulphur are not unpleasant. Occasionally in women it sets up a conjunctival hyperemia when used too profusely or when accidentally blown on the face, and some women complain of nasal irritation and pain; then it is best to use the treatment but once a week. The cases must be selected carefully, those in which there is no other primary nasal disease, deflection, deformity or growth must be treated surgically. This method of treatment has proved of value in simple, chronic, hypertrophic, atrophic and phlegmonous rhinitis; and in simple chronic and hyperplastic nasopharyngitis.

New York Medical Journal.

August 12.

19 Fatal Case of Bacillus Pyocyaneous Septicemia After Surgical Operation. J. B. Roberts, Philadelphia.
20 Adenoids. E. M. Sill, New York.
21 *Significance of Sudden, Severe, Abdominal Pain. E. A. Babler, St. Louis.
22 Tropical Disease of the Angola Highlands. F. C. Wellman, Benguella, West Africa.
23 Reflections at the Majority of a Parchment. W. B. Konkle, Montoursville, Pa.
24 *Unusual Sequel to Kraske's Operation. C. B. Kelsey, New York.
25 Six Lectures on the Diseases of the Blood. J. M. Swan, Philadelphia.

21. **Abdominal Pain.**—Babler urges that every effort be made to ascertain the true cause of any sudden, severe, persistent pain in the abdomen, and cautions against the use of morphin for the purpose of allaying the pain. A complete history of the patient must be secured and a careful examination made. Ascertaining the site of the initial pain is of more diagnostic value than the location of the diffuse pain. Such pain is of grave import and demands immediate investigation.

24. **Unusual Sequel to Kraske's Operation.**—Two years after the operation Kelsey's patient noticed a tumor over the sacrum which gradually increased in size. On examination this tumor proved to be a hernia escaping behind the rectum through the opening into the pelvis made by the old incision.

Boston Medical and Surgical Journal.

August 10.

26 Notes on X-Light. W. Rollins, Boston.
27 Three Cases Illustrating the Practical Importance of Recognizing the Post-Epileptic State. M. Prince, Boston.
28 Remarks on the Present Status of Surgical Treatment of Hepatic Cirrhosis. C. G. Cumston, Boston.
29 *Peroneal Resection as a Means of Correction in Rigid Valgus. C. F. Painter, Boston.

29. **Peroneal Resection in Rigid Valgus.**—Painter reviews the clinical history of valgus, which he divides into three classes of operative cases, and describes the treatment in vogue.

St. Louis Medical Review.

August 12.

30 *Scopolamin-Morphin as an Adjuvant in the Administration of General Anesthesia. M. G. Seelig, St. Louis.

30. **Scopolamin-Morphin as Adjuvant to General Anesthesia.**—The purpose of Seelig's paper is to present a series of 65 general anesthesia administrations, showing that the method used is one that merits recommendation and trial. This series included the following range of cases: Abdominal hysterectomy, 8; vaginal hysterectomy, 6; hernia, 5; plastic operations, 8; operations on the tubes and ovaries, 11; uterine fixations, 6; curettements, 6; hemorrhoids, 3; fistula in ano, 2; thyroidectomy, craniectomy, orchidectomy, appendicectomy, costectomy, nephropexy, tumor of breast, cyst of neck, pelvic abscess, exploratory laparotomy, one each. In every instance the patient received a hypodermic injection of scopolamin hydrobromid, grain 1/100, and morphin, grain 1/6, one half-hour before the administration of the general anesthetic. The general anesthesia was induced by means of the ethyl chlorid-ether sequence administered through the Bennett inhaler. Of these 65 patients only one vomited or retched while on the operating table. Seventy-seven per cent. of the patients did not vomit at all. One-third of the patients that did vomit, vomited only once, and then only from two drams to one ounce of clear mucus. Nausea was never pronounced except in two cases, and vomiting never occurred earlier than two hours after the operation. The advantages of this method are: Lessened amount of anesthetic necessary, absence of salivation, avoidance of the stage of excitement, marked reduction in the liability to vomit, and quiet and freedom from pain after operation.

Lancet-Clinic, Cincinnati.

August 12.

31 Intestinal Obstruction. F. F. Lawrence, Columbus.
32 Prophylaxis and Treatment of Gonorrheal Salpingitis Often Ending in Pyosalpinx. E. Ricketts, Cincinnati.
33 Abortions. J. A. Hall, Cincinnati.

California State Journal of Medicine, San Francisco.

July.

34 A Medicolegal Case. J. L. Asay, Santa Clara.
35 Is the Health of Los Angeles Menaced by Pulmonary Tuberculosis? G. H. Kress Los Angeles.
36 Adams-Stokes Syndrome. H. S. Gordon, Santa Ana.
37 *Use of Hyoscin Hydrobromate in Treatment of Morphin Habit. R. E. Bering, Tulare.
38 Uncinariasis in California. Based on Observation of Sixty-Two Cases. H. Gunn, San Francisco.
39 Adolescence in Girls. F. R. Burnham, San Diego.
40 Practical Method for the Determination of the Defects of the Special Senses in School Children. L. C. Deane, San Francisco.
41 Conveyance of Syphilitic Infection by Medical Men. D. W. Montgomery, San Francisco.
42 Case of Human Glanders. W. F. Cheney, San Francisco.
43 Typhoid Infection of the Hip Joint. S. J. Hunkin, San Francisco.
44 Remote Effects of Typhoid on the Bones and Joints. P. C. H. Pahl, Los Angeles.

37. **Hyoscin Hydrobromate for Morphin Habit.**—Bering advises placing the morphin habitué in a sanitarium where he can be under constant supervision and at the same time is removed from the sympathetic influence of friends. The room should be darkened and should contain as little furniture as possible. The patient must not be left alone a moment during the administration of the hyoscin, nor for the first twenty-four hours after the last dose of hyoscin has been given. The night before beginning treatment a vapor bath is given to secure free action of the skin. Bering also endeavors to secure free elimination of all toxic material from the system, using for this purpose strychnin sulphate in doses ranging from 1/32 to 1/8 grain every two hours, for three or four doses, with calomel, podophyllum, ipecac, etc. Hyoscin is then given in doses ranging from 1/100 grain every hour to 1/400 grain every four hours, until the full physiologic action is secured. From that time on just enough hyoscin should be given to continue this action for a period ranging from thirty to forty hours, when the hyoscin is discontinued, if the patient is free from pain and desire for the drug. If not, the hyoscin is resumed for another twelve or twenty-four hours. If the patient goes to sleep during the administration of the hyoscin no more is given until he awakens. Should the patient at any time show signs of pain, more hyoscin must be given. The action of hyoscin is not the same in any two patients. While it is perfectly safe if used carefully, it is a powerful agent for harm when not so used. Each patient must be closely watched. If a cardiac stimulant is required, Bering gives spartein sulphate in 1/8 to 1/4 grain doses, repeating the dose every four to six hours, as indicated.

Illinois Medical Journal, Springfield.

July.

45 Report of Cases. S. C. Plummer, Chicago.
46 *Indications for Opening the Mastoid Process in Cases of Acute Empyema of the Cells When There Is an Absence of Signs Over the External Surface of the Mastoid. G. E. Shambaugh, Chicago.
48 *Errors in the Diagnosis of Abdominal Troubles. C. U. Collins, Peoria.
49 *Surgical Tuberculosis. W. E. Guthrie, Bloomington.
50 *Tubercular Nephritis—Review of Literature. R. J. Christie, Jr., Quincy.
51 *Prophylaxis of Syphilis. A. Schalek, Chicago.
52 Pathologic Anatomy of Lacerations of the Obstetrical Canal Resulting from Obstetrical Injuries. J. C. Webster, Chicago.
53 Poisoning from Oil of Wintergreen. F. C. Vandervoort, Bloomington.
54 *License and Control of Practice of Medicine in Illinois. G. W. Webster, Chicago.
55 *Intussusception in Infancy and Childhood with Collection of 1,028 Cases with Statistics. J. H. Hess, Chicago.
56 *Important Points in the Technic of Perineal Prostatectomy. A. J. Ochsner, Chicago.

46.—See abstract in The Journal, June 3, 1905, page 1802.

48.—Id., June 3, 1905, page 1801.

49.—Id., June 3, 1905, page 1801.

50.—Id., June 3, 1905, page 1801.

54.—Id., May 27, 1905, page 1705.

55.—Id., June 3, 1905, page 1802.

56.—**Important Points in the Technic of Perineal Prostatectomy.**—The points mentioned by Ochsner are a free exposure of the gland, prevention of hemorrhage, sufficient retraction of the gland to enable keeping it under control during its removal, reduction of traumatism to a minimum, maintaining the continuity of the urethra, establishing good drainage and limiting the time of the operation in order to reduce the amount of shock and to lessen the harmful effects of the anesthetic on the kidneys.

Therapeutic Gazette, Detroit, Mich.

July 15.

57 *Two Additional Cases of Thoracic Aneurism and One of Innominate Aneurism Treated by Wiring and Electrolysis. H. A. Hare.
58 Guaiacol in Treatment of Pneumonia. W. G. Cain, Epping, N. H.
59 Clinical Study of the Relative Actions of Atropin and Homatropin as Cycloplegics. O. Wilkinson, Washington.
60 Points in Palliative Gynecology. W. Krusen, Philadelphia.
61 Cysts of the Pancreas. R. P. McReynolds, Philadelphia.
62 General Practitioner as a Temporary Ophthalmologist. C. P. Franklin, Philadelphia.

57. **Aneurism Treated by Wiring and Electrolysis.**—The first case reported by Hare is that of a woman of 50 suffering from an aneurism involving the superior and posterior portions of the transverse arch of the aorta, including the origin of the large vessels. Gold wire to the amount of eight feet was passed into the sac through an ordinary insulated needle, and the electric current started at 5 milliamperes and gradually increased to 50 milliamperes, was passed through the sac for thirty minutes. Before the operation was completed the patient was relieved of pressure symptoms to some extent, and for several weeks afterward was able to sleep in a reclining posture with perfect comfort. Six months after the operation the growth which had been formed by the operation at the

margin of the clot began to enlarge and death finally occurred, the result of pressure on the trachea combined with exhaustion. At the autopsy the wire was found imbedded in a clot. The second case reported was that of a man who presented a mass which filled the epiclavicular space at the right side near the sternum and passed backward under the sternomastoid muscle. Two feet of gold wire were introduced into the tumor, which proved to be an aneurism, and electrolysis was used, as in the first case, for forty minutes. Two weeks after the operation the area into which the wire had been introduced was firm and devoid of expansile pulsation. Death took place two months later, the result of exhaustion and interference with respiration and deglutition. The aneurism took its origin from the inferior portion of the wall of the innominate artery. The sac was lined with a laminated clot, the interior of which was occupied by a black, rather thick liquid. No trace of the wire could be found in any part of the clot. In the third case, one of aneurism of the thoracic aorta just below its descending portion, nine feet of wire were introduced and the electric current was passed for about three-quarters of an hour. The patient lived four months, dying at the end of that time from pressure and exhaustion. The autopsy revealed an enormous laminated clot filling the entire sac, with the wire coiled in the center of the aneurism, embedded in fibrin, through which the blood had formed a channel. Hare says that it is noteworthy that practically in all these cases the operation was followed by immediate relief of the pressure symptoms, and a diminution in the expansile pulsation of the part operated on. The degree of relief varied very considerably, but all the patients experienced some benefit. Several of them volunteered the information that they felt amply repaid for the operation by the relief which they obtained. In each instance the ultimate death of the patient in no way proved that the operation was at fault. It indicated only that the disease in the blood vessel wall was so extensive that the point of greatest weakness having been reinforced, the vessel then gave way at the margin of the clot, and at a place where operative interference could not well be undertaken. In each instance the operation probably prolonged life. The operation is performed under desperate circumstances, and the fact that it does not produce a permanent cure in every case in no way militates against its employment.

Cleveland Medical Journal.

July.

63 *New Operation for Hernia of the Pelvic Floor (Procedentia.) G. W. Crile, Cleveland.
64 Secondary Effects of Hypertrophy of the Third Tonsil. J. M. Ingersoll, Cleveland.
65 Pyrexia from Mechanical Intestinal Irritation in a Child. G. S. Smith, Cleveland.
66 Rash of Adults Simulating Exanthemata Due to Disturbance of the Digestive Tract. N. Rosewater, Cleveland.

63. **New Operation for Hernia of Pelvic Floor.**—After two complete attempts to correct a complete hernia of the pelvic floor, Crile finally succeeded by performing an operation which he describes as follows: With the patient in the Trendelenburg posture, a median incision of good length was made; approximately one-fourth of the entire abdominal contents were withdrawn from the hernial sac, the pelvic floor steadied and the hernia reduced. The bladder was found well down in this cavity and totally prolapsed. An anteroposterior incision was made across the middle of the floor of the pelvis, dividing the vagina into two lateral halves. The vaginal mucous membrane of the part to be brought through the abdominal incision was removed. The bladder was separated from the vagina for some distance downward. It was then found that the vagina and the floor of the pelvis had been so stretched that they could easily be brought out through the abdominal wound beyond the surface of the skin. After making an incision through the abdominal fascia 4 cm. from the median line on each side, the fibers of the recti were separated and the peritoneum perforated. Each half of the split vagina with the attached uterosacral and uteropelvic ligaments and all the other structures of the floor of the pelvis, together with the round and broad ligaments, were drawn out through these openings on each side of the median incision. While the parts are well up in place so that the top of the incised vagina presented closely against the under surface of the peritoneum, the latter was sutured in this position with plain catgut. The original peritoneal incision, the muscle and the external fascia were then closed, the latter by continuous sutures of chromicized gut, after which the freed ends of the vagina and pelvic floor, which had been drawn up through the lateral openings in the peritoneum, recti and fascia, were united in the middle line by means of chromicized gut. The skin was then closed. The patient made a good recovery from the operation and was discharged in three and one-half weeks. For some time after the operation the patient felt a sensation of dragging on the wound and experienced some pain. This passed away after several months. She has been doing her usual work, and at the present time, more than three years after the operation, there has been no recurrence of the hernia. Crile says the indication for this operation exists only in the cases of complete hernia (procidentia). In the minor degrees of prolapse it would be quite impossible to carry out this technic for want of sufficient length of ligaments and of vagina to reach to the external fascia.

Journal of Cutaneous Diseases, New York.

July.

67 *Varicella Accompanying Herpes Zoster. W. T. Corlett, Cleveland.
68 Case of Acute Malignant Pemphigus (P. Vegetans), with Autopsy Report. O. S. Ormsby, and P. Bassoe, Chicago.
69 Clinical and Microscopic Reports of Dermatologic Cases. L. E. Schmidt, Chicago.

67. **Varicella Accompanying Herpes Zoster.**—Corlett reports 4 cases. The first patient was a woman, aged about 48, who came to see him because of herpes zoster involving the lateral surface of the neck, thence passing over the shoulder and down the arm and the trunk in the vicinity of the left mamma. On the back, chest and extremities were lesions resembling those of varicella. The only conclusion obtainable was that the patient had an attack of herpes zoster occurring simultaneously with varicella. The second patient was a man, aged 44, who had a herpes zoster frontalis with a typical varicella eruption on the chest, arms, legs and back. The third case, a man aged 40, corresponded to the first two. The fourth case, a man, aged 70, had herpes zoster in the area supplied by the second lumbar nerve and a varicella eruption on the trunk and forehead.

Washington Medical Annals.

July.

70 Treatment of Ulcers of the Cornea. S. B. Muncaster, Washington, D. C.
71 *Case of Typhoid with Complications. L. F. Friedrich, Washington.
72 Case of Fibro-Lipoma. J. F. Thompson, Washington.
73 Sporadic Cretinism. I. H. Lamb, Washington.
74 Gastroenterostomy for Non-Malignant Diseases of the Stomach and Duodenum. I. S. Stone, Washington.
75 Case of Porencephalus. G. N. Acker, Washington.
76 Rational Versus Empirical Therapeutics. A. B. Moore, Washington.
77 Two Cases of Goiter with Operations. G. T. Vaughan and A. A. Snyder, Washington.
78 Unusually Large Aortic Aneurism. W. H. Hough, Washington.
79 Uses and Abuses of Pelvic Massage. J. T. Johnson, Washington.
80 Case of Renal Calculi; Operation. J. F. Mitchell, Washington.

71. **Typhoid with Complications.**—The case reported by Friedrich is interesting because of the many and serious complications which developed. The fever was unusually irregular, the temperature often being 103 and 104 for two days, then dropping to normal, again rising, and again falling to normal and even subnormal, continuing thus an erratic course for three weeks, and then, without apparent cause, rapidly rising again. Vomiting was very persistent, the ejected matter containing mucus and bile. The abdominal symptoms were greatly exaggerated. The eruption was very extensive, petechiæ of immense size and varying in color from bright red to dark brown, and extending from the abdomen over the chest and back. A severe diarrhea, alternating with dysentery, developed, and there were many profuse hemorrhages. Jaundice was marked. About the thirtieth day of the disease an acute lobar pneumonia developed. Nephritis, accompanied by cystitis, was one of the most persistent complications. Symptoms of uremia supervened, and marked general convulsions were noted. Suppression of urine, alternating with re-

tention, became most aggravating. The nervous symptoms were severe. Besides convulsions there were delirium and coma, subsultus tendinum, carphology, a marked ataxic condition, and tenderness and hyperesthesia along the spine. There was also extreme deafness. The gastric complications were so severe that no food could be taken by mouth. Herpes labialis was very marked and a facial erysipelas became most annoying. Perforation of the bowel occurred at the end of the third month, and a few days afterward the patient collapsed and died.

Medicine, Detroit, Mich.

July.

81 Nasal Headache. L. S. Somers, Philadelphia.
82 Ocular Headache. W. Reber, Philadelphia.
83 Headaches as a Symptom. William C. Drein, Philadelphia.
84 *Treatment of High Pott's, with Description of a New Celluloid Head Support. C. F. Eikenbary, Chicago.
85 Diseases of the Eye in Relation to the General Practitioner. W. H. Peck, Chicago.
86 Mastoiditis in Typhoid Patients. P. J. H. Farrell, Chicago.
87 Death from Hemorrhage from a Duodenal Ulcer Two Weeks After an Extensive Burn. G. McConnell, Philadelphia.
88 Case of Bilateral Hematobium, with Plates, Showing the Ova of the Parasite. J. M. Anders and A. Callahan, Philadelphia.

84. **New Head Support in High Pott's Disease.**—The brace dtscribed by Eikenbarry is made of celluloid and stockinet, and is so constructed that it accurately fits the body, the neck and the posterior and lateral aspects of the head. By means of the webbing band passing around the forehead the head and neck are immobilized. There are no adjustments to make, nothing to get out of shape and destroy the fit and thus the effectiveness. The brace has also the advantage of being very light, the ordinary jacket weighing not more than a pound. If used for a dorsal or lumbar Pott's, where no headpiece is needed, the weight would not exceed ten or twelve ounces. The jacket is considerably less than a quarter of an inch thick, and is so strong that it easily bears a weight of 150 pounds. An accurately fitting plaster jacket is applied, including the neck and head. This is removed in the usual way by cutting down the front. From this mold a plaster model is cast. The plaster model is shellacked so as to prevent crumbling of the plaster. Over the model successive layers of the stockinet are drawn, each layer in turn being given a rather thick coat of the celluloid solution. Nine or ten layers are quite sufficient. None of the solution should penetrate to the inner side of the inner layer, or to the outer side of the outer layer, so as to have a perfectly smooth jacket inside and out. After applying the last layer, allow the model to set for twenty-four hours, and then trim the jacket before removing from the cast. Cut down the front in the usual way, bind the edges with chamois or cloth, and place a double row of hooks in front. The celluloid solution is made by dissolving chips of celluloid in acetone, about twenty-four hours being required for solution. The solution should have the consistency of cream.

Northwestern Lancet, Minneapolis.

July 15.

89 *Complicated Heart Case and Its Management. S. P. Rees, Minneapolis.
90 Is Physiologic Cupping of the Optic Disc, not Confined to the Center, Evidence of a Morbid Process? E. J. Brown, Minneapolis.
92 Case of Addison's Disease. G. D. Head, Minneapolis.

89. **Complicated Heart Case.**—Rees' patient gave a history of rheumatism which was followed by the development of aortic stenosis and regurgitation, a relative mitral insufficiency and saccular aneurism of the arch and descending portion of the aorta. The arch was very much hypertrophied, the apex being located in the sixth interspace in the midaxillary line. The pulsation in the vessels of the neck was prominent and jerky. A pronounced, continuous thrill was felt extending from the first to the fifth rib on the left of the sternum, and also along the right upper portion of the sternum in the suprasternal notch and in the vessels of the neck. The general health of the patient was good.

Detroit Medical Journal.

July.

93 Medical Supervision of Schools and the Progress of School Hygiene. C. G. Jennings, Detroit.
94 Use of Sterile Water as a Local Anesthetic. L. J. Hurschman, Detroit.
95 *Personal Experience in the Employment of Mechanical Vibration in the Treatment of Rectal Diseases. W. L. Dickinson, Saginaw, Mich.

95.—See abstract in The Journal, July 8, 1905, page 129.

Southern Medicine and Surgery, Chattanooga, Tenn.

July.

96 *Radical Treatment of Certain Rectal Diseases Under Local Anesthesia. A. B. Cooke, Nashville, Tenn.
97 Case of Anemia of Pernicious Type Showing Marked and Rapid Improvement After the Administration of Liquor Potassi Arsenitis. P. A. Sheaff, Philadelphia.
98 Treatment of Neurasthenia. J. A. Hodges, Richmond, Va.
99 Static Electrical Treatment of Neurasthenia. R. W. Miller, Barton Heights, Va.

96.—Id., July 8, 1905, page 129.

Memphis Medical Monthly.

July.

100 Advanced Methods of Infant Feeding. B. C. McMahon, New York.
101 Formalin in the Treatment of Disease of the Rectum, Sigmoid and Colon. J. L. Jelks, Memphis.
102 Quinin in Pernicious Malaria. A. E. Cox, Helena, Ark.
103 Cerebral Forms of Pernicious Malaria. H. L. Sutherland, Rosedale, Miss.
104 Dystocia. D. M. Hall, Memphis.
105 Appendicitis; Necessity for Early Operation. O. L. Williamson, Marianna, Ark.
106 Treatment of Pulmonary Tuberculosis. G. R. Livermore, Memphis.
107 Connell Suture in End-to-End Anastomosis. B. Malone, Memphis.

Pacific Medical Journal, San Francisco.

July.

108 Medicolegal Consideration of Perverts and Inverts. R. W. Shufeldt, San Francisco.
109 Home Modification of Cow's Milk. C. A. Dukes, San Francisco, Cal.

Columbus Medical Journal.

July.

110 Diagnosis and Treatment of Diseases of the Heart. S. Loving, Columbus.
111 Address, Commencement Exercises of the Ohio Medical University. J. W. Wright, Columbus.
112 Cure of Consumption by Feeding the Patient with Subcutaneous Injections of Oil and Its Digestion by the White Globules of the Blood. T. B. Keyes, Chicago.

Mobile Medical and Surgical Journal.

June.

113 Gastroenterostomy. C. Wilson, Birmingham.
114 Puerperal Infection. E. M. Prince, Piper.
115 Puerperal Sepsis. W. W. Harper, Selma.
116 Responsibilities of a Physician in Obstetric Work and How He Should Meet Them. J. G. Palmer, Opelika.
117 Septicemia, Acute Septicopyemia and Recovery. G. H. Fonde, Mobile.

Vermont Medical Monthly, Burlington, Vt.

June 25.

118 Scarlatina vs. Rubella, etc. E. G. Roberts, Fair Haven.
119 Insomnia, with Special Reference to this Condition in Nervous and Mental Diseases. C. G. Andrews, Waterbury.
120 Treatment of Diphtheria. J. W. Estabrook, Brandon.
121 Importance of Vital Statistics. J. W. Jackson, Barre.

Kentucky Medical Journal, Louisville, Ky.

July.

122 Extradural Hemorrhage. G. A. Hendon, Louisville.
123 Utility of Medicine. P. C. Sutphin, Canmer.
124 Tuberculosis—Medical. W. C. Ussery, Paris.
125 Past, Present, and a Glimpse of the Future of Medical Men and Societies of Fleming County. C. R. Garr, Flemingsburg.
126 Chronic Urethritis. J. W. Kincaid, Catlettsburg.
127 Progress of Diseases of the Eye, Ear, Nose and Throat. A. O. Pfingst, Louisville.
128 Progress in Diseases of Nervous System. B. F. Zimmerman, Louisville.

Fort Wayne Medical Journal-Magazine.

July.

129 Electricity in the Diagnosis of Nervous Diseases. G. W. McCaskey, Ft. Wayne.
130 Medical Expert. W. P. Breen, Ft. Wayne.
131 Parovarian Cyst: Sinistro-spiral Twist of Pedicle with Strangulation: Operation: Recovery. D. Van Swerlngen, Ft. Wayne.

Medical Recorder, Shreveport, La.

July.

132 Pericardial Effusions. F. A. Jones, Memphis, Tenn.
133 Substitution of Mild for Stronger Alcoholic Beverages the True Remedy for Intemperance. C. H. Wilkinson, Galveston, Texas.
134 First Aids to the Injured. F. L. Barnes, Trinity, Texas.
135 Ankyloblepharon. Wm. L. Bullard, Columbus, Ga.
136 Bronchopneumonia. T. S. Ragland, Gilmer, Texas.

Journal of Experimental Medicine, New York.

July.

137 Bacteriology of Pertussis, with Special Reference to the Agglutination of the Patient's Blood. M. Wollstein, New York.
138 Presence of Certain Bodies in the Skin and Blister Fluid from Scarlet Fever and Measles. C. W. Field, New York.

139 Possibility of an Antibody for the Tetanophile Receptor of Erythrocytes: A Receptor Study. H. T. Ricketts, Chicago.
140 Comparative Study of Dysentery and Dysentery-like Organisms. J. C. Torrey, New York.

American Practitioner and News, Louisville, Ky.

July.

141 Treatment of Extrauterine Pregnancy (full-grown fetus removed). W H. Wathen, Louisville.
142 Prostate Gland. with Special Consideration of the Treatment of Postoperative Incontinence. D. S. Wilson, Louisville.
143 Traumatic Neurasthenia. C. Weidner, Louisville.
144 Narcolepsy. S. J. Meyers, Louisville.
145 Calcium Oxalate Calculus—Mulberry Calculus. B. Robinson, Chicago.

Southern California Practitioner, Los Angeles, Cal.

July.

146 Origins of Medicine. W. Hutchinson, Portland, Ore.
147 True Nurse. J. R. Haynes, Los Angeles.
148 History of Medicine. J. P. Widney, Los Angeles.
149 Retrospect, Respect, and Prospect. L. J. Huff, Los Angeles.

Louisville Monthly Journal of Medicine and Surgery.

July.

150 Diagnosis and Treatment of Gastric Ulcer. C. G. Lucas, Louisville.
151 Purpura. J. E. Hays, Louisville.
152 Mesenteric Occlusion.G. A. Hendon, Louisville.

Canadian Practitioner and Review, Toronto.

July.

153 Medical Treatment of Exophthalmic Goiter. R. D. Rudolf. Toronto.
154 Surgical Treatment of Exophthalmic Goiter. C. B. Shuttleworth, Toronto.
155 Duty of the Profession and State as Regards the Mental and Physical Care of Improperly Cared for Children. C. J. Hastings, Toronto.
156 Wards in General Hospitals for Acute Nervous and Mental Diseases. C. Meyers, Toronto.
157 Surgery of the Stomach from the Standpoint of the Clinician A. J. Ochsner, Chicago.

Oklahoma News-Journal.

July.

158 President's Address. Oklahoma Medical Society. E. N. Wright, Olney, Ind. Ter.
159 Radical Cure for Hernia. A. L. Blesh, Guthrie, Okla.
160 Insanity. W. W. Rucks, Guthrie, Okla.
161 Cocain in Minor Surgery. J. H. White, Muskogee, Ind. Ter.
162 Treatment of Rheumatism. W. F. Waugh, Chicago.
163 Measles and Some of Its Complications. M. A. Jones, Walters, O. T.
164 Backward Dislocation of Radius and Ulna of Long Standing. Treated by Resection, with Fairly Good Joint. W. M. Turner, Lawton, Okla.

Indiana Medical Journal, Indianapolis, Ind.

July.

166 Progressive Medicine. G. T. McCoy, Columbus, Ind.
167 Ophthalmology in Zurich and Munich. F. A. Morrison, Indianapolis.
168 Institutional Practice. H. Sharp, Jeffersonville, Ind.

Colorado Medicine, Denver.

July.

169 Koch's Tuberculin. Wm. J. Baird, Boulder.
170 Addison's Disease Without Pigmentation. J. N. Hall, Denver.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

1 Medical Education—Past, Present and Future: President's Address, British Medical Association. G. C. Franklin.
2 Medicine, Present and Prospective: Address in Medicine; British Medical Association. H. Mandsley.
3 Ascending Currents in Mucous Canals and Gland Ducts, and Their Influence on Infection; Address in Surgery, British Medical Association. C. J. Bond.

The Lancet, London.

July 29.

4 Medical Education—Past, Present and Future: President's Address. British Medical Association. G. C. Franklin.
5 Medicine, Present and Prospective; Address in Medicine, British Medical Association. H. Maudsley.
6 Ascending Currents in Mucous Canals and Gland Ducts, and Their Influence on Infection; Address in Surgery, British Medical Association. C. J. Bond.
7 *Temporary Fixation of Testis to Thigh. C. B. Keetley.
8 Treatment of Acute Summer Diarrhea in Infants. J. A. Coutts.
9 Analysis of 300 Consecutive Gynecologic Laparotomies. A. H. N. Lewers.
10 *Tuberculous Disease of the Cecum. R. A. Stoney
11 *Rapid Estimation of the Amount of Sugar in Urine. R. T. Williamson.
12 Pulmonary Embolus, Occurring Shortly After Normal Labor. R. J. Waugh.

7. **Fixation of Testes to Thigh.**—Keetley reports on a series of twenty-five patients operated on for undescended testes, the plan of keeping down the testicle after operation being fixation to the thigh, a method devised by the author in 1894. The main incision is made over the inguinal canal and the external ring. Two other skin incisions are made in most cases, one about one and a quarter inches long at the bottom of the scrotum, and another of the same size in the upper and inner part of the thigh adjacent to the scrotal incision. Before cutting the scrotal incision a bed should be made with the finger in the scrotum to receive the testicle and the scrotal incision should divide all the structures down to this bed. Something, either a blunt instrument or a piece of gauze, should be passed through this scrotal aperture immediately, or its different layers will cease to be opposite one another. The thigh incision should expose the fascia lata. The testicles and the cord having been thoroughly freed from everything but the musculo-fibrous bands forming the gubernaculum, which are generally attached to the pillars of the external ring, especially the internal pillar, the gubernaculum is divided as far away as possible from the testicle. A pair of forceps is then passed from below upwards through the hole in the scrotum and the gubernaculum is seized by it and pulled right through the scrotum till it can be seen through the hole in the skin of the scrotum. At the same time the tunica vaginalis should also be pulled down into the scrotum, though it is not absolutely necessary to keep the testicle in its serous bag. The posterior borders of the apertures in the skin of the scrotum and thigh are next united by a continuous silkworm-gut suture left long at both ends. Now the gubernaculum testis is sutured with strong catgut to the fascia lata of the thigh; and, lastly, the original silkworm-gut suture is used to complete the union of the skin apertures in the scrotum and thigh to one another. The patient is sent to bed with his hip flexed, but soon straightens it out himself, thus gradually lengthening a short cord. For a dressing Keetley uses iodoform gauze wrung out in 1 in 2,000 bichlorid solution, the gauze being passed behind the scrotum as well as in front, and over the gauze, salicylate wool. The testicle is left attached to the thigh for five months. The operation is free from complications. The testicle remains permanently near the root of the scrotum.

10. **Tuberculous Disease of Cecum.**—Stoney's patient complained chiefly of pain in the left hip, most marked at night, which traveled down the back of the leg to the ankle. She also had some pains in the stomach, palpitation of the heart, giddiness, headache, and general weakness. Examination showed the hip to be normal, but there was much pain and tenderness on pressure over the spines of the first and second lumbar vertebræ. A large, somewhat irregular tumor was felt in the right iliac fossa. The abdomen was opened, and the cecum removed. Its walls were enormously thickened; the ileocecal valve was closed, and the opening of the appendix was reduced to a minute hole. Microscopic examination of the tissue disclosed a typical tuberculosis.

11. **Rapid Estimation of Sugar in Urine.**—Williamson describes a modification of Gerrard's method. The estimation can be made in a few minutes; only a small amount of urine is required, and the results are sufficiently accurate for most clinical work. The only apparatus required are a test-tube of ordinary size, a small narrow burette and a spirit lamp.

Indian Medical Gazette, Calcutta.

July.

13 *Dysentery in the Prisons of the Madras Presidency. C. F. Fearnside.
14 Dysentery as It Occurs in Jails with Regard to Etiology, Prophylaxis and Treatment. E. Jennings.
15 Relation of Oral Sepsis to Dysentery. F. O'Kinealy.
16 *Etiology of Dysentery, with Notes on Treatment. E. A. C. Matthews.
17 Dysentery: Its Varieties and Causes, Summarized and Criticised with a Note on Treatment and Prevention. A. G. Newell.
18 Use of Izal in Dysentery. F. P. Mackie.
19 Drug Treatment of Dysentery. E. A. R. Newman.
20 Dysentery and Diarrhea Mortality in the Bombay Presidency. W. E. Jennings.
21 *Treatment of Dysentery. B. A. L. Deb.
22 Chemical Process of Sterilizing Water for Drinking Purposes for Use in the Field and at Home. V. B. Nesfield.

13. **Dysentery in Prisons.**—Fearnside reviews the medical history of the prisons in the Madras presidency since 1867 with reference to the rôle dysentery played in the vital statistics. He concludes as follows: 1. Dysentery in the Madras

prisons has accounted for the majority of deaths during the past forty years. 2. Many diseases reported as debility, anasarca, etc., and now not recognized as such, were in reality dysentery. 3. Scarcity of food and bad food predispose to dysentery both outside and inside the jails of the presidency. 4. Impure water has a similar effect, and the obsolete arrangement of the hand delivery of water should be abolished at an early date, taps and shower-baths being introduced. 5. Dysentery being an infectious disease should be treated in an extramural hospital specially built for the purpose. 6. The abolition of the association wards and the introduction of the cellular system is most essential and is an excellent preventive for the spread of any such disease since the person attacked is practicallly segregated, whereas in a barrack this is not so. 7. The abolition of mud banks and the introduction of plank beds, the former being septic and insanitary. 8. Patients who have suffered from dysentery should be kept separate for some time during convalescence as they are dangerous to the community within the prison. 9. The free use of anthelmintics in the treatment of prison dysentery since so many of these individuals harbor internal parasites. 10. Special care, during treatment, should be taken to prevent dysenteric patients receiving food other than that prescribed.

16. **Treatment of Dysentery.**—Matthews washes and dries in the sun the roots and lowest trunks of the ordinary garden geranium. Then he boils one quarter pound in a pint of milk for one hour, adding milk from time to time to make up the pint. This infusion is then strained through fine muslin, and two ounces are given every two hours until the disease is cured, which is usually in from two to six days. Treatment by this drug has several advantages: 1. In most cases, if not prolonged beyond five or six days, it is not necessary to give any other food, the dosage used giving the patient 1¼ pints of milk daily. 2. It is not nauseating; as a rule quickly relieves the nausea and pain in the abdomen, nor is it debilitating. 3. Its action seems to be entirely specific.

21. **Id.**—Deb relates his experience with *Ixora cocenia* in the treatment of acute bloody dysentery. The method of preparation employed was grinding the fresh root on a currystone with a small piece of long pepper and mixing the pulp so produced with water, or by preparing a tincture of 4 ozs. of the root to a pint of proof spirit. The dose of the root was from 10 to 30 grs. two or three times a day and the dose of the tincture from ʒi to ʒiss thrice a day with a few drops of tincture of opium according to the age and constitution and requirements of the patients. Tincture of ixora acts well with or without opium. Tincture of opium or long pepper adds to its efficacy, does no harm and acts promptly. According to Deb, it is not laxative or purgative, nor has it any ecbolic action like ipecac. It is suitable in all cases, especially in the hemorrhagic variety. The effect is noticeable within twenty-four hours after administration of the drug.

Therapie der Gegenwart, Berlin.

23 (XLVI, No. 4.) Erfahrung und Wissenschaft in der inneren Medizin (Experience and science in internal medicine). E. Romberg (Tübingen).
24 *Die Behandlung der Hyperacidität und der Hypersecretion des Magens (stomach). A. Albu (Berlin).
25 Ueber das Lecithin und Bromlecithin. P. Bergell and A. Braunstein.
26 *Nachweis freien Formaldehyds im Blute nach interner Anwendung (in blood after internal use). P. Rosenberg (Berlin.)
27 *Ueber die Heilung der Astasie-Abasie. D. Hammer (Budapest.)
28 Weitere Beobachtungen zur Salicylbehandlung (die intravenöse Injektion). F. Mendel. Id., Th. Brugsch.
29 *Zur Diagnostik und Therapie der Tuberkulose der Mesenterialdrüsen im Kindesalter (of mesenteric glands in children). A. Hecht.
30 *Zur ambulanten Behandlung der Unterschenkelgeschwüre (ambulant treatment of leg ulcers). P. Loele.
31 *Ueber die Behandlung des Erysipels mit Ungt. Credé. W. Born.
32 (XLVI, No. 5.) *Ueber den Einfluss der Aussentemperatur auf die Grösse der Zuckerausscheidung (influence of external temperature on amount of sugar excretion). H. Lüthje (Tübingen).
33 *Zur Verwendung von Wechselstrombädern in der Therapie der Herzkrankheiten (alternating currents in treatment of heart affections). August Laqueur (Berlin).
34 Ueber die Bedeutung der Radium-Emanation und ihre Anwendung (application). A. Braunstein (Moscow).
34½ Fall von therapeutischer Anwendung der Röntgen-Strahlen bei Morbus Addisonii. L. Golubinin (Moscow).
35 Behandlung der spastischen Obstipation. A. Albu (Berlin).
36 *Ueber Cyklotherapie der sexuellen Neurasthenie. P. Fürbringer (Berlin).
37 *Einfluss des Urotropins auf die Entstehung der skariatinösen Nierenentzündung (nephritis). K. Preisich (Budapest).
38 *Ueber Arbeitstherapie (occupation therapy). Otto Veraguth (Zürich).
39 Bemerkungen über Wärmebehandlung von rheumatischen Herzerkrankungen (heat in treatment of heart affections). A. Heermann (Posen).
40 Ein Wort zur Salicyltherapie rheumatischer Erkraukungen. Hans Naumanu.
41 Zur Behandlung des Schnupfens der Säuglinge (coryza in infants). Hecht.

24. **Treatment of Hyperacidity.**—Albu recognizes the following forms of hyperchlorhydria: 1, A purely nervous disturbance of secretion; 2, that accompanying chlorosis; 3, an early stage of peptic ulcer; 4, the expression of a chronic hyperplastic gastritis. The treatment must be primarily dietetic and must not only exclude acid foods, gravies, spices, alcoholics and other irritating materials, but must also provide a detailed diet. The author recommends a vegetable diet in place of the alubuminous diet long considered indispensable, because although albumin combines with HCl, it also increases its secretion. The food must be well cooked and finely divided, if necessary, by putting through a sieve. Starchy foods are well tolerated if made of the finest meal from which the gluten has been practically removed. Fine wheat bread is to be preferred. While coarser vegetables are excluded, fine vegetable purées such as spinach or cauliflower are harmless. Albuminous foods may be taken with the exception of some fatty forms such as goose, pork, bacon, eel, herring, etc. The only fats of value are unsalted butter, milk and cream, and egg fat, because they are so easily emulsified. On account of the favorable action of fat he recommends from 1 to 2 tablespoonfuls of olive oil taken from one to two hours after the principal meals. Cane sugar is well borne by only a few of the patients. Milk, cream, cocoa, chocolate or weak tea may be given if they seem to agree with individuals. Small meals at frequent intervals are best in order to combine quickly the excessive secretion of acid. It is also advisable to eat a little before retiring or on waking, to prevent faintness. In stubborn cases stomach lavage is the best treatment, especially late in the evening, about three hours after the last meal, so as to give an undisturbed night's rest, or, if this is impracticable, in the morning on an empty stomach. The author recommends lavage with water holding in suspension a mixture of magnesium and sodium bicarbonate. To restrain the production of acid he recommends a combination of alkali and belladonna. For constipation he uses vegetable diet, oil, enemata, and an occasional cathartic. Hypersecretion, he states, is usually a complication of gastrectasia, atony, ulcer, hyperchlorhydria, or an independent secretion continuous in Reichmann's disease or intermittent, dependent on disease of the central nervous system. The treatment should depend on the underlying affection. Liquids should be limited in amount. Food should be administered in the form of mush, gruel or purée in small and frequent meals. The milk may be boiled down to half its volume in order to get rid of the useless water, which is even harmful on account of its weight. The choice of nourishment should be exactly like that in hyperchlorhydria, since the latter is always an accompaniment of hypersecretion. Lavage late in the evening serves to remove the excess of secretion and care should be taken to remove all of the fluid introduced.

26. **Free Formaldehyd in the Blood After Internal Use.**—Rosenberg presents experimental evidence that free formaldehyd may exist in the blood to the extent of 0.0775 per cent. after the administration of tablet containing the drug in combination with milk sugar. It is excreted in the urine and in the milk. This quantity, he believes, can act as a disinfectant.

27. **Astasia-Abasia.**—Hammer treats hysterical astasia-abasia (inability to stand or walk) by seclusion in the hospital ward by means of screens that prevent the patient from seeing his neighbors, although he can hear conversation and know what is going on. This fact intensifies the patient's desire to get well and facilitates the other treatment. Suggestion is best carried out in the waking state, as experience has shown this to be more effective than hypnosis. The ex-

ercises are used to suggest a strengthening of the limbs, especially the feet, and emphasis is laid on every sign of improvement. A generous diet, largely milk, is administered. By this method five patients were permanently cured.

29. **Tuberculosis of Mesenteric Glands in Children.**—Hecht relies for diagnosis of tuberculosis of the mesenteric glands on the history, on the tenderness of the abdomen, on the abdominal pains present on both sides, and on the occasional presence of a palpable tumor or tumors. The feces often show the presence of mucus, blood and tubercle bacilli in cases in which there is no diarrhea. The prognosis is by no means hopeless, but treatment must be prolonged, lasting months or even years. If practicable, sea bathing is advisable.

30. **Varicose Ulcers.**—Loele advises the ambulant treatment of leg ulcers because the patients, who usually belong to the lower classes, will not lie abed or enter a hospital while the ulcer is of a size to be easily curable. He uses a modification of Jessner's method, which consists of cleansing the ulcer and its neighborhood with benzine, dusting it with an antiseptic powder and covering it with oiled silk. A roller bandage of cotton 20 cm. wide is then applied over the whole lower third of the leg, including the ankle and the ulcer. Over this an elastic bandage is carefully applied. If applied with sufficient firmness a new dressing need not be applied oftener than once a week. With this treatment an ulcer the size of a dollar should heal in about six weeks.

31. **Treatment of Erysipelas with Crede's Ointment.**—In cases of erysipelas at points where compression by adhesive plaster or collodion can not be applied, as on the neck or chest, Born recommends applying Credé's ointment around the affected area, rubbing the ointment into the tissues with the fingers. The rubbing must be continued on the same part of the skin for thirty minutes, and must be carefully done to avoid hurting the patient. It is repeated on three successive days, and when properly done has been uniformly successful in limiting the spread of the disease. It acts by introducing into the subcutaneous connective tissue enough silver to act as a bactericide in this encircling zone.

32. **External Temperature in Diabetes.**—According to Lüthje's experiments, external cold increases the decomposition of albumin and excretion of sugar in diabetic dogs, with retention of nitrogen. The external temperature should be more carefully regarded in experimental research in diabetes, and failure to do this probably explains some of the discrepancies in the published results. Observations on 4 diabetics from a month to six weeks showed analogous fluctuations in the excretion of sugar, the amount increasing at low temperatures (15 C.) and diminishing at high temperatures. The increase of tolerance thus obtained may be of the greatest practical importance.

33. **Alternating Currents in Treatment of Heart Affections.**—Laqueur has experimented to determine the action of alternating currents (sinusoidal) on the size of the heart, with the result that, with the exception of a case of neurasthenia of the heart complicated with slight dilatation, alternating currents brought about no immediate change in the size of the heart. Permanent diminution in size occurs only occasionally, when dilatation is caused by relaxation, but not when compensating dilatation in case of valvular defect is combined with hypertrophy. Increase of blood pressure is usual but not constant. In contrast to other authors, Laqueur does not consider alternating currents necessarily contraindicated in heart diseases with increased blood pressure. Slowing of the pulse is still less constant, and is probably attributable to the effect of rest. Subjective symptoms, however, are often much improved. Relief of dyspepsia, increase of appetite and better sleep are noticed. The author agrees with Lippert that the chief action of sinusoidal currents consists in the increase of blood pressure, often accompanied by diminution of frequency of the pulse in the energetic stimulation of metabolism, promotion of sleep and increase of the motor energy of the heart and of the other muscles of the body. The indications for this treatment are weakness with dilatation of the heart caused by relaxation of the heart muscle, fatty heart, idiopathic hypertrophy of the heart, and also incipient disease of the myocardium and incipient arteriosclerosis. The author does not agree with Zimmermann. In pronounced arteriosclerosis with increased blood pressure the application of this current is contraindicated as well as in aneurism. For these conditions carbonated baths are preferable. General neurasthenics are not improved, but cases of neurasthenic cardiac weakness without marked general symptoms do well. It is better than Faradism because of its greater uniformity of current. The author prefers the full bath to local applications, but describes an apparatus for local application which he has found to exert a good influence on the heart. The action of alternating currents is twofold: On the one hand the current causes an irritation of the sensory nerves of the skin and by reflex action elicits better heart innervation (increase of blood pressure, more powerful contraction of the heart, and slowing of the pulse). On the other hand, the peculiar muscular contractions which the current elicits exert a certain favorable influence on the circulation. The alternating current baths fail, however, to dilate the blood vessels like the carbonated baths. A current bath is always more of a heart-stimulating than a heart-sparing procedure.

35. **Spastic Constipation.**—Albu emphasizes the fact that the treatment of spastic constipation must be based on an exact knowledge of the character of the affection and of the condition of the patient. As spasm is developed on an atonic basis, everything favoring its development must be avoided, especially massage and cathartics. Treatment must be directed to allaying irritation and should include warm, hot or carbonated baths, hot abdominal compresses, warm oil enemata (250 c.cm. every evening), atropin or belladonna suppositories, and a generous diet, largely vegetable, free from all substances (hulls, seeds, etc.) that might irritate the intestine, prepared so as to be capable of very fine subdivision (bread from very fine wheat flour, vegetables in form of purée, cooked fruits, soups, milk, etc.). Alcohol, spices, cabbage, cucumbers, lettuce, cheese, etc., should be avoided. A further important measure is the daily introduction of well oiled bougies for from 5 to 10 cm. into the rectum, allowing them to remain from ten to fifteen minutes. Rest in bed is to be recommended only in case of much reduced patients, as it tends to increase the atony of the bowel. A Weir Mitchell cure in some cases, however, gives remarkably good results.

36. **The Bicycle in Treatment of Sexual Neurasthenia.**—Fürbinger recommends the bicycle as a healthful exercise in the open air which insures good circulation and sufficient use of the muscles without exhaustion, and rests the brain and nervous system while using the organs of special sense. In sexual neurasthenia impotence is likely to be favorably influenced by the general tonic influence of the sport. Exceptions occur which must be individually treated. Seminal losses are variably affected. A large number of patients are made worse, and these should avoid the wheel. Others are favorably influenced, and in the majority of cases no fear need be entertained that cyclotherapy will originate seminal losses. The prescription of this form of exercise should be in the hands of a physician who is a bicycler himself, and can give suitable advice as to the length of ride, kind of saddle, etc.

37. **Hexamethylenamin for Scarlatinal Nephritis.**—Preisich has tested the method of Widowitz, which consists in the administration of from 0.05 gm. to 0.5 gm. of hexamethylenamin and in 9.16 per cent. of those receiving the drug. The weeks of scarlet fever, with a view to the prevention of nephritis. He administered the drug in 600 cases and compares the results with those observed in 600 other cases similarly treated, except that they did not receive the drug. Nephritis occurred in 13.6 per cent. of the cases without hexamethylenamin and in 9.16 per cent. of those receiving the drug. The course of nephritis was more favorable with the hexamethylenamin than without it. He estimates that under favorable circumstances it is capable of reducing the occurrence of nephritis in scarlet fever by 56 per cent.

38. **Work as a Therapeutic Measure.**—Veraguth emphasizes the psychical origin of neuroses in general and the trend of neurotherapy toward a pure psychotherapy. Of the various forms of psychotherapy, aside from a certain element of confidence which must enter into all treatment, the so-called

"logical" method depends very largely on the physician's personality and the authority which he derives from experience and reputation. The influence of this method is limited by the short time during which the physician can impress himself on the individual patient. In prescribed occupation, the psychotherapist has a powerful aid in controling the mental influences which operate on the patient. Veraguth divides the various occupations which have therapeutic value into the following classes: 1. Work expending muscular energy, of a productive character, such as cabinet-making or gardening. 2. Work of an intellectual character, such as art, literature or science. 3. Work expending muscular energy but unproductive, such as the different sports. 4. Varied employment. As an exercise in art, drawing has obvious advantages as securing better observation and furnishing a pleasant and unusual exercise of the power of expression. Plaster or clay modeling and wood carving have similar advantages. In literary work, productive writing is more efficient than reading. A good suggestion for elderly patients is the recording of their experiences for the benefit of their friends or descendants. Neurasthenia produced by overwork at a monotonous occupation offers the best field for successful occupation therapy. Occupation therapy does not replace the other forms of psychotherapy, especially suggestion, but helps this as well as every other rational treatment. Systematic indications for different kinds of occupation are adaptability to the nature and stage of the disease and to the idiosyncracies of the patients. The greater the variety of work afforded the better. The patient must not be forced but persuaded to work, if he does not himself comprehend its sanitary value. The physician must directly or indirectly control the patient so as to determine exactly the duration of work and rest. He must exhibit a decided personal interest in the work of the patient. Occupation therapy may act by directing the activity of the senses, as in drawing; by physical exercise, as in fencing; by its psychical relief, as in writing memoirs; by strengthening the will; by overcoming the prejudice against work, and especially by diverting the mind from a tendency to become self-centered.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

42 (XXXI, No. 25.) * Die Behandlung des Diabetes melitus. B. Naunyn.
43 Observations on Epidemic Cerebrospinal Meningitis.—Beobachtungen bei Genickstarre. v. Drigalski.
44 Fall von operierter Geschwülst des Rückenmarks (tumor in spinal cord). J. Kron.
45 Nerve Grafting in Spinal Paralysis in Children.—Zur Behandlung der spinalen Kinderlähmung durch Nervenpfropfung. Hackenbruch.
46 Zur Therapie des Scharlachs (scarlet fever). R. Quest.
47 Zur Diagnose und Therapie der chronischen Perityphlitis. A. Albu
48 Zur Färbung der Spirochæte pallida Schaudinn (improved stain). K. Reitmann.
49 Forensic Examination of Semen Spots.—Zur Untersuchung menschlicher Samenflecke für gerichtliche Zwecke. Wederhake.
50 The "Semi-responsibles."—Die sogenannten "Minderwertigen" im Lichte des Plotzenseer Prozesses. W. J. Koenig.

42. **Diabetes.**—Naunyn remarks that diabetes mellitus generally develops in patients with a congenital predisposition, frequently inherited. Cases in which it affects perfectly normal individuals are very rare. The consequence is that not much can be expected from treatment after the disease is once well established in the predisposed patients. It may be improved, but as the tendency persists it is impossible to cure it completely. It is also important to be on the lookout for the initial manifestations in individuals known to be predisposed to this disease. In every disturbance of health in a member of a family in which cases of diabetes have occurred, the urine should be tested as a routine measure, especially in persons inclined to be corpulent, children in particular and, above all, in individuals in whom a tendency to obesity develops suddenly. Even if there be no signs of diabetes, such persons should be supervised with especial care, and physical and intellectual work should be fostered and overeating forbidden. Sweets and beer should be forbidden. Milk, green vegetables and fruits (except the very sweet ones) should be recommended in moderation. Naunyn gives rules for regulating the diet after diabetes is once established, guiding it by the tolerance of the patient determined by continuous oversight of the urine. He has found the occasional interposition of a "hunger day" very useful, allowing nothing but tea and bouillon for twenty-four hours. The effect is remarkable sometimes, but not until the sugar has been reduced to a minimum of a few grams. It then not only banishes the sugar altogether, but raises the limits of tolerance thereafter. A course of dietetic treatment according to his rules requires about two months. Whether such a course can be successfully conducted at home depends on the housewife. In testing the urine he always adds Gerhardt's iron chlorid test for acetic acid. If the reaction is positive acidosis exists, and from 10 to 15 gm. of sodium bicarbonate should be given daily without interfering with the other remedial measures. If the positive reaction grows more and more pronounced, the bicarbonate should be pushed, the patient limited to fruits, milk and bread, and the continuance of the treatment entrusted to a specialist. In regard to special "cures," plums, milk, potato and oatmeal cures, he thinks that their success is due to the fact that so large a proportion of the substance ingested passes through the system unutilized. The "cure" is practically an underfeeding. The apparent tolerance is merely that comparatively little of the diet is assimilated.

Münchener medizinische Wochenschrift.

51 (LII, No. 24.) *Ueber das Vorkommen der Spirochæte pallida bei Syphilis. C. Fraenkel.
52 Physiologic Importance of Great Omentum.—Die phys. Bedeutung des grossen Netzes. L. Heusner.
53 *Die Kastration beim Mamma-Karzinom. E. Michels.
54 Manual Transformation of Face and Frontal Presentation. Zur manuellen Umwandlung der Gesichts- und Stirnlagen. H. Hellendall.
55 Die chronische Oöphoritis. A. Theilhaber.
56 Ueber menstruellen Ikterus. L. Metzger.
57 Tetanie im Puerperium. Gottschalk.
58 Statistischer Beitrag zur gegenwartigen Genickstarreepidemie (cerebrospinal meningitis). Eggebrëcht.
59 Erfahrungen mit Polanos Brutapparat (incubator). Gutbrod.
60 Eine Verbesserung der Milchpumpe (improved breast pump). M. Forest.
61 *Apparatus for Lavage of Intestine in Children.—Ein einfacher Apparat zur Darmspülung in der kinderärztlichen Sprechstunde. E. Fromm.
62 Zur Trachom-Frage. A. Peters.
63 Ueber die agglutinierende Wirkung des Serums von Typhus-Kranken auf Paratyphus-Bazillen, nebst Bemerkungen über makroskopische und mikroskopische Serodiagnostik. Korte and Sternberg.
64 Epidemic of Acute, Recurring Polymositis.—Akute rezidivierende Polymyositis. K. Sick. (Commenced in No. 23.)

51. **Spirochetes in Syphilis.**—Fraenkel's findings corroborated those of the discoverers of the *Spirochæte pallida*. He found it constantly in syphilitic lesions, but never in those of other nature.

53. **Castration in Mammary Cancer.**—Michels records his favorable experiences with oöphorectomy in mammary cancer. He reports three cases in which this operation was performed with good results. The mortality of operations for removal of sound ovaries is small. In 102 cases of which he has cognizance only 6 of the patients succumbed, 3 from exhaustion, 2 from embolism of the lungs and 1 in a maniacal attack.

61. **Apparatus for Lavage of Intestines in Children.**—A tray with open slats is placed slanting in the child's bathtub, which is supplied with a drain tube and faucet at the foot. Fromm has found this arrangement very convenient for office work. In case he has to use the tub again before there is a chance to clean it, a disinfectant solution is poured over the sides of the tub and the tray, and towels laid over the sides and tray protect the next child against infection from his predecessors.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed page 143.

65 *(CXL, No. 4.) Ueber die Mortalität der Diphtherie und des Croup in den grösseren Städten Ungarns mit Rücksicht auf die Serum-Therapie (in Hungarian cities). J. Eröss.
66 Zur chirurgischen Behandlung der Noma. C. Springer.
67 Zur Klinik und Pathogenese des nomatösen Brandes (gangrene). H. Brüning.
68 Measles and "Schweissfriesel" a Special Eruptive Disease.—Ueber Röteln und Schweissfriesel. Hoche.
69 (Nos. 5-6.) "Acid Intoxication" in Chronic Gastrointestinal Affections in Infants.—Zur Frage der "Säurevergiftung" beim chronisch magendarmkranken Säugling. M. Pfaundler.
70 Zur Kenntnis der cerebralen Diplegie des Kindesalters und der Mikrocephalie. J. Ibrahim.
71 *Ueber Butter-Milch. . G. v. Massanek (Budapest).
72 Icterus infectiosus epidemicus im Kindesalter (in children). H. Flesch.

73 Importance of Bacteriologic Examination for Medical Practice.—Bedeutung der bakt. Diphtherie-Untersuchung für die ärztliche Praxis. J. Schœdel.
74 *Zur Aetiologie und Pathogenese der Chorea Minor. B. N. Czerno-Schwarz and R. O. Lunz (Moscow).
75 *Markzellen (Myelozyten) im kindlichen Blute (marrow cells in children's blood). T. Zelenski and T. Cybulski (Cracow).
76 Zur Behandlung skrophulöser Kinder (scrofulous children). A. Keller (Breslau).

71. **Buttermilk in Infant Feeding.**—Massanek has been much pleased with the results of buttermilk in feeding the sick infants in his service. All thrived on it remarkably well, as also healthy children. He gives the details of study of the metabolism in a number of the children taking the buttermilk.

74. **Chorea Minor.**—The conclusions from a study of 96 cases are that there is evidently a close connection between acute articular rheumatism, endocarditis and chorea. The combination was apparent in more than 62 per cent. of the cases described. The attack of rheumatism may run an almost latent course, but its effects on the heart become manifest later.

75. **Marrow Cells in Blood of Children.**—The conclusions of Zelenski's work are, in effect, that the presence of marrow cells in the blood of children is not so significant as formerly imagined. They do not have the same diagnostic importance in children as in adults. When nucleated red corpuscles are found in large numbers, especially megaloblasts and giant forms, this indicates a morbid process in the blood at any age, although experience has failed to demonstrate the existence of the so-called infantile pseudoleukemic anemia as a separate entity.

Gazzetta degli Ospedali, Milan.

Last indexed page 368.

77 (XXVI, No. 61.) Flemmone ligneo postoperativo (woody phlegmon). E. Giuliano.
78 Recommendation of Claudius' Catgut.—Sulla sterilizzazione del catgut. B. Gennaro.
79 *Cura delle ulcere varicose e delle superfici granulanti col metodo di Scott Schley. L. Marchetti.
80 New Methods of Obtaining the Specific Sensitizer in Typhoid Serum.—Nuovi metodi di ricerca della sensibilizzatrice specifica nel siero dei tifosi e nel siero degli animali immunizzati contro il bacillo di Eberth. C. Quadrone.
81 (No. 64.) *Germi latenti(stafilococco piogeni albo) nel circolo sanguigno dell' uomo (latent germs in blood). L. Panichi.
82 *Psychic Disturbances and Ear Affections.—Disturbi psichici ed otopatie. V. Grazzi.
83 (No. 67.) Tuberculoma ulcerato della lingua. G. Ghedini.
84 Le cellule eosinofile nel sangue e nello sputo dei tubercolosi. A. Rizzoli.
85 Foreign Bodies in Ear.—Corpi estranei nell orecchio. A. De Blasi.
86 Sopra alcune reazioni colorate delle alfeidi formica ed acetica. dell' acetone e del benzochinone, e sulle loro probabili applicazione agli studii medicin (color reactions of formaldehyd, etc.) E. Pittarelli.
87 (No. 66.) *Mezzo semplicissimo per sterilizzare in qualche minute ogni catetere (to sterilize a catheter in a few minutes). G. Ingianni.
88 (No. 70.) Rapide diminuzioni dei limiti plessimetrici nella pericardite siero-fibrinoda acuta (rapid reduction of plessimeter findings). G. Ferrari.
89 Puntura esplorativa e massagio nella cura dell' idrocele nel bambini (hydrocele in children). U. A. Betti.
90 Leucemie e sarcomatosi. G. Ghedini.
91 *Semplificazione della tecnica delle iniezioni endovenose di ossigeno · (oxygen intravenously). M. Sciallero.

79. **Boric Acid Treatment of Varicose Ulcers.**—Marchetti has been much gratified by the success of the Scott Schley method of treating varicose ulcers and granulating surfaces, which he has used in 23 cases. Finely pulverized boric acid is scattered copiously over the surface, covered with four thicknesses of fine rubber tissue, extending from 2 to 5 cm. beyond the lesion, and fastened in place with adhesive plaster. Gauze is applied over this and the dressings are left undisturbed for from five days to a week or more. All the extensive lesions healed rapidly, the longest time required being twenty-seven days, in one case of extensive septic ulceration of the leg, with general symptoms. The average for the other cases was from fifteen to twenty days. These results in dispensary patients were truly surprising as such cases are apt to be tedious even with intelligent co-operation on the part of the patient, which can not always be anticipated.

81. **Staphylococci Latent in the Blood.**—Panichi reports two cases from Tizzoni's clinic at Bologna in which a furuncle or phlegmon was followed by the constant finding of the *Staphylococcus pyogenes albus* in the blood during several weeks and months after the individuals were apparently in the best of health. One patient was a gardener of 44 and the other a girl of 16. The latter presented a subcutaneous abscess in the nipple region a few weeks after a diffuse eczema, during which the staphylococcus first had been noted in the blood.

82. **Mental Disturbances and Ear Affections.**—Grazzi read this communication before the Fifth International Congress of Psychology last April at Rome. He has had occasion to observe a number of cases in which mental disturbances occurred in the course of ear affections. Diffuse otosclerosis seems to be most dangerous in this respect. Treatment of the ear affection is liable to improve or to cure the other disturbances, hence the necessity for frequent inspection of the ear by otologists in cases of neuropathy in which the physician has reason to suspect the existence of some ear trouble.

87. **Minute Sterilization of Catheter.**—Ingianni puts the catheter in a urine glass test-tube filled with a saturated solution of sodium sulphate. The tube is lengthened by slipping over it a rubber tube about 30 cm. long by 15 mm. in circumference. A cork with a hole through it and a groove along the side is used to plug the top of the rubber tube. The tube is then held over the flame of an alcohol lamp, and as the water boils in the test-tube the catheter is thoroughly sterilized in a minute or so. The catheter need not extend down to the bottom of the straight test-tube, and the pliant rubber fits its curve without trouble. Tests of catheters thus sterilized by the boiling sodium sulphate and the steam have shown that the results are perfect. If metal catheters are to be sterilized water alone or with sodium carbonate is preferable.

91. **Intravenous Injection of Oxygen.**—Sciallero describes with illustrations a simplified technic for injecting oxygen into the veins. The procedure is so simple that it brings within the reach of everyone, he says, this heroic therapeutic measure which promises good results.

Archiv f. Verdauungs-Krankheiten, Berlin.

Last indexed XLIV, page 508.

92 (XI, No. 1.) *Zur Frage der chemischen Funktionsprüfung des Magens (chemical tests of stomach functions). B. Wagner (Rostock).
93 *Zur Lehre von den Infusorien, die als Parasiten im Verdauungskanale des Menschen vorkommen; ein Fall von Balantidium coli im Darm des Menschen (infusoria in human digestive tract). I. I. Koslowsky (St. Petersburg).
94 *Ueber Ankylostomiasis duodenalis in Japan. Z. Inouye.
95 *Ueber Albumosurie bei Magen-Darmerkrankungen speziell Carcinomen (diseases of stomach and intestine). H. Ury and E: Lilienthal (Berlin).
96 (No. 2.) *Zur Pathogenese der Kolik. H. Nothnagel.
97 *Gefährliche Komplikationen bei Hungerkur des peptischen Magengeschwürs (gastric ulcer). N. Reichmann (Warsaw).
98 Ueber die Bindung des Chlors in der Magenschleimhaut (binding of chlorin in gastric mucosa). F. Dauwe (Gand).
99 Einfache Methoden zur quantitativen Bestimmung der vom Magen ausgeschiedenen Enzyme (estimation of ferments secreted by the stomach). H. Illoway (New York).
100 Fall von Cœcum volvulus. M. Buch (Helsingfors).

92. **Chemical Tests of Stomach Functions.**—Wagner gives the results of examination of the stomach contents in 430 cases, considered in four classes: 1, Diseases in general; 2, organic diseases of stomach; 3, functional stomach diseases; 4, blood diseases. A larger number of men than women were affected with hyperchlorhydria. The large total of cases in which acidity may be classed as normal is especially important, as it amounted to fully one-half. His investigation of patients with ulcer showed 54 per cent. women and 46 per cent. men. Contrary to the rule of Riegel, Wagner found that hyperchlorhydria was present in less than half of the cases of ulcer. Nearly 25 per cent. of all the patients with hyperchlorhydria were affected with ulcer. For a certain diagnosis of ulcer it is sometimes necessary to introduce the stomach tube, and, if done carefully, this can be accomplished with little danger. In order to determine whether free blood be present in the stomach, a test lavage is given by pouring 100 c.cm. of water down the tube as soon as it reaches the middle of the esophagus, the tube being then pushed in without fear and the water removed. Occasionally retching occurs, with a flow of blood, in which case the tube should be immediately removed and the diagnosis considered established. This accident seldom gives rise to any serious consequences. The guaiac test for blood is not only somewhat too delicate for clinical use, but also gives the same results when pus, bile or saliva are mixed with the fluid to be tested, as is often the

case with stomach contents. In spite of this it is a great help in the diagnosis of gastric ulcer and of carcinoma of the esophagus or cardiostenosis, when the stomach contents can not be obtained, or in controlling the progress of healing in case of ulcer. The author found no free HCl in 90 per cent. of his cases of carcinoma. Discovery of blood in the feces of carcinoma patients seems to be of little value, since it was found in but two out of six cases in which the diagnosis of cancer had been definitely established by other means. He divides achylia gastrica into simple and complex, the latter occurring in patients with pernicious anemia. Another blood disease commonly associated with hyperacidity is chlorosis, which is accompanied by an abnormal appetite. Five out of 14 cases were found to have hyperchlorhydria. Wagner concludes that it is difficult to fix a rule for the condition of the stomach contents in certain diseases, but that there are general characteristics which are an important help in diagnosis. The cases in which the proportions of acid are characteristic are few and comprise only organic stomach diseases, namely, ulcer and carcinoma, and blood diseases.

93. **Infusoria as Parasites in Human Digestive Canal.**—Koslowsky mentions 105 cases of *Balantidium coli,* and believes that more occur than are generally recognized owing to the facts that helminthiasis from the feces are so seldom examined, that the parasites decompose readily, and that numbers of cases have not been published. Reports show that this condition usually appears as a complication, especially of intestinal diseases. At the autopsy in 30 and on microscopic examination of the tissues in 9 cases, the pathologic changes were most pronounced in, and generally confined to, the rectum and large intestines. The process was generally limited to catarrh. Long continuance of the affection may cause ulcers reaching through the mucous membrane to the submucosa or muscularis; by confluence these ulcers may attain a diameter of 3 to 4 cm. The parasite was found in all layers of the mucous membrane, even in the lumen of the small veins, but most frequently in the submucosa. His experiments on rabbits and guinea-pigs showed no evidence of infection and pigs could not be infected. He describes his methods of fixing and staining, and the development, degeneration and death of the *Balantidium coli.* He states that it can live in the dead body from ten to seventy-two hours. The embryos may be mistaken for the eggs of *Bothriocephalus latus.* He also mentions two other kinds of ciliated parasites which have been found in the human intestine.

94. **Ankylostomiasis in Japan.**—Inouye states that ankylostomiasis is found in all parts of Japan, most commonly among farmers, since human excrements are used in fertilizing and insufficient care is taken in preparing food. More men than women are affected. The malady begins gradually and may be latent as long as three months. Its severity depends on the number of worms, their length of stay in the intestine, and the resisting power of the patient. The victims are at first affected with vague digestive disturbances, become pale, complain of palpitations, lack of breath, dropsy, anemia and finally die. The local symptoms are pressure and fullness in the epigastrium, intestinal pain, heartburn, nausea and vomiting. The author found no blood or worms in the vomitus, stomatitis is rare, there is increase of saliva, foul breath, solid stools and occasionally diarrhea. The eggs found in the stools by microscopic examination have bright shells and brownish grooved kernels. He does not regard Charcot's crystals in the feces as pathognomonic for ankylostomiasis since they occur with other parasites and are not always present with this worm. The appetite is generally good, but parorexia is often present, the patient wanting peculiar things to eat (pepper, vinegar, raw rice, charcoal, tobacco, plaster or nails). Geophagia was observed only once. Parorexia is proportionate to the grade of anemia. The author finds, in contradistinction to Tanaka, that when the affection is complicated with carcinoma there is less free HCl and the lactic acid reaction is very distinct. Liver enlargement is frequent. It is difficult to decide whether splenic enlargement is due to the worms or to complicating disease. Inouye attributes a diagnostic significance to eosinophilia. He notes the changes in the nails as characteristic. They become yellowish, brittle, parchment-like and tear easily lengthwise. The surface shows wavy projections and furrows and the nails curve backward. These changes disappear with the expulsion of the worm, and they are proportional to the anemia. Various nervous symptoms and even epileptic attacks are liable to occur. He found the knee-jerk normal. He holds that the anemia can not be explained simply as a result of hemorrhage, and with many other Japanese authors adheres to the toxic theory of anemia. The following precautions should be taken for prophylaxis: Disinfection of feces with milk of lime, careful disinfection of materials used as fertilizers, avoidance of raw vegetables in the diet or of eating with soiled hands in the fields, or drinking polluted water. Two remedies are recommended for the expulsion of the worm: Oil of male fern and thymol. The first should be administered with the following precautions. The dose must not exceed 5 gm.; castor oil must not be given with the fern oil, and the latter should not be given for several days in succession. Ankylostomiasis must always be treated in a hospital, and as soon as the patient complains of pain in the eyes, disturbances of vision or dilatation of the pupils, the treatment must be suspended. He thinks that thymol is to be preferred and recommends it in doses of from 2 to 3 gm. (grs. xxx to xlv) on an empty stomach, followed after some hours by a cathartic (castor oil); this treatment is repeated daily until all worms have been expelled. Symptoms of poisoning which occasionally arise usually disappear when the treatment is temporarily suspended, fail to reappear when it is recommenced. The thymol treatment is often somewhat dangerous in advanced cases because of the temporary increase of debility.

95. **Albumosuria.**—Ury and Lilienthal have examined 40 cases of carcinoma for albumosuria and conclude as follows: 1. Two-thirds of all cases of carcinoma show a positive albumose reaction in the urine, although it varies greatly at different times in the same case. 2. Albumosuria is occasionally found in rare cases of benign stomach or intestinal affections. 3. Maixner's theory that albumose is generated in the intestines seems quite improbable. It probably originates in the tissues. Albumosuria may be absent, however, in far advanced, decomposing cases of carcinoma. 4. The discovery of albumose in the urine has no positive significance for diagnosis of cancer of the intestinal tract, but repeated positive results may confirm the presence of malignant disease. 5. Albumosuria frequently appears to be present in febrile cases.

96. **Pathogenesis of Colic.**—Nothnagel discusses the views of Meltzer, Wilms and Lennander in regard to colic, and concludes that the original term colic, should be retained for intestinal pain of a special kind in relation to its pathogenesis and clincal form. This pain arises in the intestine itself. A tetanic contraction of the intestinal musculature is effective as a primary factor in its origin. This contraction leads to ischemia, or even anemia, of the intestinal wall, by pressure on the blood vessels and thus produces the pain. How far this theory of colic may be applied to other organs provided with smooth muscular fiber is not discussed, but the author believes it to be true in regard to colic of the bladder.

97. **Dangerous Complications in Starvation Treatment of Peptic Ulcer.**—Reichmann calls attention to two dangerous complications in the treatment of peptic gastric ulcer: Loss of strength and disturbance of the heart's action which may necessitate abandonment of the treatment, and purulent parotitis, of which he has seen three cases during twelve years, one of which terminated fatally. The probable cause is the entrance of bacteria from the mouth into the parotid ducts. This is due to lack of mastication, which prevents the flow of saliva and cleansing of the mucous membrane and ducts. This complication can be prevented by applying a 4 per cent. solution of boric acid with a swab to the surface of the mucous membrane, especially that of the cheeks. The starvation treatment need not be abandoned because of these dangers, as with care these complications can be avoided.

Hospitalstidende, Copenhagen.

Last indexed XLIV, page 1819.

101 (XLVIII, No. 12.) *Treatment of Diplo-bacillus Conjunctivitis.—Diplobackonjunktivitis og dens Behandling. K. K. K. Lundsgaard.

102 (No. 13.) Improved Fan-shaped Spatula.—En vifteformet Laparotomie-spatel. P. K. Faber. (Rovsing's clinic, Copenhagen).
103 Alcohol as Cause of Increase of Crime and Mental Affections.—Om Alkohol som Aarsag til Forbrydelse og Sindssygdom. F. Hallager.
104 (No. 15.) *Milk Diet in Chronic Tropical Diarrhea. Maelkediaet ved Kron. Tropediarré "Sprue.".
105 (Nos. 16-17.) *Research on Infantile Marasmus.—Undersögelse over Borneatrofien. C. E. Bloch.
106 (Nos. 18-20.) *Om kronisk Parotitis. A. Lendorf.
107 Alcohol Mortality.—Alkoboldodelighed. G. Poulsen.
108 Case of Leukemic Hemorrhages in Internal Ear.—Tilfaelde af leuk. Blodninger i det indre Ore. A. Kock.
109 (No. 21.) *Om Extra-systole. H. I. Bing.
110 Om Gonokok-farvning (staining). A. Bronnum.
111 (No. 22.) *Indikationer og Kontraindikationer for Nefrektomi, saerligt ved Nyre-tuberkulose (of kidney). T. Rovsing.

101. **Diplobacillus Conjunctivitis.**—Lundsgaard describes the course of this conjunctivitis, which seems to be quite prevalent in Denmark. It is usually suggested by the characteristic redness of the caruncle and the margins of the eyelids, but bacteriologic examination is necessary for differentiation from ordinary epiphora or phlyctenular conjunctivitis, which it is liable to simulate at times. A 2.5 per cent. solution of zinc sulphate generally cures, but some cases do better with a zinc salve or yellow ointment.

104. **Milk Diet in Tropical Diarrhea.**—Vogelius treated a patient who had just returned from the tropics with obstinate diarrhea by putting him on a strict milk diet after failure of other attempts to disinfect the intestines. Less than a quart was allowed at first and he rapidly improved, taking two quarts and then three quarts a day, gradually resuming a mixed diet as health returned.

105. **Infantile Marasmus.**—Bloch relates the particulars of 3 more cases of general atrophy in children, which, added to those he has previously reported, makes 6 cases. In 3 cases he noted during life and at the autopsy evidences of gastric hypochylia and in the 3 others evidences of pancreatic achylia. The secreting cells of the pancreas were found empty in some of the cases; in others Lieberkühns glands were unmistakably defective. In the former group, the symptoms during life had suggested insufficiency of the pancreas. The article is accompanied by two plates and the various pathologic anatomic findings are described in detail.

106. **Chronic Parotitis.**—Lendorf reports 2 cases in which a supposed tumor in the parotid gland was found on exploratory incision to be a chronic interstitial inflammation. No calculi were found in Steno's duct nor stenosis, and the inflammation subsided under local measures—extirpation of the circumscribed mass in one case and mere fomentations in the other, with potassium iodid internally. A few similar cases are on record. Chronic parotitis may be of toxic origin, or due to syphilis, tuberculosis or actinomycosis, or secondary to calculi, sialorrhea, or a foreign body, or it may be apparently primary, as in the cases related, and may simulate a tumor.

109. **Extra Systole.**—Bing describes 4 cases of this affection in which it was the only sign of heart affection. It was probably of nervous origin in one case and secondary to diphtheria in the others.

111. **Indications and Contraindications for Nephrectomy.**—This article was read by Rovsing to open the discussion on this subject at the German Congress of Surgery last April. It is based on his experiences with 112 nephrectomies. Since 1901 the mortality in 33 cases in which the kidney had been removed on account of tuberculosis was only 3 per cent.; in 13 malignant tumors the mortality was zero, as also in 5 of hydronephrosis and pyelonephritis. In 7 cases of pyonephrosis the mortality amounted to 14.2 per cent. The mortality for these groups in the nine years before 1901 had been respectively 14.2 per cent. in 14 cases of tuberculosis and 27 per cent. in 18 malignant tumors. He thinks that the assumption, when the proportion of urea is very small, is not justified by the facts. He performed nephrectomy—notwithstanding the very low proportion of urea—in 31 out of his 112 nephrectomies, and only two of the patients succumbed to anuria. The findings with cryoscopy were frequently misleading. In 12 out of the 50 cases in which he tested the freezing point the findings were absolutely false in 12 instances, as for example, normal values with unmistakable Bright's disease. He does not accept cryoscopy, the phloridzin test nor determination of the proportion of urea as very accurate tests of kidney functioning, the last named being the most reliable. Catheterization of the ureters, with bacteriologic and chemical tests of the urine affords valuable information. If he finds bacteria, albumin and pus in the urine from the other kidney he waits until these are cured before removing its mate. But if albumin alone is found, then he performs nephrectomy, convinced that the albuminuria is of toxic origin, regardless of whether this assumption is confirmed by the freezing point or phloridzin tests or not.

Hygiea, Stockholm.

Last indexed XLIV, page 1498.

112 (LXVII, Nos. 2-3.) *Importance of Manual Compression of Aorta in Post-partum Hemorrhages.—Betydelsen af manuell aortakompression vid blödningar i efterbördsstadiet. H. Suber.
113 Treatment of Suppurative processes in the Cornea.—Om behandlingen af suppurativa processer i hornhinnan. J. Holmström.
114 Obstetric Paralysis.—Om under forlössning uppkommen armplexus-forlämning hos fostret. E. Bovin.
115 (No. 4.) Microscopic Examination of Secretions in Supervision of Prostitutes.—Den mikr. undersokningen af sekreten vid prostitutionsbesiktningen. M. Möller.
116 New Insane Asylum.—En ny anstalt for sinnessjuka. G. Schuldheis.
117 Climatology.—General Karakteristik af Klimaterne og deres Indikationer. I. C. Holm.
118 (Nos. 5-6.) Studier ofver eksem och impetigo contagiosa. L. Moberg.
119 *Surgical Treatment of Non-suppurative Pericarditis with Effusion.—Om den kirurgiska behandlingen af den exsudativa, icke variga hjertsäcksinflammationen. S. Sjövall.
120 Till uterus-inversions kasuistik. K. Dablgren.
121 Treatment with Bier's Artificial Hyperemia.—Sjukdomars behandling med konstgjord hyperemi enligt Bier. E. Beckman.
122 Disturbances in Orientation.—Om vilsegaende. D. Andersson.
123 Should the Gall Bladder be Removed or Retained in the Ordinary Operations for Gallstones?—Bor gallblasan aflagsnas eller bibehallas, etc. J. Borelius.

112. **Manual Compression of Aorta for Postpartum Hemorrhage.**—Suber's experiences with 6 cases and another observed in Bissmark's care, has convinced him of the great efficacy of this means of arresting or preventing hemorrhage. He thinks it should be adopted as a routine measure in all severe or dangerous hemorrhages and when there is uncertainty in regard to the cause of the hemorrhage. Also in case of intervention liable to be accompanied by hemorrhage, especially when there has been much loss of blood previously. A further indication is to gain time for aseptic and rational measures to arrest the hemorrhage in some other way. It is also indicated when the uterus reacts feebly or not at all to mechanical procedures, and when the circumstances forbid further loss of blood. It also renders it possible to postpone an intervention until conditions are more favorable for its success. He adds that compression of the aorta is liable to prove extremely important also in hemorrhage from inversion or rupture of the uterus or from abortion or mole.

119. **Surgical Treatment of Pericarditis with Effusion.**—Sjövall's communication may be summarized in the advice to operate at once in every case of pericarditis with effusion, not suppurative. The intervention should be pericardotomy, preferably Ollier's technic. The accumulation of the effusion impedes the action of the heart, and its removal is a necessity, as he shows by relating his experience with two patients, each 16 years old, both restored to health by simple pericardotomy. In one pericarditis had followed acute articular rheumatism.

Books Received

A MANUAL OF CLINICAL CHEMISTRY, MICROSCOPY AND BACTERIOLOGY. M. Klopstock and A. Kowarsky of Berlin. Translated by T. Wright, M.D. Cloth. Pp. 296. With 132 Illustrations, 70 in colors. Price, $2.25. New York: Rebman Co., 1905.

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Address

STUDIES OF SCHOOL AND HOSPITAL HYGIENE OF INTEREST TO THE OPHTHALMIC SURGEON.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON OPHTHALMOLOGY, AT THE FIFTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, PORTLAND, ORE., JULY 11-14, 1905.

CHRISTIAN R. HOLMES, M.D.

CINCINNATI.

It is, perhaps, unnecessary to remind the members of this Association of the amazing expansion of all human activities in this country in the past few years. The increase in population, the activities of the new centers of industry, and the awakening of the older and more settled parts of the country are little short of the marvellous. Hand in hand with industrial development and the pursuit of pleasure have gone the humanitarian and the scientific spirit, and we find that a very respectable proportion of our efforts of to-day are given to the building of new schools, colleges and hospitals. As a people we are slowly awakening to the importance of properly lighting, heating and ventilating these new buildings in accordance with scientific laws.

We no longer take old buildings and try to remodel them so as to make them resemble what a school, college or hospital should be, but every community that realizes the necessity for new institutions of this character is making an earnest effort to have them constructed on the latest and most approved principles and is installing in them new devices for making them convenient for the purposes for which they are built and comfortable and sanitary for the human beings who are to live or to work in them.

The object of and the justification for the modern refinement of specialization is to promote efficiency. Schools, colleges, hospitals and asylums are becoming specialized. It is obvious that for the highest efficiency in its own particular line each of this class of buildings must have its own peculiarities of construction and equipment. This subject is so varied and vast that in a brief paper like this I can do no more than merely call your attention to a few points of importance relating to light, heat and ventilation.

The sanitarian, of course, includes in his province a multitude of subjects, but we can consider that our greatest concern is with the three subjects just mentioned. The problem of the lighting of school houses is comparatively an easy matter. A law has been laid down that we all recognize as one that can not be broken without disaster to the children's eyes. It is well expressed by Dr. Risley in one clear-cut sentence: "It is the duty of the architect to secure in his plan all the window surface possible consistent with safety of construction."

Cohn places the proportion of this window surface to floor space at not less than thirty square inches of glass to each square foot of floor space, or about one to five: but the effort should always be made to exceed this proportion, and, indeed, we are told of one instance in which the proportion is one to one. Again, for obvious reasons, it is perfectly evident from what direction the light should fall on the desks of the pupils—they should face a blank wall of neutral tint, and abundant light should be admitted from the left or left and rear, so that the writing hand should cast no shadows on the writing surface. This is the law of the school house, and it is for us to express ourselves so unequivocally and so constantly that neither the architects nor school committees will dare to violate it.

We have to-day in the United States about 16,000,000 pupils in the various schools and colleges. It is unfortunately a well-known fact that a fairly large percentage of these begin to deteriorate physically soon after entering school life, and a certain proportion of these are brought to the notice of the oculist on account of a progressive myopia. Out of 30,095 children examined in the schools of Cleveland in 1899-1900, 20 per cent. were found to have defective sight, and in Indianapolis out of 25,696 pupils examined 8,166, or 32 per cent. were trying to do school work with defective vision. Of course, only a portion of these were myopes, and we never have attained, and probably never will attain, the unfavorable figures of the German schools, which, according to their own scientists, were largely due to the use of the old "black letter" type; but, while it is possible that prolonged use of the eyes in study even under favorable conditions of light and good hygienic surroundings would produce a certain amount of myopia in some subjects, yet there is not the slightest doubt but that poor light, improperly proportioned desks and seats, resulting in faulty positions of the pupil and lowered vitality because of impure air due to faulty ventilation, are the agents most responsible for the large percentage of the myopia that we find in America to-day.

I heartily agree with Dr. Risley in his proposal that our schools should introduce a modified curriculum adapted to the physical capabilities of those scholars whose eyes may be defective or who may otherwise be in feeble health. Their hours of eye and brain work should be cut down or so distributed through the day or interspersed with hours of exercise and recreation as not to become a strain that a weak eye or a weak body would feel as a burden. For this reason also competitive examinations for this class of pupils—if not for all classes—should be abolished, and the scholar should be graded by the efficiency of his daily work, and not by the results attained by excessive and prolonged work at annual or semi-annual intervals. Injury to the eyes and to the general health is, unfortunately, a not infrequent result of this "cramming for examination."

The lighting of hospitals, however, can not be governed by any one hard and fast rule. We can always stand safely on the decision that sunlight and brilliant, diffused daylight are curative agents of the first rank, demanding free admission through generous window space to the wards of a hospital, and general wards should be as well lighted as any school room, so that physicians and nurses shall at all times be able to see their patients even from a distance and to observe minutely the color and texture of the skin and the expression of the face and be able to read in all parts of the ward the labels on boxes and bottles and the scale of the thermometer. There often arises, on the other hand, the urgent necessity for the exclusion of all or part of the light. There should be provided for all medical, surgical and neurologic wards small wards or rooms which can be partially or totally darkened, for light is a stimulus and conditions not infrequently arise, e. g., lead encephalopathy, traumatic meningitis and chorea major, in which all external stimuli must be reduced to the minimum. In ophthalmology, of course, this is of paramount importance. The eye is the terminal of one of the largest, most sensitive and most important nerves in the body, and its whole mechanism, nervous, vascular and muscular, responds with the greatest sensitiveness and delicacy to the stimulus of light. In almost all conditions of irritation or inflammation, therefore, we must be able to temper or banish the light at will.

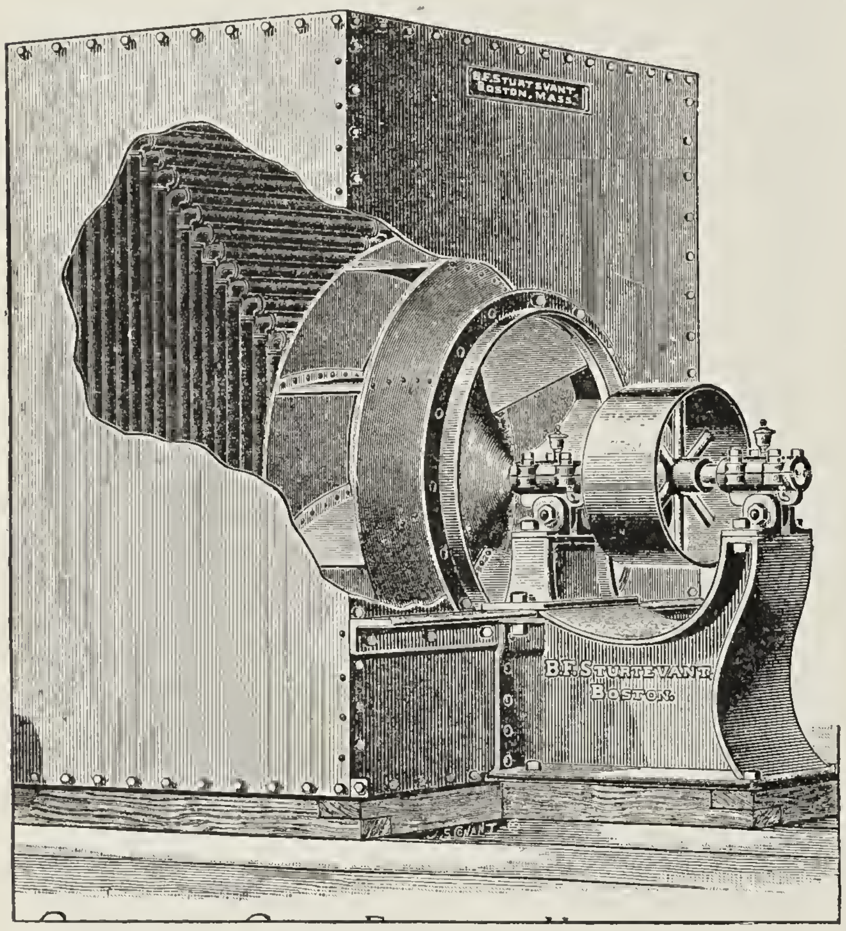
B.F. STURTEVANT BOSTON, MASS.
B.F. STURTEVANT BOSTON.

Figure 1.

In this connection it is necessary to consider the question of artificial light. This is not difficult as far as the operating room is concerned. In my own operating room, I have found it necessary to adopt the incandescent electric light as a permanent source of illumination. In the midst of a great manufacturing city where bituminous coal is universally used it is impossible to depend on the varying quality and quantity of daylight, so that, now being thoroughly familiar with the appearance and colors of tissues under the electric light, I exclude daylight altogether—even on bright days—and employ electricity exclusively.

A much more difficult problem than the admission of light is the induction of air into a building. To give you something of an idea of what an important question this is both from the standpoint of mechanical engineering and of administrative expense, let me rehearse to you a few figures from the calculations of one of our foremost experts on ventilation. After quoting the results of Pettenkofer's experiments on respiration, he says: "Able authorities are of the opinion that when the CO_2 is maintained at 2/10000 in excess of what is found in the outer air, that it (the ventilation) is at least good; in which case there will have to be admitted 3,000 cubic feet of fresh air per person per hour while in repose, 4,500 cubic feet for persons at gentle exercise, and 9,000 cubic feet for persons at hard work." This certainly seems to be a liberal standard to maintain, and the best authorities now seem to think it is ample in cold climates in winter, as the cost of ventilation must enter into the question, particularly when a great number of persons have to be provided for in comparatively restricted space, such as hospitals, schools, etc. It is customary in hospitals to provide for a minimum admission of 3,000 cubic feet of air per bed per hour, with mechanical means of increasing the admission to 6,000 cubic feet of air per bed per hour when it is deemed necessary. This amount of air seems to cover the contingencies and insure a standard in which the excess CO_2 will be about 2/10000.

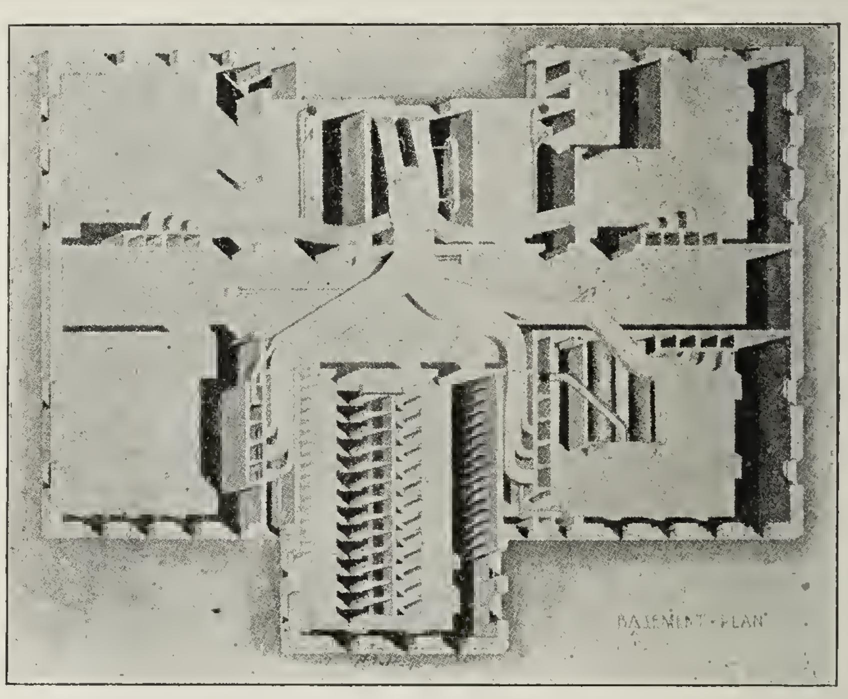

Figure 2.

In passing, I would beg to remind you that the amount of carbonic acid present in the atmosphere may be readily ascertained to a sufficiently close degree for practical purposes in the following manner: Six clean, dry and well-stoppered bottles of a capacity, respectively, of 100, 200, 250, 300, 350 and 400 c.c., a glass tube containing exactly 15 c.c. to a given mark and a bottle of perfectly clear, fresh lime water constitute the apparatus required. The bottles should be filled by means of a hand ball syringe with the atmosphere to be examined. Add to the smallest bottle 15 c.c. of the lime water, put in the cork and shake well. If turbidity appears, the amount of CO_2 will be at least 16 parts in 10,000. If no turbidity appears treat the bottle of 200 c.c. in the same manner. Turbidity in this would indicate 12 parts in 10,000. In similar manner turbidity in the 250 c.c. bottle indicates at least 10 parts in 10,000; in the 300 c.c., 8 parts; in the 350, 7 parts, and in the 400, less than 6 parts.

Taking this minimum of 3,000 cubic feet of fresh air per hour per bed and applying it to a 36-bed ward of a hospital we will find that we will need to pass through the ward 108,000 feet of air every hour and 2,592,000 every twenty-four hours. Now, as to the cost of this. The engineer quoted above says: "With coal at $5 a ton of 2,000 pounds (a fair average for the whole United States), it will require 20 cents per hour for fuel to maintain the warmth of every one million cubic feet of air passed through a building, taking one day with another throughout the winter. In the case of hospitals in which the heating is to be maintained day and night, say, through 180 days of a year, the fuel for the same time will be $864 for every 1,000,000 cubic feet of air passed in an hour throughout the season. This, of course, does not include interest on the plant, labor, service, etc., which increases it to about $2,000 per season per million cubic feet of fresh air passed into the building every hour. As the plant grows larger this can be reduced to probably $1,500 per year for each additional million cubic feet of air admitted per hour. This estimate will be considerably modified in the case of schools, as, of course, schools are not run continually. The fuel cost per hour, however, will remain about the same (20 cents for each million cubic feet of air passed through the building). An eight-room school will require about 1,000,000 cubic feet per hour during sessions, for all purposes, increasing at about the ratio of 100,000 cubic feet of air per room as the school building becomes larger.

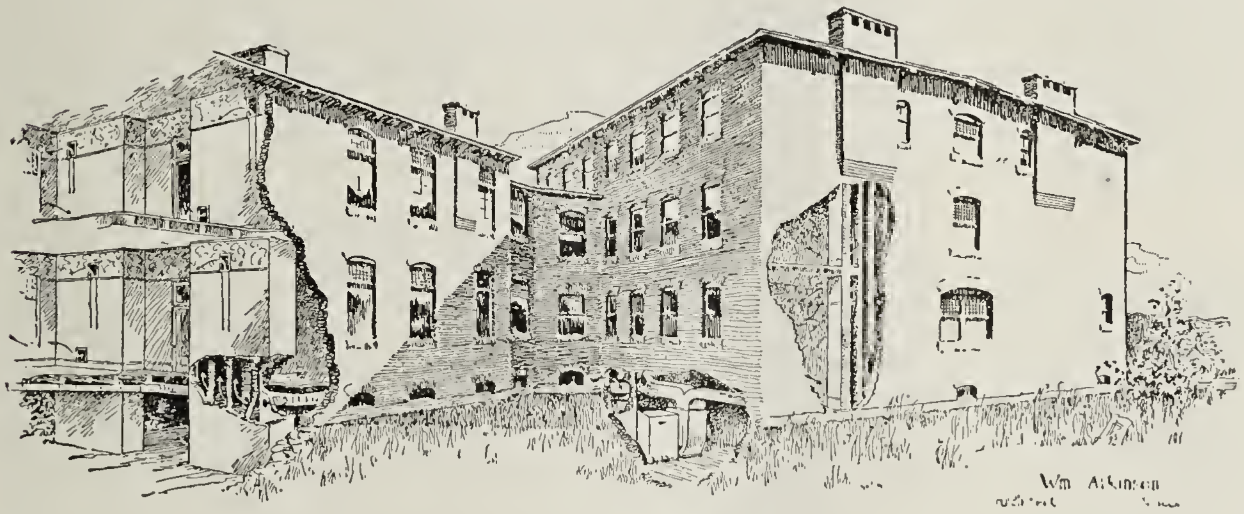

Figure 3.*

For the purpose of ready comparison of the hospital and school-house problem, I might say that the school room as now designed is about 24 by 32 feet and intended for the accommodation of from 40 to 50 pupils. You will see, therefore, that under what is known as the Massachusetts standard, which provides for the admission of 1,800 cubic feet of air per hour per child in the schools (without regard to weight), the amount of air necessary for admission to the average school room per hour should be about 100,000 feet. The Massachusetts standard was formerly much higher than this, but it was found that to make all the existing buildings comply with the proper standard would necessitate the practical reconstruction of every building devoted to school purposes in the state, so that the commonwealth had to make a compromise between its conscience and its pocket book, reduce its requirements and impose only such conditions as what is known as a "reasonable economy" would allow. As we build in the future let us be more generous both with money and air space.

It is hardly necessary to argue to this body of surgeons that generous ventilation of hospitals is necessary —in fact, indispensable—but such a striking illustration of this fact has lately come to my attention, confirming previous experiences of my own both in my own hospital and in the Municipal Hospital of Cincinnati, that I can not forbear to mention it to you. Dr. E. C. Rosenow[1] made an exhaustive and painstaking report on "Streptococci in Air of Hospital Operating Rooms and Wards During an Epidemic of Tonsillitis," and by microscopic examinations and culture experiments by the method of exposed plates demonstrated the existence of the same organisms in the tonsils of those attacked by the angina in the air of the wards and operating rooms and in the infected peritoneal cavities of women who had been subjected to laparotomy during the progress of the epidemic. Dr. Rosenow's paper is well worth the careful perusal of all of us who work in or have to do with the construction and management of hospitals. Broadly speaking, there are two principal methods of ventilation in use in hospitals and schools. One of these is the aspiration system, in which the vitiated air is sucked out of the building through vents which are warmed sufficiently to create a draught out of each room or ward through them, the aspirated air being replaced in the building by fresh air which is brought in through ducts and warmed or not by steam or hot water radiators, as may be required by the season.

The other system is that of the "blower" or "forced draught" system, which is divided into the "exhaust method," where a fan is employed to exhaust the air from the building, and the "plenum method," where a fan is employed to drive the air into the building. It will be observed that the principles of the "exhaust method" and of the "aspiration system" are the same, except that the means for aspirating the air from the building are in one case thermal and in the other mechanical.

We will, therefore, take up first a system that is now being installed in a very large number of our schools, libraries, churches, factories, and theaters throughout the country, observe with some minuteness its method, and then consider the theoretical and practical objections to its use. The name of the system, "plenum"—meaning full—implies that the air of the ventilated building is to be kept somewhat under pressure—that the air is to be forced through. A large open window or air intake is left in the wall of the building, the fresh air enters here, is caught by the fan, which is the mechanical factor of the "draught" system, and is blown across a system of heaters and water pans (Fig. 1) and thence into a system of flues or heaters which carry this warmed and moistened air to the various rooms of the building (Fig. 2), entering them through the openings in the walls about 8 feet above the floor. From thence it is taken, still under pressure (for the doors and windows are all kept shut), into vents or foul-air shafts which conduct the vitiated air from the room at the floor level (Fig. 3). This is the reason why this system is frequently known as the "down draught" system—because the air enters the rooms at a comparatively high level and leaves at a low level, the draught being, therefore, down.

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* Fig. 3.—Waltham Hospital, showing shafts in the walls and heaters and vents in the wards. "The wing on the right in the illustration is divided into numerous small wards and nurses' rooms so that the method of distribution becomes similar to that provided for an office building or dwelling. Owing to the fact that the building is of so-called mill construction with no heavy internal partition walls, it was necessary to supply practically all of the fresh air and to remove the foul air through flues built into the exterior brick walls. The general arrangement of these flues on one end of the building is indicated. In the other wing are located two wards, one on either floor, and both of considerable size. These are heated from overhead outlets, as indicated. The air is forced toward the end of the room farthest from these outlets, being generally diffused in its passage and finally escaping through registers at floor level and nearly beneath the supply openings. In more complicated arrangements, and particularly in contagious wards, the system may be arranged to furnish practically every bed with an independent supply."

[1] American Journal of Obstetrics, December, 1904.

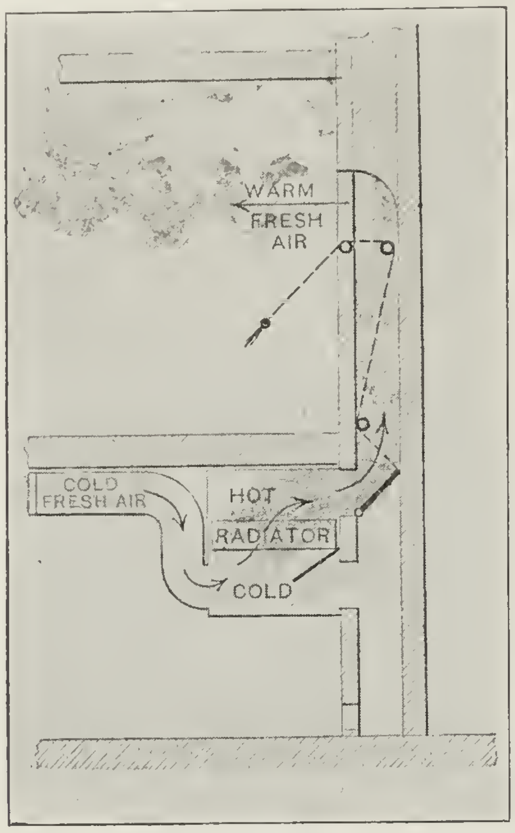


Figure 4.

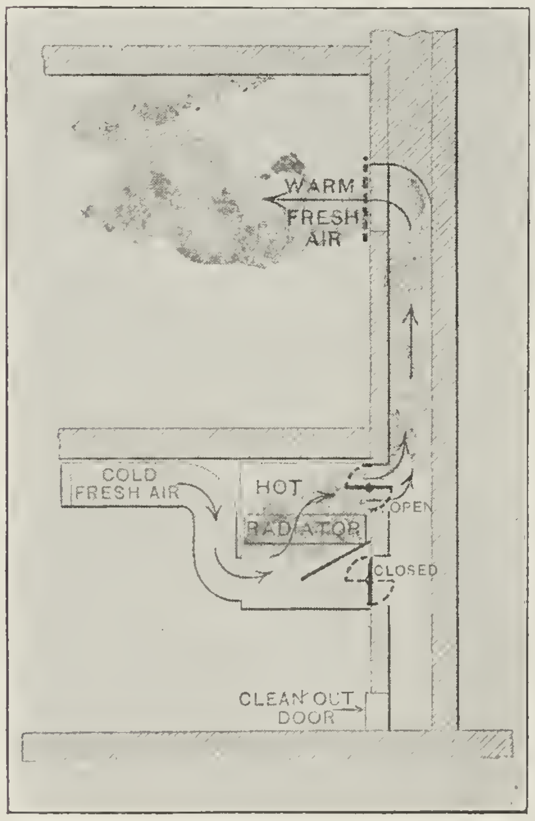


Figure 5.

The varying exposures of the rooms of a school or other building similarly occupied require that more heat shall be supplied to some than to others. With a constant and equal volume of air supply to each room, it is evident that its temperature must be directly proportional to the cooling influences within and around the room, and that no building of this character is properly heated and ventilated where the temperature can not be varied without affecting the air supply. To this end, air of a given temperature may be conducted to the base of each flue and there tempered to a degree suitable to the requirements of the room supplied. The air is heated to the maximum required to maintain the desired temperature in the most exposed rooms, while variety in temperature of air supplied to the other rooms is secured by mixing with the hot air a sufficient volume of cold air at the bases of the respective flues. Here is placed a mixing damper—so designed as to admit either a full volume of hot air, a full volume of cold air or to mix them in any desired proportion without affecting the resulting total volume delivered to the room—the damper should be operated by a thermostat in the room with which the flue connects.

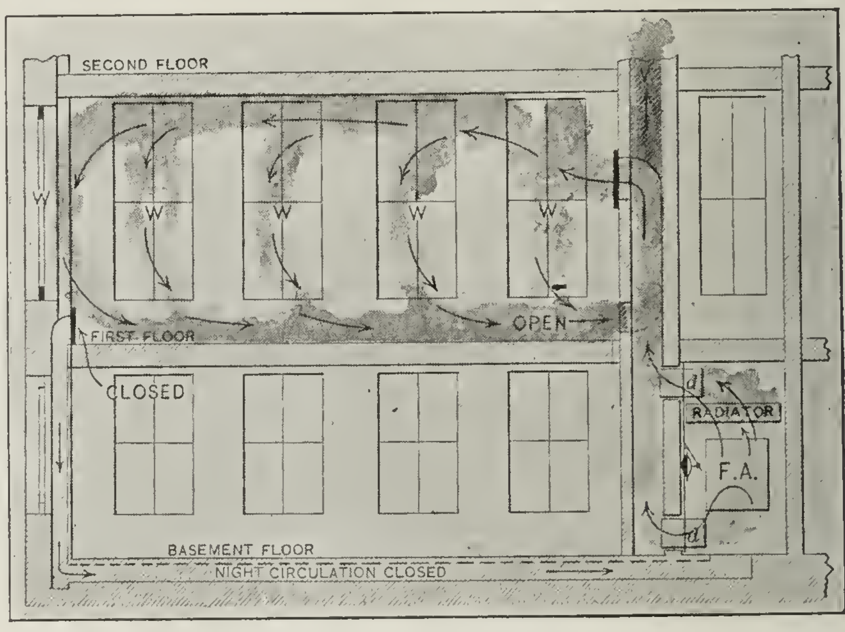


Figure 6.

Being familiar now with the mechanical arrangements of this system, you will readily comprehend the theory of its working. The warm air, as it leaves the register is supposed to rise to the ceiling, expand, and flow out under it, strike the windows on the sides of the room, cool and sink to the floor, and then, under the pressure of the incoming air to return along the floor to the outlet on the same side of the room as the register. In this estimate of the movement of the air, it is held that each child in the school room and each patient in the hospital ward is also a factor in setting up air currents which rise from about the warm body and from the warm lungs to the ceiling, spread to the walls with their contained windows, become cooled at the cool window panes, and sink to the floor to be withdrawn through the vents. One engineer who is evidently a warm advocate of this system says in discussing this point in connection with school rooms: "It may be said that the child is breathing the floor air which is passed to the ceiling over its body, and this is to a great extent true; but it is utterly impracticable to bring fresh air directly to the lungs of each child in a crowded room and therefore all that can be done is to secure a dilution or standard of purity which is reasonably good." (Figs. 7, 8 and 9.) It may be said in conclusion of this part of our subject that those who most favor this system say that the whole matter can not be better expressed than in the words of the late Robert Briggs of the American Society of Civil Engineers in an address on the superiority of forced ventilation:

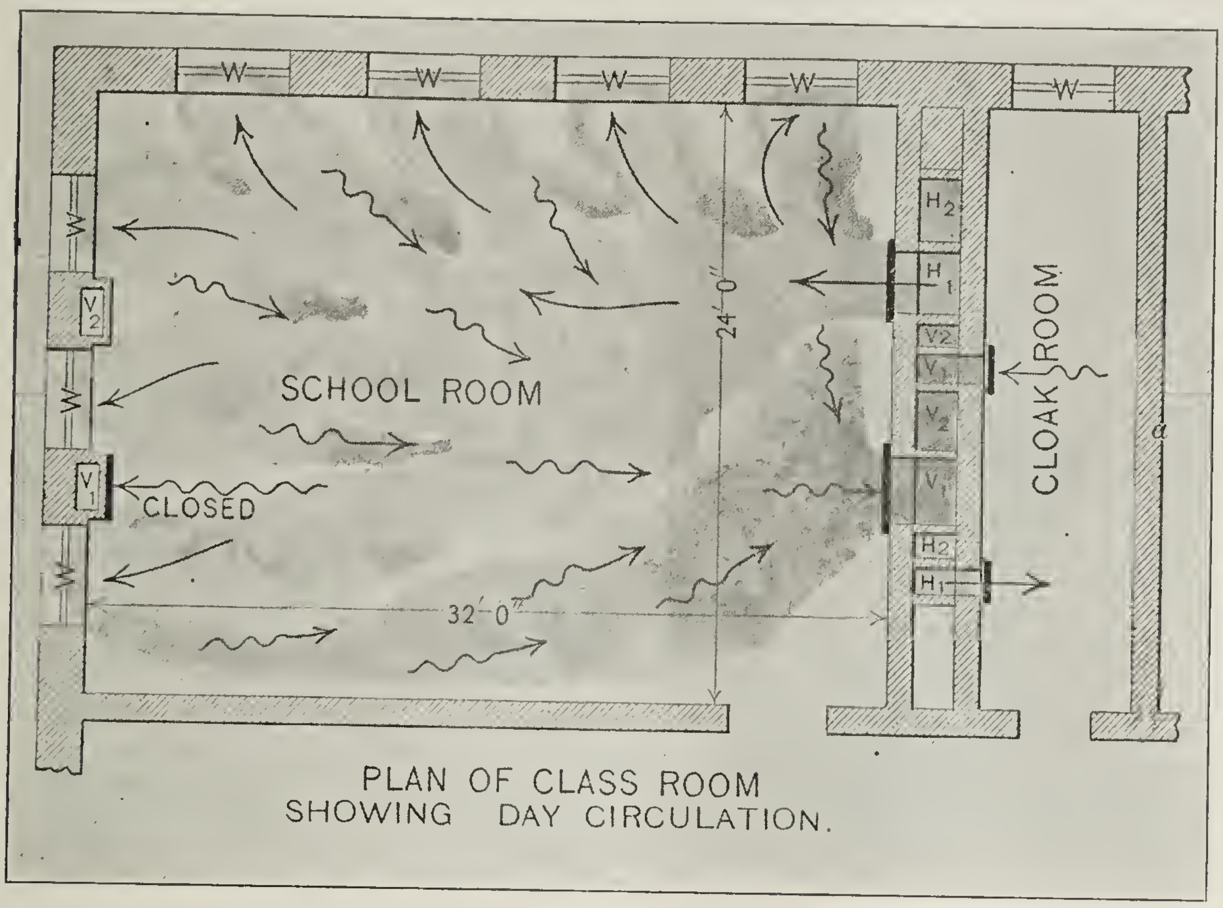


Figure 7.

> This mooted question will be found to have been discussed, argued and combated on all sides in numerous publications, but the conclusion of all is that if air is wanted in any particular place, at any particular time, it must be put there, not allowed to go. Other methods will give results at certain times or seasons or under certain conditions. One method will work perfectly with certain differences of internal and external temperatures, while another method succeeds only when other differences exist. One method reaches to relative success whenever a wind can render a cowl efficient. Another method remains perfect as a system, if no malicious person opens a door or window. No other method than that of impelling air by direct means with a fan is equally independent of accidental natural conditions, equally efficient for a desired result or equally controllable to suit the demands of those who are ventilated.

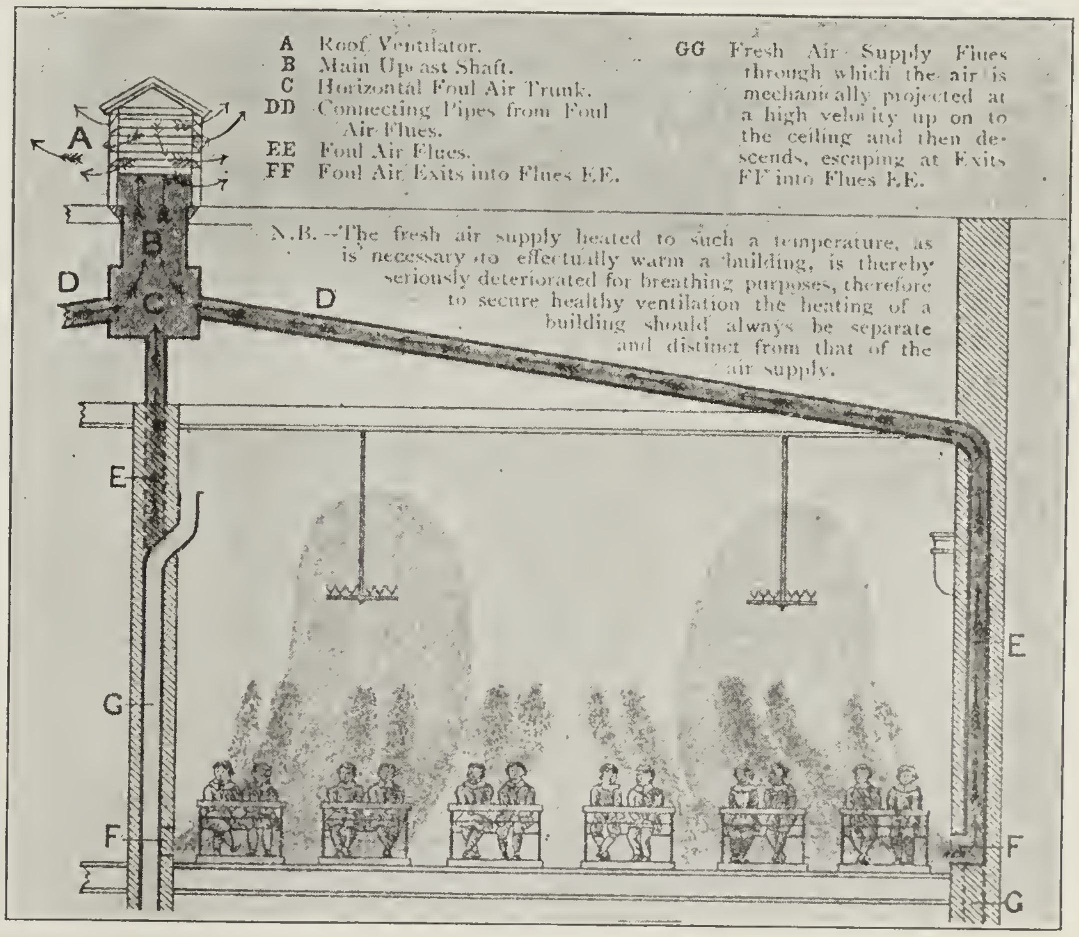

A Roof Ventilator.
B Main Upcast Shaft.
C Horizontal Foul Air Trunk.
DD Connecting Pipes from Foul Air Flues.
EE Foul Air Flues.
FF Foul Air Exits into Flues E.E.
GG Fresh Air Supply Flues through which the air is mechanically projected at a high velocity up on to the ceiling and then descends, escaping at Exits FF into Flues E.E.
N.B.—The fresh air supply heated to such a temperature, as is necessary to effectually warm a building, is thereby seriously deteriorated for breathing purposes, therefore to secure healthy ventilation the heating of a building should always be separate and distinct from that of the air supply.
A
B
C
D
D
E
E
G
F
F
G

Figure 8.

Having now examined the plenum or down draught system, let us consider some of the theoretical objections to its use and endeavor, if we can, to see how it has worked in practice in the types of building that are the subject of our study.

The most elaborate report that I have been able to find on the subject is that of the Woodbridge Commission on the ventilation of the Capitol at Washington. Among other things they say:

> The relative merit of the upward versus the downward systems of ventilation may be estimated from the following considerations:
>
> 1. The direction of the currents of air from the human body is, under ordinary conditions, upward, owing to the heat of the body. This current is an assistance to upward and an obstacle to downward ventilation.
>
> 2. The heat from all gas flames used for lighting tends to assist upward ventilation, but elaborate arrangements must be made to prevent contamination of the air by the lights if the downward method be adopted.
>
> 3. In large rooms an enormous quantity of air must be introduced in the downward method if the occupants are to breathe pure fresh air, or about three times the amount which is found to give satisfactory results with the upward method. (Figs. 10 and 11.)
>
> 4. In halls arranged with galleries the difficulty of so arranging downward currents that, on the one hand, the air rendered impure in the galleries shall not contaminate that which is descending to supply that main floor below, and on the other hand, the supply for the floor shall not be drawn aside to the galleries, is so great that it is almost an impossibility to effect it.
>
> Perfect ventilation can not be obtained, for this would only provide for the dilution of the impure air, while in perfect ventilation the impurities are not so diluted, but completely removed as fast as formed, so that no man can inspire any air which has shortly before been in his own lungs or in those of his neighbor. For these and other reasons the board thinks that the upward method should be preferred.

The argument that because carbonic acid gas is 52 per cent. heavier than air it is therefore desirable to ventilate by a downward current in a room, rather than an upward one can not be considered a valid one for the very apt reason that Woodbridge gives:

The carbonic acid gas yielded by respiration from the lungs and transpiration through the skin is as thoroughly diffused in the warm air currents rising from the body as is the same gas made by a candle or gas flame in the air currents ascending from those flames. That gas when once diffused in air can, because heavier than air, no more settle downward out of the air and occupy the lower stratum of a room, than the salt, because heavier than water, can settle out of the sea to its bottom. Carbonic acid tests made of the air in two theaters and a music hall in Boston with upward ventilation clearly show air of remarkable purtransition from that purity to impurity at a ity at the floor or breathing plane and a quick plane at the balcony level, and a further vitiation at the gallery level.

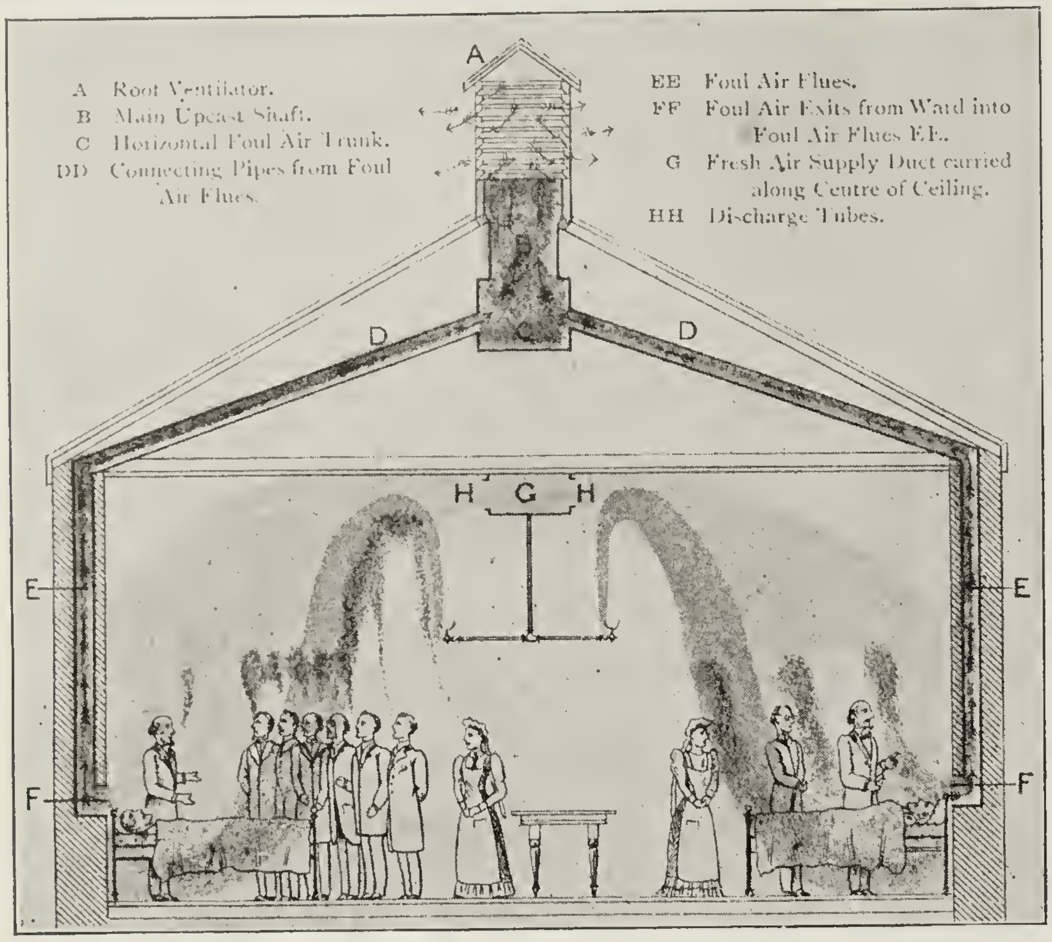

A Roof Ventilator.
B Main Upcast Shaft.
C Horizontal Foul Air Trunk.
DD Connecting Pipes from Foul Air Flues.
EE Foul Air Flues.
FF Foul Air Exits from Ward into Foul Air Flues EE.
G Fresh Air Supply Duct carried along Centre of Ceiling.
HH Discharge Tubes.
A
C
D
D
H
G
H
E
E
F
F

Figure 9.

In case of a crowded theater, samples of air taken near the close of a performance showed the proportion of CO_2 at the floor to average about 4.7 to 10,000; in the balcony, 7.8 to 10,000, and in the gallery, 9.9 to 11 to 10,000; the outside air gave 4.4 to 10,000.

In regard to the mechanical problem involved, the opponents of the "plenum" system urge, and with apparent justice, that the air quantity supplied must be larger for downward ventilation than for upward, because the air brought to the floor by a slowly descending movement of air must inevitably bring back on the breathers the currents of vitiated air which ascend from them. The heat yielded by the body, being nearly that given off by a burning candle, is sufficient to raise 30 cubic feet of air per minute through 10 per cent. temperature. The air in contact with the body or clothing or expelled from the lungs, made moist and warm by the body's heat and vapor, rises in a current which has a far more rapid rate of upward movement than any descending rate which can possibly be given to the mass of air ventilating a hall.

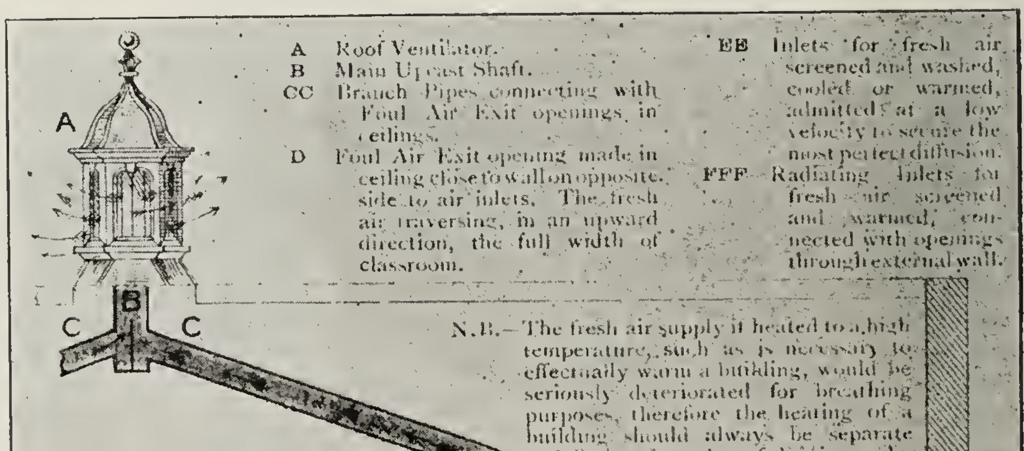

A Roof Ventilator.
B Main Upcast Shaft.
CC Branch Pipes connecting with Foul Air Exit openings in ceilings.
D Foul Air Exit opening made in ceiling close to wall on opposite side to air inlets. The fresh air traversing, in an upward direction, the full width of classroom.
EE Inlets for fresh air screened and washed, cooled or warmed, admitted at a low velocity to secure the most perfect diffusion.
FFF Radiating Inlets for fresh air screened and warmed, connected with openings through external wall.
N.B.—The fresh air supply if heated to a high temperature, such as is necessary to effectually warm a building, would be seriously deteriorated for breathing purposes, therefore the heating of a building should always be separate and distinct from that of the air supply.
A
B
C
C
D
E
E
F
F
F

Figure 10.

The air breathed by floor occupants must, therefore, necessarily be that of the ascending currents of vitiated air reversed by and diluted in the descending mass of air used in the downward movement. The inferior quality of air in downward ventilation can be made good only by considerably increasing the air supply, which is done, according to R. H. Smith, by supplying per hour between 30 and 200 times as much air as is actually inhaled by the inmates of the room.

Figures 8 to 12 have been prepared by Robert Boyle, a famous English ventilating engineer, an avowed opponent of the plenum system; that they fairly represent the actual conditions in a hospital or school room can be believed on theoretical grounds. I find in one of the treatises in advocacy of the plenum system the following significant admission:

> The point of discharge should be at least eight feet above the floor and the air movement should be directed toward the outside walls. The ventilation register should be in the same inner wall as the supply opening, but close to the floor. There is thus induced toward this outlet a return flow of the air in a well distributed mass. The currents are in reality stratified, the lower one serving to take up the emanations from the lungs of the occupants as it sweeps slowly across them directly toward the ventilating register. (Fig. 12.)

So much for the theoretical objections to the "forced draught" or "down draught" system. I have observed in my reading on the forced draught system that not only it is sometimes necessary to supplement its heating powers by the addition of a direct radiation system, but one of its advocates, in discussing the fresh air supply, makes the following admission:

In hospitals, from a theoretical standpoint, too much air can not be supplied—in practice it frequently runs up to 100 cubic feet per minute and over. In the hospital of moderate size the plenum system will meet all requirements, but under certain circumstances in more complicated structures, it becomes desirable to assist its action by exhaust fans.

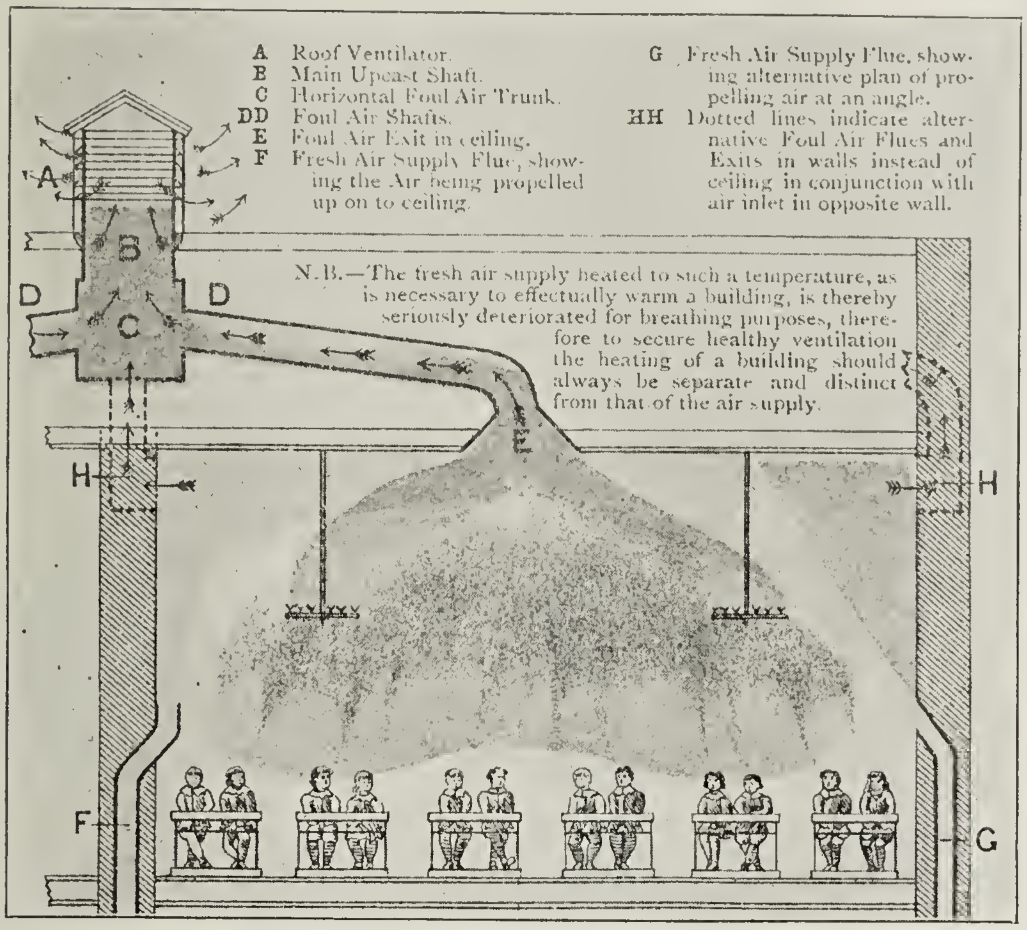

A Roof Ventilator.
B Main Upcast Shaft.
C Horizontal Foul Air Trunk.
DD Foul Air Shafts.
E Foul Air Exit in ceiling.
F Fresh Air Supply Flue, showing the Air being propelled up on to ceiling.
G Fresh Air Supply Flue, showing alternative plan of propelling air at an angle.
HH Dotted lines indicate alternative Foul Air Flues and Exits in walls instead of ceiling in conjunction with air inlet in opposite wall.
N.B.—The fresh air supply heated to such a temperature, as is necessary to effectually warm a building, is thereby seriously deteriorated for breathing purposes, therefore to secure healthy ventilation the heating of a building should always be separate and distinct from that of the air supply.
A
B
C
D
D
E
H
H
F
G

Figure 11.

The Houses of Parliament in Berlin were also originally equipped with the down draught system, but the sanitary engineer in charge of the work, being doubtful of the efficiency of the method, planned and provided for an up draught system also. After a practical trial of the down draught system it was considered eminently unsatisfactory for heating and ventilating the parliament chamber, so the up draught system already installed was brought into use, and at present it seems that the down draught system is used for one hour before the assembling of the members at the parliamentary sessions for a preliminary warming of the chamber, and the up draught system is used during the sittings to preserve the freshness of the air and to maintain a satisfactory temperature while the chamber is occupied by members and spectators.

A personal letter from Dr. C. J. McCormick tells me that the down draught system that I have exhibited to you in the Waltham Hospital has been in satisfactory use for thirteen years. Sir Douglas Gallon, F.R.S., in his "Report of the Barracks and Hospital Improvement Commission," says:

> The writer has visited on several different occasions three of the important hospitals in Europe and the United States of America, in which the ventilation depended on propulsion, and on every occasion the propulsion happened to be out of use for the time.

Taking all things into consideration, it is probable that the most satisfactory and by far the cheapest method of heating and ventilating hospital wards and possibly school rooms in this climate, is by direct radiation, the admission of fresh air through short ducts, which on entering the room or wards pass through the radiators, and the allowing of foul air to pass out of the room or ward near the ceiling—in other words, one of the forms of up draught ventilation. Billings says:

> The proper position of the foul air registers depends on the purpose of the room and on the season. In large assembly halls and especially where it is desired to provide for respiration, air as pure as possible instead of foul air diluted to a certain standard, the discharge openings should be above. . . . When we come to deal with rooms having a large floor area in proportion to the height and containing fifty or more persons whose heat production is a factor that must be taken into consideration, there is some danger that in the down draught method there will be an unsatisfactory distribution of the fresh air when the temperature of the external air is not below 50 degrees F.

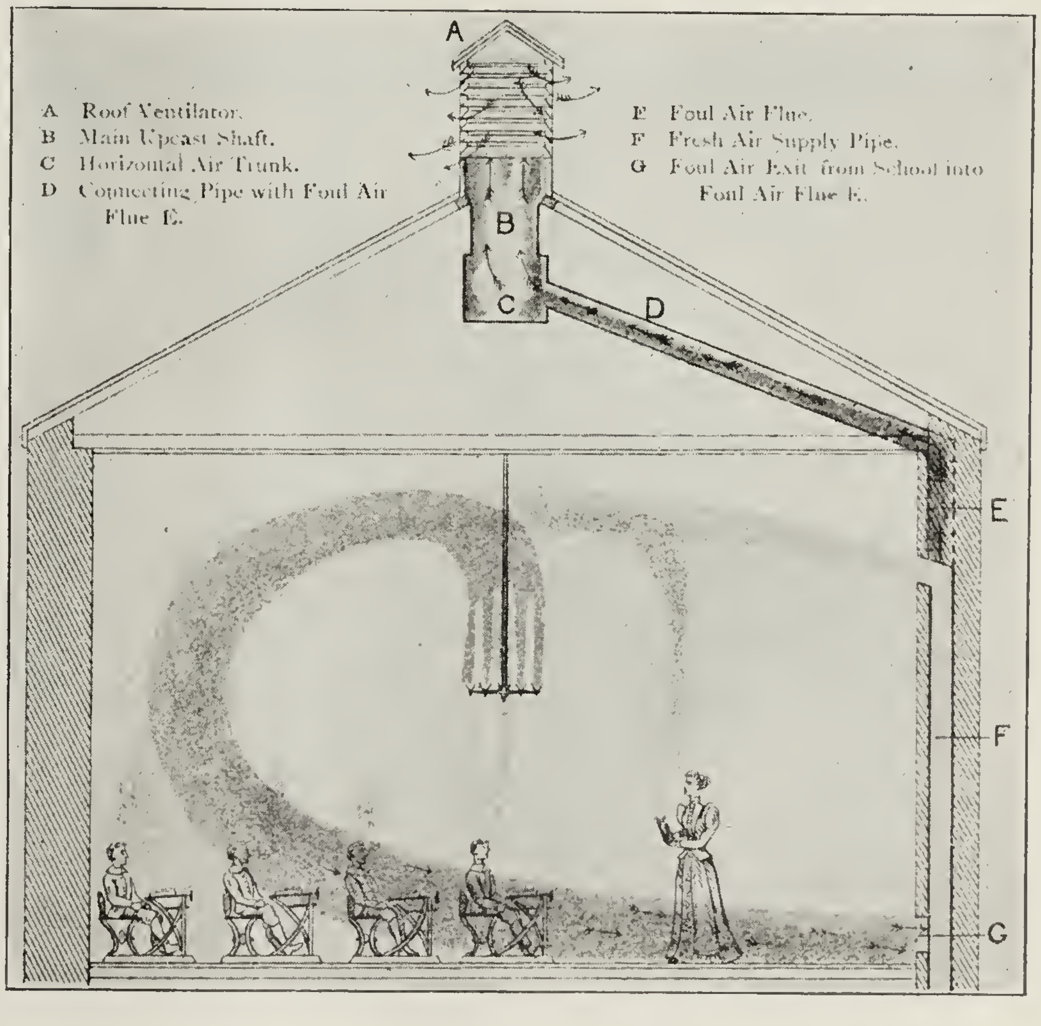


Figure 12.

If we do not use the down draught system—if we do not use a fan either for the impulsions of fresh air into a building or the extraction of foul air from it there are but two methods left that we can choose from. One is to bring the cold air into the building through a short duct—allow the air to be heated at a radiator and then to allow it to pass off through an up-east shaft through or near the ceiling. It is held that it is frequently necessary to aid the extraction of the vitiated air by placing small radiators in the extracting shafts so that the air in these shafts shall be heated and thereby acquire an upward movement. It is pointed out that this is a waste of heat, for the radiated heat subserves no other purpose than that of warming the air in the shaft and is an expensive motive power. This may be admitted, but is probably balanced by the necessary overheating of the very much larger quantities of air required to be delivered by the plenum system. In many structures these vents can be run to the smoke stack from the fire boxes of the boilers and will there be heated sufficiently to maintain a good up draught. One of the most reasonable methods that I am acquainted with is that of an English engineer who has planned what he calls a natural method of ventilation, although this term is usually applied to ventilation by means of doors and windows, which the sanitarians consider as no ventilation at all. In this Boyle system the heating and ventilating systems are independent. Radiant heat is used. Boyle's summary description of and rehearsal of the advantages of his system is as follows:

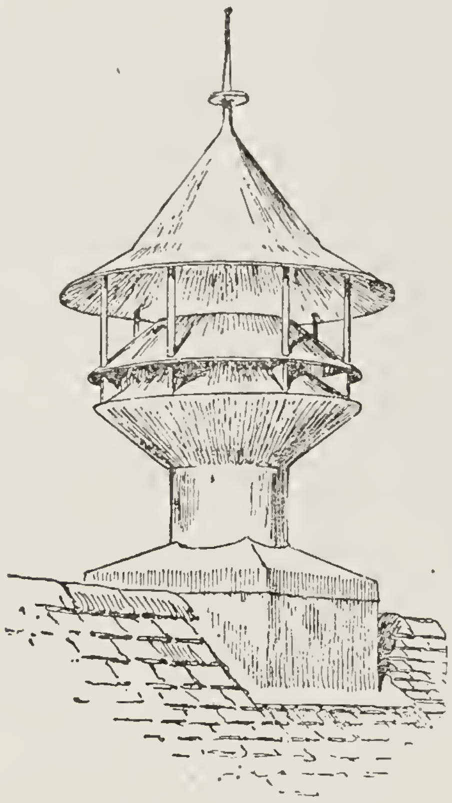


Figure 13.

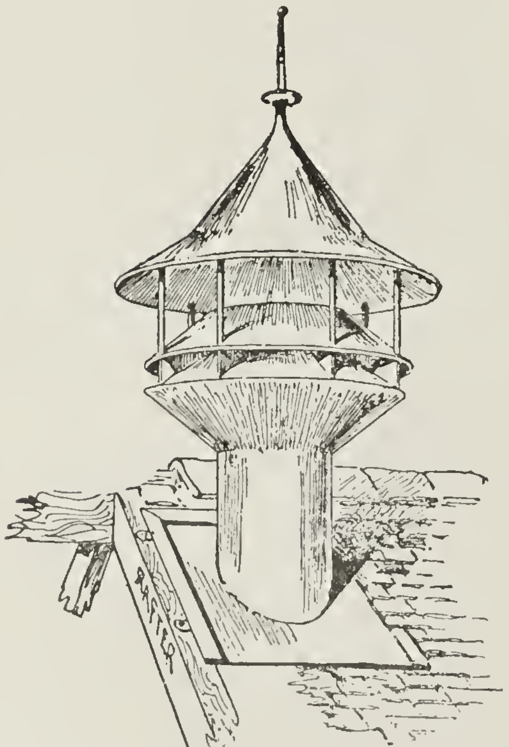


Figure 14.

> Natural ventilation properly applied is the most constant and reliable. It requires little or no attention, is always in action and can not get out of order or break down, as so often happens in mechanical ventilation. Care should be taken in the employment of ventilators that they are of correct construction and that both the outlet and inlets are sufficient in size and number and so placed as effectively to accomplish the work they have to do.
>
> The outlet ventilators should be fixed on the highest part of the roof, clear of all obstructions, so that the wind can reach them freely from every quarter. (Figs. 13 and 14.), The fresh air supply should be properly proportioned to the extraction. The combined area of the inlets should in all ordinary cases be at least equal to that of the outlet shaft. Main exhaust shafts should be at least of equal area to the combined area of the branch pipes. Branch pipes should have as great an upward angle as possible and should never enter the main shaft at the same level unless when parallel. All pipes should be made of metal and circular in shape to reduce friction. The vitiated air should be extracted at the ceiling, to where it naturally ascends. The fresh air should be admitted directly through the walls at a low velocity in an upward direction through a number of small inlet brackets or tubes distributed around the walls to secure more complete diffusion and an equable movement of the air in all parts of the building. (Figs. 15 and 16.) Air never should be admitted in cold weather in a horizontal direction, as a dis-

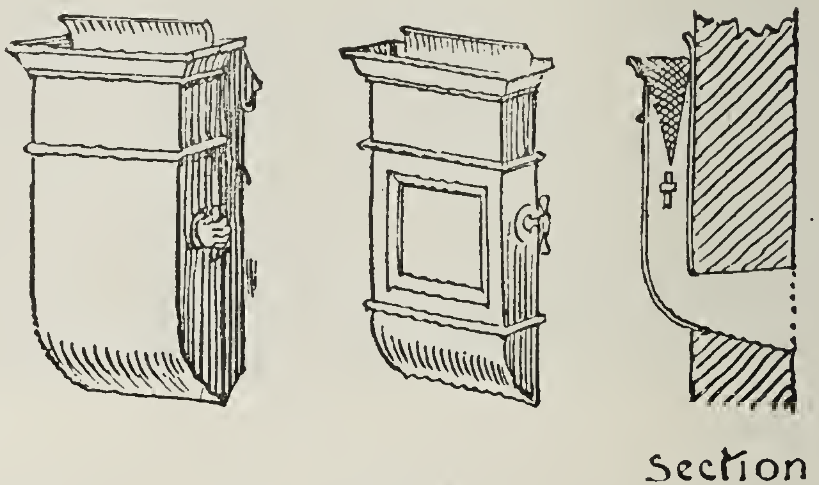
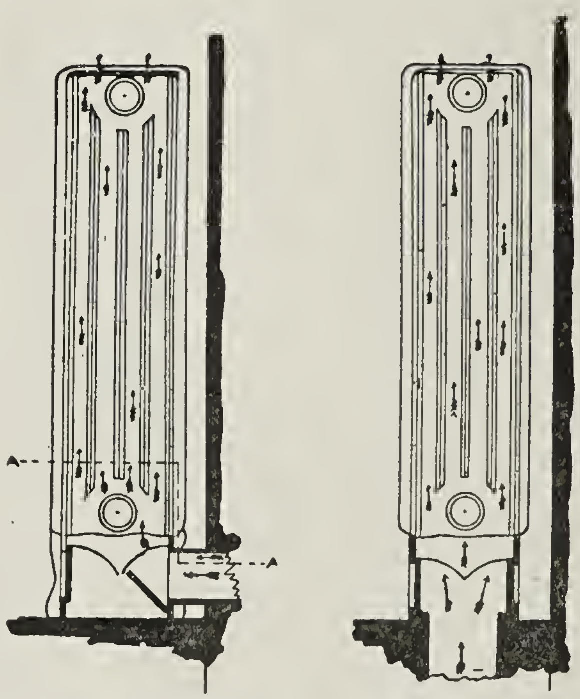


Figure 15.



Vertical Section
Valve open and air entering through Wall.

Vertical Section
Valve open and air entering through Floor.

Figure 16.

agreeable draught would result. The velocity of the air supply should not exceed two feet per second. The inlet channels should communicate directly with the outer air, be as short as possible and easy of access for the purpose of cleaning. Long inlet channels are objectionable, as they harbor dirt and are difficult of access. Where simple tubes or brackets are used the tops should be about 5 feet 9 inches above the floor. Where the air supply is warmed it may be delivered at a lower level (that is where it passes through radiators in entering the room). The inlets should be fitted with regulating valves to control the air supply. The fresh air supply should not be overheated, as its hygienic properties are thereby seriously impaired. Heating a building by hot air should, therefore, be avoided, as injurious to health. Radiant heat is the healthiest and most effective. Where open fires are used, they should have a separate air supply, led directly to them from the outside air through a 3 or 4 inch pipe to prevent them drawing the hot vitiated air from above down into the breathing air, creating draughts and unduly affecting the ventilating arrangements. Figures 17 and 18 well illustrate the principle of this system.

Sanitarians and intelligent educators everywhere are clamoring for the proper and systematic medical inspection of school children and it behooves us whose province is the eye heartily to second their efforts and to urge on the tardy school authorities the paramount importance of this work not only in the preservation of the general health of the scholars but also in the interest of their eyes.

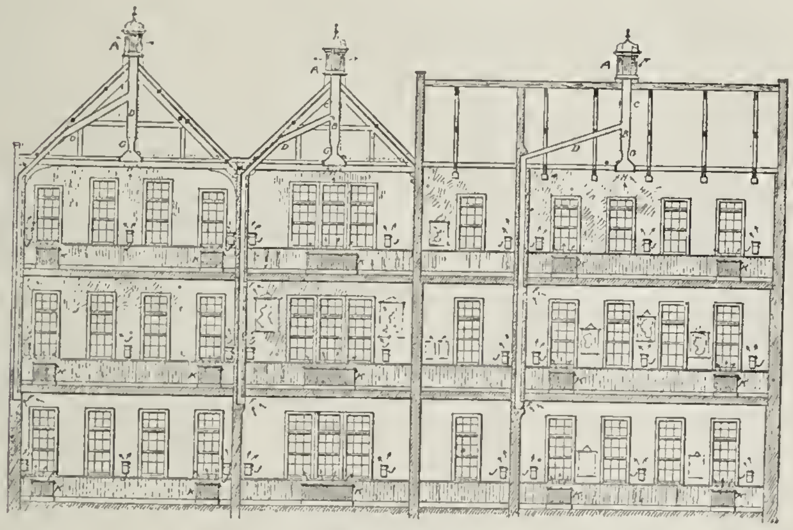


Figure 17.

I need not remind you of the value of the work of Cohn of Breslau, Williams and Ayres of Cincinnati, Agnew of New York, Derby of Boston and Risley and his associates of Philadelphia, in working up the subject of the production of myopia in school children by the ill-lighting of school rooms and the congenital anomalies of refraction in children whose vision has not been corrected on account of the neglect or ignorance of parents or teachers. We have already gathered together sufficient facts on this subject to justify a vigorous demand for the expert examination of the eyes of all school children as soon as they reach an age when they can be intelligently examined. We must not lose sight of the fact, however, that momentous as the subject of progressive myopia is, there are other conditions of the eyes that just as earnestly demand our attention. In a recent most excellent address on school sanitation, Dr. F. G. Byles of Denver tells us:

> In ten months' inspection of Philadelphia schools 3,446 cases of infectious diseases were found. During the first five months of school inspection in Newark, N. J., in less than 6,000 pupils, more than 1,700 cases of infection were found. In Chicago, in four months, 1,417 cases of diphtheria and 306 cases of scarlet fever were found in the school rooms. . . . The inspectors in Chicago schools in five months of 1900 found 670 children with chickenpox, 55 with whooping cough and 648 with measles attending school.

To the members of this Section the infectious diseases, such as diphtheria, scarlet fever, measles and whooping cough, have each their own ocular significance in paralyzed muscles, conjunctivitis, keratitis, iritis and inflammations, and the serious results that we have seen follow the course of the acute infections should be communicated to the authorities as an additional argument of the greatest weight for the prompt establishment of medical inspection in all schools where it is not now in force. Any poison is virulent or harmless in proportion to its concentration or dilution. The air of school houses is necessarily vitiated by the exhalations from the lungs and bodies of the children. Add to it, in addition, the germs of infectious diseases, as we have just seen is so often done, and we can appreciate how vitally important it is that the ventilation of school houses should be as perfect as possible.

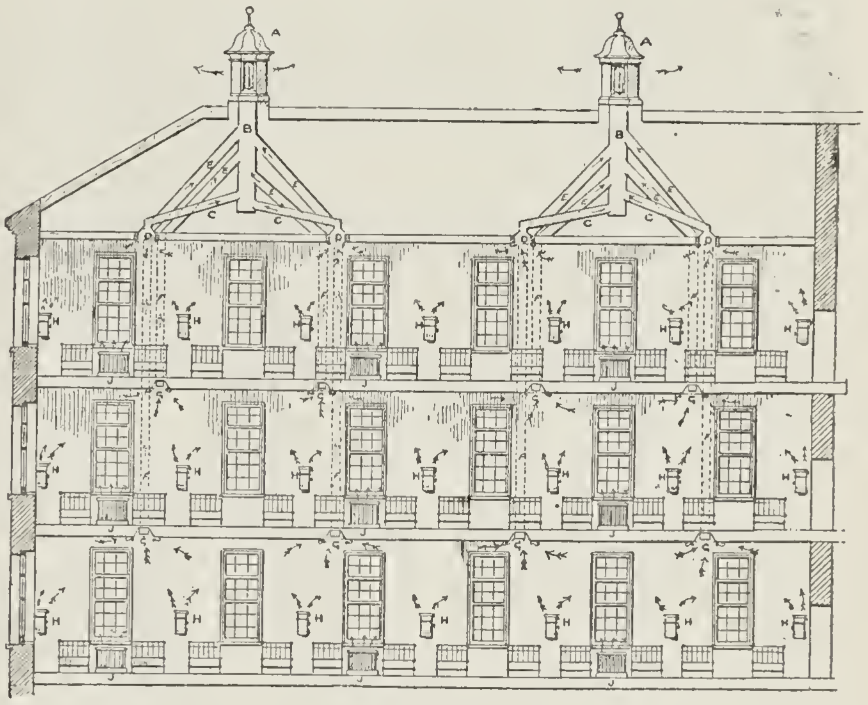


Figure 18.

The relation of the proper lighting and ventilation of school houses to the health of our children is so intimate, and we already know so well what should be and what should not be, that it is our duty to the commonwealth to insist that expert advice should always govern in the erection of a school building, and we must not cease in our demand for what is right until we have a competent medical inspector at every school house at the assembly hour to send the ailing children to their homes and to protect the healthy children in the school house.

In conclusion, I will read a very much condensed summary of the methods of heating and ventilating found in various Eastern hospitals and public buildings and noted by the architect of our new Cincinnati General Hospital during a recent trip that our commission took to Washington, Baltimore, Philadelphia, New York, Boston, Buffalo and Cleveland:

WASHINGTON.

Congressional Library.—Hot-water heating. Partly direct and partly indirect. Independent hot-water heaters under each wing. Small fans used in summer only to force fresh air into the various reading rooms. No fans used in heating. Ventilation by aspirating shafts.

Garfield Hospital.—Old building, direct steam; new building, indirect steam. No fan.

BALTIMORE.

Johns Hopkins Hospital.—Hot-water heating; gravity system. Indirect in wards; direct in corridors and offices. Ventilation by aspirating shafts.

PHILADELPHIA.

Medico-Chirurgical Hospital.—Hospital wards and clinical amphitheater heated by motor-driven fan through indirect steam coils. Offices, corridors, etc., direct steam.

Hahnemann Hospital.—Direct steam heat; indirect in new amphitheater. No fan.

Pennsylvania Hospital.—Central building heated by hot-blast fan system; wards, indirect steam without fan; corridors, etc., direct steam.

University of Pennsylvania.—Laboratories (new), corridors, offices, etc., direct steam. Laboratories, operating room, etc., have hot-blast fans and eduction fans; latter not in use. Medical department, direct steam.

New Municipal Hospital for Contagious Diseases.—Indirect steam from central plant. No fans.

NEW YORK.

Presbyterian Hospital.—Heated with indirect steam coils operated by fan. The superintendent, Dr. Fisher, does not approve of system.

Mt. Sinai Hospital.—Equipped with hot-blast system and eduction fans on roof. Also direct steam heaters under all windows in wards and corridors. Fan system not used. When visited by committee ventilation was effected by opening the windows.

Lying-in Hospital.—Fan system—one set to blow in and one set to draw out. Also some direct radiation in each room. Blowing fans not used. Eduction fans only in use. This saves $3,000 per year.

New York Hospital.—Fan system, blowing tempered air through indirect coils. In use all the time.

St. Luke's Hospital.—Heating, direct steam. Exhaust fans used for ventilation; in use part of the time.

BOSTON.

Massachusetts General Hospital.—Old buildings, indirect steam; no fans. New buildings, double fan system, one to blow in and one to draw out; both in use.

Boston City Hospital.—A mixed system; partly direct steam and partly indirect steam, with aspirating coils. Surgical building, fan system.

BUFFALO.

General Hospital.—Hot-blast fan system; objected to; hard to work. No thermostatic control. No exhaust fans. Ventilating flues through roof.

CLEVELAND.

Lakeside Hospital.—Fan system through individual stacks. Bottom heat inlets (a mistake). Bottom vents carried down through basement to hot stack.

FIBROID GROWTHS OF THE ABDOMINAL WALL.*

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DENVER.

The comparative rarity of these so-called desmoid tumors may be seen by referring to very recent statistics gathered by Cabot[1] of Boston, who found but 3 of this nature in a series of 4,876 abdominal tumors encountered at the Massachusetts General Hospital. Ledderhose in 1890 was at some pains to collect 100 cases. More recently, Pfeiffer[2] cites 40 cases seen in the Tübingen clinic during the past 46 years, and adds to this number 360 other cases which he gathered from literature.

The term desmoid, by which these growths have generally been described, originated with Johannes Müller in 1838, and was intended to designate tumors of the musculo-aponeurotic tissues of the abdominal wall (tendon-like neoplasms). My own attention was directed to these rather curious growths by three cases seen, respectively, at the New York Cancer Hospital, St. Luke's Hospital in New York and at the City and County Hospital in Denver. These cases were practically duplicates. Each occurred in a young woman between 25 and 35 years of age who had recently gone through pregnancy. In each the growth was in the region of the right rectus muscle and near the level of the umbilicus. In two the peritoneum was involved and required excision; in the other the peritoneal cavity was not opened. In one the size of the growth is described in my notes as "about the size of a pullet's egg;" in one it was the size of a small orange; in the other, that of a little baby's fist. In each of the three cases the hospital pathologist reported the growth to be a fibroid. Each patient made a prompt operative recovery. In two cases the fate of the patient after leaving the hospital is unknown to me. In the third, a patient operated on in the City and County Hospital in Denver in June, 1904, there has been no relapse as yet.

I have made but brief mention of my own cases, but on examining the literature of the subject I am struck by the fact that most of these growths occur in practically the same way.[3]

Pfeiffer analyzed 400 cases, and his observations are so valuable that I shall quote from them at length and without apology.

No cases are included in the category except those which really began in the muscles and aponeuroses. This excludes tumors beginning in the round ligaments, in the periosteum of the ribs, pelvic bones and vertebræ, and in the ligamentum teres, all of which may present themselves as tumors of the abdominal wall despite their peduncular attachment to the outlying tissues.

Desmoids, unlike sarcomata in the same situation, occur in the great majority of cases in women—the ratio being about 7 to 1.

In regard to the influence of previous pregnancy, Pfeiffer has data in 265 cases, and of this number 250 women, 94.3 per cent., had borne children—usually more than one. The tumor appeared, as a rule, immediately after delivery, and in only 15 is it expressly stated that the woman was pregnant when the growth appeared. Naturally, a majority of women were of child-bearing age; 146 were between 25 and 35, 41 were between 15 and 25, and 35 between 35 and 50. Only 15 women were over 50. In a considerable number the age was not given. A very few women were over 60. Of the few men observed, the common age was between 35 and 50. There are also a few cases recorded in children; some of these were undoubtedly congenital.

Heredity may be disregarded as a causal factor, and the very great majority of the growths were single.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Trans. Assoc. of Amer. Physicans, 1905.

[2] Beit. z. klin. Chir., 1904, vol. xliv, p. 334.

[3] The following are among those who have recently paid attention to the subject: Venot: Jour. de Mêd. de Bordeaux, 1903, xxxiii, 417. Abadie: Montpell. Méd., 1903, xvii, 97. Bornemann: Hosp. Tidende, 1903, xi, 759. Sabadini: Bull. Méd. de L'Algerie, 1903, i, 261. Schiokouski: Beit. z. Lehre, von Bauchdeckenfibrom. Diss. Berlin, 1903. Druebert: Echo Med. du Nord, 1903, vii, 512. Silberberg: Bull. et Mem. Soc. Anat. de Paris, 1903, lxxviii, 677. Fredet: Ibid, 712. Hayemann: Ueber Tumoren der Bauchdecken., Diss. Halle à Lax. 1903. Larass: Ueber Desmoide der Bauchdecken, Diss. Leipzig, 1904. Eitel,: Northwest Lancet, 1904, xxiv, 228. Stein :Monats. f. Geburts. u. Gyn., 1904, xix, 360, and Pfeiffer.

Location.—In 185, or 72.5 per cent. of available cases, the growths were below the navel; of these 37.2 per cent. were to the right side, 27 per cent. to the left, and 8.2 per cent. in the middle line (absolute ratio, 51 per cent., 37 per cent. and 12 per cent.).

In that part of the abdominal wall above the umbilicus desmoids occurred much less frequently, in all 41, or 16.1 per cent; 17 on right side, 20 on the left side and 4 in the middle line (ratio, 41 per cent., 49 per cent. and 10 per cent.).

Of the total number 26, or 10.2 per cent., were neither above nor below the navel, but on a level with it—10 to the left and 16 to the right.

Finally, there were 3 in the region of the loins—2 on the right, 1 on the left.

Summary

		R.	L.	M.
Above navel	41	17	20	4
Even with navel	26	10	16	0
Below navel	185	95	69	21
Lumbar	3	2	1	0
	255	124	106	25

The point of origin may be a more or less broad pedicle attached to fascia or muscle. Of 268 cases in 115, 43 per cent., the origin was from the rectus muscle. In 13 cases from the anterior and in 34 from the posterior lamina of the fascia, while in the remaining 68 the point of origin is not stated. In 47 cases, 17.5 per cent. the oblique muscles were the origin, in the following order of frequence: Internal oblique, external oblique and transversalis. In 45 cases, 17 per cent., the origin was the abdominal fascia; 10 times from the superficial and 35 times from the deep. In 29 cases the tumor arose from two muscles, and in 29 others so many muscles were involved that the origin could not be determined.

The fact that most of the desmoids arise from the rectus corresponds to their lateral location, and to other points in their localization, such as predominance in the right pubic region.

In form the tumor is usually roundish or rather ovoid. As a rule the long axis of the mass corresponds to that of the course of the muscles and tendons from which it arises. The direction of the growth is usually determined by the resistance encountered. Hence, in primiparæ and in nulliparæ the firmness of the abdominal wall anteriorly prevails over that in the rear. In such cases—relatively few—the tumor grows inward, and has a spheroidal or mushroom shape. When the walls have become lax from child-bearing, however, the tumor grows toward the surface, even when it arises from the posterior sheath of the rectus; showing that the resistance from behind (transversalis fascia, peritoneum and intestines) exceeds that of the abdominal wall in front. The least resistance encountered is in the muscles themselves in their long direction, this favoring the flattened or ovoid shape. When a tendon or muscle sheath is encountered a constriction results and the tumor grows above and below it, producing the so-called cuff-button form. Multiple constriction produces lobular forms, which may simulate multiple tumors.

While the attachment is usually broad, so that the mass lies in its bed like a disc, slender pedicles may occur. Frequently extirpation may be accomplished by shelling the tumor out of its bed. A capsule is usually present, but this becomes atrophic from pressure. It is not involved in the growth of the tumor in the majority of cases, but often when the growth exhibits sarcomatous tendencies a diffuse union of the tumor with the surrounding tissues is found, and extirpation can be effected only by the knife and scissors.

In many cases (especially in those reported from French sources), a connection is mentioned as existing between the desmoid and some osseous structure (false ribs, ilium, pubic bone). This is termed the bone pedicle. Although their existence has been denied, there is good evidence that such secondary bone pedicles sometimes do occur. Olshausen, who has seen such cases, believes that these pedicles may be primary. Such a view would confound desmoids with true tumors which originate from periosteum. In Pfeiffer's 400 cases, no less than 65 (16.25 per cent.) had osseous attachments, 35 with ilium, 8 with pubic bone, 6 with false ribs and 1 with spine. In two cases there was attachment to two bones—ilium and os pubis.

The rate of growth and size of the tumor vary extremely; in many cases several years, even several decades, may show hardly any change; then a sudden and rapid growth may set in. In other cases, the growth may be rapid at first, but when a certain limit has been reached (size of head) the growth may remain stationary for years. Rapid growth does not necessarily mean malignancy. Sometimes tumors are seen which prove fatal when their growth has been slow throughout. One patient who refused operation died in 18 months.

The usual size of a desmoid is from that of a hen's egg to that of a large fist. It is not rare to see them as large as a child's or adult's head. They may attain a weight of 2 or 3 kilos. Very exceptionally great weights have been recorded—up to 10 kilos. Some of the oldest reported cases had weights of 17 kilos, 22 kilos, etc. This may be explained by the fact that these tumors cause relatively little trouble, and hence may have been allowed to grow indefinitely before medical advice was sought.

It has very often been noted that the desmoids were first noted during pregnancy (including puerperium) or else began to grow rapidly at that time, to become stationary again after the childbirth was over. This happened in 99 out of 400 cases (about 25 per cent.) Growths extirpated during pregnancy may recur during a subsequent gestation.

In nulliparæ and in males, trauma is frequently accused as a cause (about 7 per cent. of the entire number).

Pathologically these desmoids are firm, hard masses, usually enveloped in a membrane. They creak when cut, the section being pale-red or whitish-yellow and tendon-like. The presence of escaped and altered blood may color the tumor a brownish hue. The texture, in general, is uniformly hard and firm—bundles of fibers may be seen in a network or sometimes in concentric grouping, dividing the area into nodes. The desmoid is poor in vessels, and hence areas of softening may occur. The edema which precedes it may be of such degree as to simulate fluctuation. These areas of softening often lead to the formation of cysts, and these are sometimes hemorrhagic.

Microscopy shows the bundles of fibers already mentioned closely adherent to the adventitia of the vessels. Where edema occurs, the bundles are pushed apart. More or less proliferating tissue is present—as shown by young connective-tissue corpuscles in the course of transformation into fibrillæ. When this immature tissue is especially abundant and collected into clusters the tissue of a sarcoma, round or spindle cell, may be simulated. This may lead to mistaken diagnosis when a piece of tumor is excised before operation. Some cases thus diagnosed as sarcoma have not relapsed even when extirpation was incomplete; other cases diagnosticated as desmoid have rapidly recurred (the latter mistake is much more infrequent). A microscopic diagnosis in advance of operation can not be made with certainty and does not give any guide to prognosis as to recurrence. The amount of formative tissue present is likewise no criterion of benignancy or malignancy.

The "more or less cellular fibroma" is the most common type of the desmoid, especially in women. Pure sarcoma (round or spindle cell, and oftener the latter) also occurs, especially in men. Other types of sarcoma are rare or absent, save cysto-sarcoma. (It seems to me that all sarcomata should be excluded from this class.) As far as the material is available, 88.2 per cent. of all cases in women were cellular fibromata and 11.8 per cent. sarcomata; in men the two percentages were 75.6 and 24.4.

In only 14 cases, 4.67 per cent., was there a mixture of myxomatous tissue. There was a single case of pure myxoma and no instance of myxosarcoma. Calcification occurred in 4 cases. A doubtful case of suppuration of a desmoid is recorded.

Several authors record the presence of smooth muscle (fibromyoma). Of a number of alleged cases Pfeiffer selects some 5 as genuine. Others may be added, but description is not sufficiently thorough. All cases, real or alleged, are in women, but by no means confined to the round ligament region.

Under etiology some points have already been mentioned. Grätzer has elaborated an embryonal theory (confusion of mesodermic elements, both peritoneum and fibrotendinous portions of the abdominal wall being derived from that layer). Herzog has formulated a traumatic theory, based on the possibility of injury to the rectus muscle, formation of organized hematoma (muscle callus) and eventual tumor formation. This view has been well supported in literature, but can not be made to apply to other muscles when injured.

Sänger has apparently refuted both the preceding theories. Simple homologous tumors do not have an embryonal origin, while desmoids show no evidence of hematomatous origin.

Guinard and other French authors seek to connect all desmoids with the round ligament, as far as women are concerned. Cases in men are placed with sarcomata. This view is opposed by facts already cited.

As far as trauma to muscle is connected with pregnancy, etc., obstetricians are almost universally silent as to such injuries, hematomata, etc. The exception is Stoeckel, who has reported 2 cases of hematoma of the abdominal wall in pregnancy. Not only could he find no other cases in literature, but both his own occurred under peculiar circumstances, viz., severe paroxysms of coughing and with a general hemorrhagic diathesis.

Numerous cases of hematoma of the abdominal wall from trauma have been recorded in man, but none was ever known to cause a desmoid, unless we include certain cases of keloid, which present some resemblance. If desmoids arise from trauma they should be much more common in men. Certain lesions—indurations, hematomata, cysts, keloid—have been known to follow injury to the muscular region, but they follow closely on the latter. Desmoids, on the other hand, differ greatly from such sequelæ.

Ribbert's theory of tumors may be applied to desmoids. This is a modification or expansion of the old Cohnheim theory as applied by Grätzer. As applied by Lücke, it depends on the plasticity and distention of the abdominal wall as a result of pressure of the gravid uterus, thus favoring the proliferation of connective tissue elements by reason of diminished resistance—the best answer to this view is that we do not see desmoids follow distention from ovarian tumors and the like, while the sexual organs proper undergo a degree of softening which might favor proliferation of elements previously held in check. This feature of pregnancy can not be applied to the abdominal walls.

Wischnewsky has recently made exhaustive studies of the distended abdominal wall. He states that in pathologic conditions the muscles atrophy, while in pregnancy they undergo hypertrophy in which the fibrous tissues participate. Durante has made the same observation.

This fact enables us to exclude distention as an efficient cause. The connection of desmoids with pregnancy can not be explained in this way. With a normal hypertrophy of the fibrous structures occurring at this period, the presence of young connective tissue at once suggests a possible factor in the causation of these tumors. The coincident distention and stretching of the abdominal wall could then be invoked as a secondary factor. To produce a truly pathologic state it would still be necessary to call on the misplaced germinal matter dating from the embryonal period.

These three factors, viz., diverted or superfluous embryonal elements, a state of active proliferation of normal fibrous tissue and a stretching or loosening of the parts involved, only apply to pregnancy. In trauma there is not the stretching, but there is an edematous succulence which may produce an analogous result. Individual cases of desmoid following laparotomy scars, the pressure of a belt buckle for a long period, etc., could also be thus explained. A single blow, laceration, etc., may be and often have been alleged as causes. But the formation of a hematoma is not a necessary step.

In regard to symptoms, subjective disturbances are usually absent at first, and women seek operation for cosmetic reasons only.

When the growth reaches the size of an English walnut, pain may appear in various types, local or radiating, worse during the menses or present only at that time. In very nervous women, the presence of the pain may cause great discomfort; rarely convulsions or hallucinations, which disappear with extirpation. When the tumor grows rapidly, attaining a considerable size, patients complain of peculiar painful sensations, due perhaps to compression of nerves or to stretching of skin. Medical aid may now be sought and an erroneous diagnosis of malignancy may be made. Pressure symptoms are usually absent, as is also distress from external contact. Tenderness to pressure is usually absent as well. The skin may or may not be stretched and glossy; with large tumors *striæ atrophicæ* appear. Adhesion with the skin if of rare occurrence; when present it causes redness and edema and even ulceration, phlegmon and sepsis. The most cellular type of fibroma, with relapse of same, almost never involves the lymphatics.

Diagnosis is by no means so easy as might appear. When small and not adherent beneath, diagnosis is easy; no so when opposite conditions exist. Characteristic is the readily mapped out limits, the conformity in direction with the muscles, the degree of mobility—these may be made without narcosis. These desmoids of the rectus are naturally movable from side to side chiefly. Bouchacourt's symptom is of value—the patient sets her abdominal muscles in voluntary contraction by rising from a chair without aid of the arms; during this contraction all mobility of the tumor disappears. If the tumor then becomes more prominent, it is probably derived from the superficial muscular layers; if it becomes less prominent, its origin is from the deeper layers. This maneuver may not succeed if the abdominal wall is either unduly firm or unduly lax. As compared with abdominal tumors of deeper seat, the parietal kind do not change their position with change of posture. Bulging outward is very characteristic of desmoids, this being much more marked than mere palpation would seem to indicate. Unless deep adhesions have formed there is no change of position during respiration.

Diagnosis, however, is often not only difficult, but apparently impossible. A large number of mistakes are on record in which desmoids have been confounded with other conditions—various cysts, tumors of the gall bladder, omental tumors, salpingitis, appendicitis and other intra-abdominal affections. Hence the necessity of differential diagnosis between desmoids and a host of other intra-abdominal conditions. Exploratory incision and exploratory laparotomy may be necessary. Narcosis will exclude hysterical tumors. Vaginal and rectal exploration may be of aid.

Treatment is purely surgical, and the desmoid should be extirpated at once. The surgeon must beware of too radical intervention, as the operation may leave a breach in the abdominal wall which can not be repaired. In pregnancy, extirpation is indicated in the early months, but in the later months operation must be deferred until after delivery; otherwise the operation scar would be likely to rupture. Some authors, however, do not advise waiting.

As even the smallest desmoids, when they arise from the posterior aspect of the rectus, may necessitate a peritoneal resection, such a contingency must be prepared for.

In operating, the incision must be in the direction of the long axis of the tumor. The skin and muscular layers are first divided. If the tumor is encapsulated, not adherent and sharply outlined, it may be removed by blunt dissection. If at any point it appears to have involved the investing tissues, free excision must be made. It is of no use to attempt a blunt separation of the peritoneum, and one should not hesitate to open the abdominal cavity. General narcosis must be employed. Successful cases of imperfect removal must not be allowed to influence the surgeon, for these are rare exceptions. Even when the desmoid can be removed extraperitoneally, it is sometimes wise to resect the peritoneum in order to prevent infection by facilitating drainage. Cases of peritonitis have been reported in which that membrane was not involved in the operation. Under such circumstances two cases have terminated fatally.

Resection of the peritoneum and extirpation of the tumor adherent thereto is, in general, best done as follows: At the edge of the tumor a small incision is made through the membrane and the tumor is excised. Sänger, who lost a case by hemorrhage into the peritoneum, proposed the use of "arcade ligatures" about the tumor which was to be excised.

If such large areas of peritoneum must be removed that the breach can not be closed by primary union, the wound must be made as small as possible by suture, after which the edges are to be stitched to the omentum.

Postoperative hernia is best prevented by separate suture of each plane. If necessary, the opposite muscles may be used for plastic purposes.

If the entire half of the abdominal wall is involved, the skin should be spared in the excision of the tumor; it may be of value in closing the breach if muscle plastic is available. If the flaps left in certain cases are redundant, König's plan may be followed; that is, the skin may be arranged in cock's-comb fashion and the subcutaneous tissues sutured together.

If suture in individual planes has been effected, there is no need of a retentive band. Under other circumstances a bandage must be worn for several weeks after complete healing of the wound.

The immediate results of operations on desmoids of the abdominal wall have been relatively favorable since the introduction of asepsis. Discarding some of the older material Pfeiffer has notes of 285 patients operated on. Of this number the abdominal cavity was opened in 119, 40.8 per cent. The primary mortality in these cases was 10 cases, 3.5 per cent. In 142 cases, 49.8 per cent., extirpation was effected without opening the peritoneum. The mortality here was 3 cases, 1.05 per cent. In 24 cases details as to peritoneum fail. The combined mortality was 4.55 per cent. Of the 13 cases, 7 patients died of collapse or secondary hemorrhage and 6 of peritonitis.

In regard to ultimate results Pfeiffer avails himself of 107 cases, 85 females and 22 males. Relapse occurred in 33, 39.8 per cent.—15 males, 18 females. In 17 cases, relapse was fatal—11 males, 6 females. Hence, relapse occurred in males in 68.1 per cent. and was fatal in 50 per cent. Relapse occurred in females in 21.2 per cent., mortality but 7 per cent.

Late relapse occurred at varying intervals. In no case did it occur in the first 3 years among the women (40 cases studied), but 2 men had relapsed (out of 5 studied) within that period. In the cases of late recurrence studied in women, 3 in all, the interval after operation was 4, 7 and 9 years, respectively. In the 2 cases of early relapse in men, there was a history of repeated relapse; in one the interval was brief, in the other 14 years.

It is but natural to assume that the smaller the growth at the time of extirpation the less will be the liability to recurrence.

DISCUSSION.

Dr. Robert F. Weir, New York, said that this is a rather rare affection, but he has met with it twice and both cases were in young unmarried women between the ages of 30 and 35. The first tumor he thought was an ovarian tumor with very solid contents. He made an incision which revealed the fact that it was not in the abdominal cavity. The adjacent tissues peeled off readily and the mass weighed fourteen pounds. The attachment was along the line of the right linear semilunaris. The patient recovered with a fair condition of the abdominal wall and remained well for several years when she passed from his observation. The younger patient had a little different tumor in the lower right side. It was removed by incision; the attachment was in a similar situation, but it demanded some sacrifice of muscular tissue. Under the microscope it was pronounced to be purely fibrous, but it recurred eight months afterward, when after removal it was pronounced to be a spindle-celled sarcoma. If it had been carefully examined all over by the pathologist it would probably have shown in some parts of the eight pounds that it was a spindle-cell sarcoma. It recurred again, and was again removed when it had recurred, but he refused to do anything further surgically. She was treated by erysipelas toxins by an expert, under which treatment she improved to some extent, but eventually she returned to the hospital and died from the tumor. This case shows that these large masses are at times malignant. In the second procedure help was derived by liberating the peritoneum from the adjacent extraperitoneal tissues. In this way adhesions were avoided.

Dr. Emmet Rixford, San Francisco, mentioned a similar case occurring in a young woman of 27 who had been pregnant some time before the tumor was discovered. The tumor grew slowly but continuously and when operated on it measured 4x8 inches. It was somewhat the shape of a modern football, was smooth in outline and situated in the anterior abdominal wall at the outer edge of the left rectus muscle. The operation was simple. The growth, which was situated in the internal oblique muscle, was simply shelled out. The peritoneum was not opened. The muscles were drawn together with chromicized cat-gut and wound closed. Although the operation was done some ten years ago and the patient has since been through two childbirths there has been no recurrence of the tumor and no hernia. The tumor was diagnosticated as sarcoma but it was definitely a desmoid, although the pathologist was unable positively to exclude malignancy because some of the areas in the tumor were evidently sarcomatous while other areas were apparently of simple fibrous tissue.

Dr. Alexius A. McGlannon, Baltimore, stated that recently he had a similar tumor for three years. After operation the patient was free from the growth for fifteen months and then it recurred and was again removed. The first tumor was a soft fibroma, while the second showed all the varieties of malignant connective tissue tumors. It was lobulated, some lobules showing fibro-spindle-cells sarcoma, and some mixed spindle and round cells. The second operation was only done in May, so that Dr. McGlannon does not know the results. The fact that the tumor became more prominent after contraction of the abdominal muscles was considered important, indicating a superficial position; but the tumor involved the entire thickness of the wall from subcutaneous fascia to peritoneum, and became prominent when the muscles were contracted because of intra-abdominal pressure.

Dr. J. P. Connell, Fond du Lac, Wisconsin, reported two cases, one of which was a tumor of the rectus muscle, the size of an egg, which has not recurred. The second case occurred six months ago, and the tumor extended from the erector spinæ almost around to the ribs. He took a section of the growth and the pathologist reported a fibroma; he then advised removal. He dissected the growth out from the rectus muscle, a great deal of which was involved, as were several other abdominal muscles. The attachment extended to the periosteum of the ribs and in operation he removed a section of several of them. The patient made a good recovery. In his dissection he made a large flap and after turning out the growth stitched the flap back into place.

Dr. O. O. Witherbee, Los Angeles, reported a case involving the left rectus muscle following an operation for salpingitis. The microscope gave a spindle-cell appearance but not exactly of the sarcomatous type. To have removed it would have left the patient without any abdominal wall, and he therefore advised using the Coley fluid. The patient had been reduced in weight to 85 pounds when beginning the serum, so that the prognosis was most unfavorable. He used the serum under protest, but it looked like a last resort. At first it was used every other day, in sufficient quantity to produce a reaction; in a few weeks it was used every third day, and later every fourth day, until after six months it was used only once a week. The patient now weighs 120 pounds, and there is only just a suspicion of the tumor left.

Dr. Jacob A. Fulton, Astoria, reported a case of fibroid tumor of the abdominal wall on which he operated 16 years ago. At that time he considered it a rare disease for he found few reported cases. In its removal a portion of the peritoneum about the size of a dollar was removed and although the patient had secretly eaten a large number of dried prunes before the operation, and vomited prunes in large quantities, the operation was successful and no hernia followed. There has been no return of the disease.

Dr. L. L. McArthur, Chicago, mentioned one case of this type which well illustrates the difficulties of diagnosis. The growth was so mobile that it was transferred from the gynecologic to the surgical department of the hospital. On opening the abdomen Dr. McArthur found a tumor with a broad, flat ribbon-like base extending from nearly the umbilicus to the symphysis. He thought that he had to deal with a long pedunculated uterine fibroid. The interne, in his bi-manual manipulation, had been able to detect that when the tumor was pushed down the abdominal wall was also dragged down, especially under the right rectus.

Dr. Maurice H. Richardson, Boston, stated that Dr. Willoughby's reference to Coley's treatment brought to his mind an inoperable case of fibrosarcoma of the abdominal wall so successfully treated that a hernia developed in the scar of exploration through a space occupied originally by six or eight inches of dense tumor. Dr. Richardson has seen several cases of fibroid tumors of the abdominal wall. Whether they were of the desmoid variety or not, he cannot say. The practical point in the treatment of any neoplasm extensively involving the abdominal wall is the closure of the gap left by its removal. He has recently succeeded in filling in the gap left after removing the muscles of the left lower quadrant, which, with a portion of the os pubis, had been involved in the fibrosarcoma of great extent. The muscular belly of the tensor vaginæ femoris, with the fascia lata, was reflected from the thigh and sutured to the edges of the gap, as shown by these blackboard drawings. A firm and serviceable abdominal wall has resulted.

Dr. Charles A. Powers stated that it is difficult to distinguish between certain types of fibromata and sarcomata, and that the best that can be done is to get a reliable pathologist's report on the tumor. Dr. Powers stated that his paper dealt only with fibromata. In referring to Dr. Richardson's case Dr. Powers quoted Dr. Jacobi of New York who reported a case of extremely high temperature which he had observed; a number of men disputed the accuracy of his observation whereon Dr. Jacobi said that when the clinical facts collide with previously existing scientifiic knowledge the latter goes to the wall and the facts stand. Dr. Powers said that he is quite ready to accept Dr. Richardson's conclusions.

CYSTS OF THE SPLEEN.*

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Splenic cysts, unaccompanied by cystic formation in other structures, do not often occur. The classes found are: 1, Dermoid cysts, one of this type being reported by Andral; 2, simple, serous, or blood cysts, of which a few cases have been reported; 3, echinococcus cysts. Although the latter usually occur in association with similar cysts in other organs, there are reported, according to Coen, as quoted by Douglas, 61 cases of solitary splenic cysts, although the spleen is involved in only from 1 to 3 per cent. of human echinococcus.

The etiology of cysts of the spleen in the case of dermoids and echinococcus may be summarily dismissed with the statement that it is the same as in other structures. Simple serous or blood cysts are of more interest. They are called by the last name of the three by certain authors from the fact that they are all thought to occur from an extravasation of blood within the organ or its capsule, the sanious contents remaining indefinitely or being replaced by a fluid, sometimes clear, sometimes straw-colored. Others, however, attribute the serous and the blood cysts to different causes. Andral reported a case of simple serous cyst in the center of the spleen, and Leudet a multilocular cyst in a spleen that was not enlarged. Boettcher found a multiple serous cyst in an amyloid spleen and noted that some of the cysts were traversed by fine trabeculæ of connective tissue. He attributes the cause of these cysts to occlusion of the arterioles, due to the amyloid change with fatty degeneration and ultimate softening and sloughing of the splenic parenchyma. For the most part, however, we can say that serous cysts in the spleen are formed precisely as elsewhere. The enlargement and the associated changes accompanying chronic malaria seem to favor the formation of splenic cysts, as is shown in the case of Livois, Marcano and Fereol, Spencer Wells, H. C. Cutcliffe, Giuliano, and myself.

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Blood cysts are found more frequently than simple cysts, and essentially follow hemorrhage into the splenic substance or, as happens in the majority of cases, just beneath the capsule. This variety of cyst forms more rapidly than any other, in the nature of the case. However, full development is not necessarily reached early. In Credé's case ten years intervened between the time of traumatism and of operation. Irregular development is seen in some of them, periods of rapid increase alternating with periods of quiescence, caused by additional hemorrhages.

Cysts of the spleen contain a capsule, lined with endothelial cells, except dermoids, which are lined with epithelium. The capsule is made up of fibrous tissue containing now and then unstriped muscle fibers. In Foerster's case the cyst was surrounded by cartilage. Hydatids give us a more complex capsule, externally is a more or less complete layer of fibrous tissue, adventitious in origin, the cuticular membrane separating, as it were, the structure of the containing organ from the echinococcus capsule proper, the endocyst. This inner wall collapses and curls up when removed, has a characteristic lamination of seven or eight layers, and has a gelatinuous appearance. The endocyst has an external wall and an internal, the former having the appearance of "highly elastic, lamellar cuticle," the latter that of "granular matter, cells, muscle tissue (unstriped), and a water-vascular system," according to Sutton. Extending from the lining of the hydatids we expect to find daughter cysts, although it is a well-known fact that they are not uniformly present.

The simple serous cyst contains a fluid varying from clear colorless to straw-colored. In this fluid are to be found sometimes a small amount of débris from more or less completely broken down cells. The specific gravity varies from 1000 to 1028 or 1030, and Ruess has formulated a table to determine the amount of albumin approximately from the weight of the fluid, the essence of which may be stated thus: Below 1008 there is little or no albumin; at 1008 the albumin is 0.2 per cent., and for each point of increase in specific gravity there is between 0.3 per cent. and 0.4 per cent. increase in the amount of albumin, being nearer 0.4 per cent. than 0.3 per cent. For example, at 1008 the amount, as stated above, of albumin is 0.2 per cent.; at 1009 it is 0.6 per cent.; at 1010 it is 1.9 per cent.; at 1011 it is 1.3 per cent. It must be remembered that hemorrhage into a simple cyst will give contents similar to an original hemorrhagic cyst and will thus produce confusion as to the original nature of the fluid. However, it is claimed by some, as mentioned already, that the simple cyst of the spleen originates from hemorrhage.

Blood cysts of the spleen have been found far more frequently than simple cysts. Yet, as Loomis and Thompson claim, it is probable that some of these are simple cysts into which bleeding has taken place. The same characteristics of fluid are seen that blood may assume when long confined anywhere in the body. The color of the fluid is black, brown, reddish yellow, red or yellow, and if the cyst is of long standing the contents vary in consistency according to the extent of absorption and the abundance of serum.

In reviewing the cases of cystic spleen exclusive of echinococcus it is found that the contents vary largely in the proportionate distribution of the chief constituents. The fluid is degenerated blood in most cases and may contain red and white blood cells, cholesterin crystals and shreds of tissue. A case reported by Pean had calcareous granules in the fluid. Terrier's case had blood clots which brightened on contact with oxygen. Piccinelli reports an ossified cyst of the spleen. It is rare to find a splenic cyst in which the greater part is made up of cholesterin. Andral, in 1829, found a splenic cyst with fibro-serous walls whose interior contained fatty matter, like tallow, in the midst of which some hairs were scattered. This has been classified as a dermoid cyst.

Echinococcus fluid is clear, free from albumin, neutral or alkaline in reaction and of a specific gravity of 1004 to 1010. Small amounts of grape sugar and albumin are at times found, but the specific gravity, according to Ruess' table, can not allow large percentages of albumin. Inorganic salts occur in considerable amounts, while inosit and succinic acids are occasionally seen; traces of urea and creatin have also been found. Boinet and Chazoulier discovered and isolated the toxic ptomains of this fluid. The best evidence is in the booklets and scolices of the parasite. Besides these there are observed at times shreds of faintly yellow membrane. These alone constitute a positive diagnosis of hydatids, and yet these microscopic findings are not always present. Virchow was the first to recognize the true nature of echinococcus multilocularis which had theretofore been accepted as colloid carcinoma. Numerous small round cavities filled with a gelatinous fluid constitute in the aggregate a large mass resembling a tumor. The central cavities are often found broken down, or fused, as it were, into a large cavity. Here scolices are rarely found. Daughter cysts become separated occasionally from the maternal growth and lie loose in the fluid, escaping, it may be, in great quantities with the liberated contents. When the primary cyst produces no buds, it is called acephalocyst.

Cysts of the spleen, when small and uncomplicated, present no symptoms and pass unnoticed to the postmortem table or to the grave. When, however, complications or considerable size become features of such a cyst or cyst group, then physical signs and symptoms are present, although they are, by no means, always clear enough to make a diagnosis. Out of seventeen cases in which attempt was made to show some previous or present possible etiology there were five cases preceded by traumatism, five by malaria and two by both. One patient died of mitral affection and two of Bright's disease. One patient developed the initial symptom during an attack of mumps. One developed immediately after parturition, and a second followed parturition, succeeded shortly by trauma. So that we see seven out of seventeen had a history of malaria, in some of whom enlargement of the spleen had been recognized before the cyst formed; and eight, not including one parturient patient, had traumatism over the spleen. Where sex is mentioned the division is equal. The youngest patient having simple or blood cyst was 7 years old. The patient, if the cyst be large enough to call his attention to the fact that a tumor is present, gives a history of the first appearance being in the left hypochondrium and growing down from under the ribs. This he may reduce with more or less completeness back into the original site, but such restoration is, of course, limited by the size of the growth and the extent and density of adhesions. Out of eleven cases of simple and blood cysts only two were fixed. Recognition of cyst development in a misplaced or wandering spleen would be a practical impossibility unless diagnosis of the wandering spleen had been made before cyst formation had begun. In Bardenheuer's case the spleen was in the pelvis. Pressure symptoms and those produced by dragging are the chief subjective evidence that anything has gone wrong. Adhesions aid these in producing symptoms in the case of echinococcus. The habits of a patient or his place of abode may give beneficial help to determine echinococcus, but these have no bearing on simple serous or blood cysts, except in so far as malaria is a causative agent. Nausea and vomiting, together with pain in the left hypochondrium, occur. By pressure, retention of the feces or obstruction of a ureter occurs, or pressure against the diaphragm, heart and lungs is so intense as to produce dyspnea. Some of the cases have had severe colics and some have developed ascites and edema of the legs. Mosler has stated that pain is an early symptom in echinococcus of the spleen, beginning in the left hypochondrium and extending into the lumbar region. In Martineau's case pressure of the enlargement on the lumbar plexus caused pain in the left lower extremity, diminished tactile sensibility and flexion at the hip joint.

The tumor, if large enough to palpate, is found to be movable and easily reducible into the original splenic site in all of those cases of cysts which have not become inflamed and adherent or which are not too large, and in echinococcus which habitually produces more or less peripheral adhesions to adjacent structures so that we may not be surprised to find it thoroughly immovable by manipulation and respiration, and we rarely expect to see it movable without any limitations except the normal supports of the spleen.

The growth may present a fluctuating mass or, if echinococcus, may give the hydatid thrill, but by no means constantly. This is absent in 50 per cent. of cases, especially in solid or deep cysts, and it appears in other conditions, viz., ascites and ovarian tumors, some authors claiming higher frequency for it in the latter conditions. Hence, its diagnostic value is little. The surface may be smooth and even or give a lobulated presentation to the hand, caused by multiple or multilocular cysts.

On aspiration the fluid found will give a clue to the diagnosis. But when suppuration has occurred the characteristics are so obscured as often to be worthless. If there is any probability of such a cyst being hydatid or having suppurated, aspiration should by no means be resorted to for diagnostic purposes.

Differential diagnosis may be made between cystic spleen, on the one hand, and, on the other, abscess of the spleen, ovarian cysts, pancreatic enlargement, hydronephrosis, cysts of the mesentery, and hypertrophied spleen as found in malaria and leukemia. The site of the tumor, the direction of its growth, its attachments or, what amounts to the same thing, the directions in which it may be moved, the pressure and traction symptoms, the constitutional condition of the patient at the time and prior to the beginning of the growth taken together make it possible in some instances to differentiate correctly in these rare cases. In others, even the majority, the surgeon simply will recognize that he has a surgical condition, changing or confirming his first opinion on opening the peritoneum.

Spleen cysts last for years without producing symptoms, remaining in *statu quo,* or gradually or suddenly attaining large size. Echinococcus cyst may terminate by complete disappearance, due to death of the echinococcus or to deprivation of nourishment from calcification of the walls; the more usual termination, however, is by suppuration, or rupture, which may take place into any hollow viscus and allow escape of the fluid, producing a cure; or perhaps into the pleural cavity, causing violent symptoms and even rapid dissolution, or into the lung. The escape of hydatid contents into the body cavities is capable of producing secondary hydatids, as demonstrated by Martin's case. His patient, 37 years old, had had hydatids of the liver ten years and felt something give way in the upper abdomen. Shortly afterward he had pain in the back and the epigastrium, nausea, vomiting and rapid emaciation. On operation the cyst was found ruptured and both visceral and parietal peritoneum were covered with hydatids from the size of a nut to the size of a hen's egg. Though serious, perforation into the peritoneal cavity is not always fatal. Skoda narrates a case in which the principal symptoms were pain, rigors, wiry pulse and cyanosis. Patient recovered.

Henoch claims that the urticaria which sometimes follows the removal of the fluid is due to escape of a few drops into the peritoneal cavity.

The final outcome of cysts of the spleen varies with the type of cyst and the course it pursues. Small simple cysts cause no trouble. Larger cysts produce a more unfavorable prognosis. Blood cysts are more prone to grow, owing to repeated hemorrhages occurring within them. Echinococcus may rupture into a viscus and escape to the outer world, producing cure, or into an internal cavity resulting in death. When abscess formation follows a cyst the prognosis is that of the former. Complete cure follows these cysts rarely, by absorption, shrivelling and calcification of the capsule. This happens in echinococcus only when the tenia is dead, not invariably then.

I lay down as the first rule for treatment that these cases should be operated on by incision, not by puncture, if the cyst is large enough or is producing symptoms enough to demand treatment; I might more correctly, I believe, say if the cyst is sufficiently large to produce clear physical signs, whether the cyst belongs to one or the other variety, for in absence of hydatids elsewhere one can not make accurate differential diagnosis between them. Splenectomy is to be done in those cases in which the organ is so perfectly destroyed as to render it of no further service and not so completely adherent that its removal becomes hazardous. In cases where the spleen is not absorbed and in those where manifestly it can not be removed with safety, the better procedure will be to drain the sac after suturing to the abdominal wound. Giuliano, in an article on blood cysts, states that diagnosis can not be accurate, and then advises either puncture or celiotomy, leaning to the former, if one may judge from the text. Splenectomy, he says, is not warranted in this class. In his researches he has found 15 cases besides his own. Excision of the spleen seems to me a far more judicious operation than simple removal of the diseased area. Hemorrhage can not fail to follow the latter far oftener than the former.

Tapping, injections and excision have no field for usefulness; the treatment must be splenectomy or open cyst drainage. If, however, one can sufficiently assure himself that the cyst is serous or hematic, then aspiration once or twice cures; and, if on reaching the spleen and aspirating, there is no doubt of the condition, a cure may be relied on if all the fluid is removed and the wound closed.

I could find records of eleven patients with serous or blood cysts treated by aspiration, all of whom recovered; eight cases of splenectomy, including my own, in all of which cure followed. One patient was marsupialized after curetting, cured; four patients were treated by injection of caustics, two of whom died; two patients were treated by resection and cautery, both recovering.

My own case is as follows:

REPORT OF A CASE.

History.—Mrs. H. L. S., white, age 39, came to me November 24, 1904, being referred by Dr. J. H. Laws. Patient is American born, housewife. Her father died at 61 years of age of apoplexy. Remainder of her father's family living in good health. She is the mother of six children and had no disease except those of childhood, and "fever" when small. Three years ago she had tertian chills for a period covering about one year. In August, 1903, she first noticed an enlargement in her left hypochondrium, which gave her no pain until the spring of 1904, although it grew steadily. She complained of pain under the left scapula which ran forward and down the left side. Oppression in the region of the heart. The pain under the scapula was increased by pressure on the tumor. There was a dragging, pulling sensation in the hypochondrium. She had noticed an increasing shortness of breath on exertion; this had not been present previous to the development of the tumor. She had lost 14 pounds weight in the past year. She has, for the last month, had considerable nausea and vomiting.

Examination.—There was present on examination an enlargement extending from the margin of the ribs at the left hypochondrium to within three or four inches of the pubic arch. Fluctuation was present, the mass was fairly movable, moved on respiration, and could be reduced into the space underneath the left margin of the thorax, but escaped immediately on removal of the hand. There was no leucocytosis.

Diagnosis.—Multilocular cyst of the spleen.

Operation.—The abdomen was opened through the left linea semilunaris, the incision being six inches long. The cyst was more easily approached through the transverse mesocolon, owing to adhesions between this structure on its upper surface and the spleen. The growth with the spleen was removed without being opened; but on cutting the vascular attachment and attempting to lift the tumor out of the abdomen, cystic fluid escaped through one of the vessels and dropped into the pocket whence the tumor was removed. Hence, not knowing but that I had echinococcus to deal with, the edges of the space were sutured to the wound, which was drained for a few days. The patient left the hospital on the twenty-first day, entirely recovered.

The cyst wall was at places very thin; there were several large pockets intercommunicating, and the splenic substance was obliterated except an ounce or two. The cystic spleen weighed two and one-half pounds. The fluid was clear and colorless. Specific gravity 1006, contained no scolices or hooklets and no albumin. The lining of the cavity contained no epithelial cells and was smooth and glistening and easily separated from the surrounding tissue. The wall was laminated fairly well and contained white fibrous and a small amount of unstriped muscle tissue.

This was, it seems, a case of simple cyst of the spleen and the only etiology discoverable was the fact of a long siege of malaria preceding the formation. I have been unable to determine the connection between cysts of the spleen and enlargements due to malaria.

REVIEW OF CASES OF SPLENIC CYSTS.

Without presuming to make a rigid classification, I give below a brief review of the cysts of the spleen covered in the literature.

DERMOID CYST.

1. Andral: Dermoid. Fibro-serous walls: containing a fatty matter, like tallow, and hairs scattered throughout.

SEROUS CYSTS.

1. Garcia: Man, age, 36, syphilis six years ago, tertian fever cured by quinin; fall from horse causing contusion of abdomen followed soon; one month later localized pains in abdomen; digestion poor, enemas required. Tumor in left hypochondrium, which grew still another month. Puncture liberated odorless gas and tumor diminished; next day second puncture liberated quart of fluid color of white wine, clear, transparent sp. gr. 1004, contained albumin and sodium chlorid. Another puncture after three months, 300 grams; cured.

2. Gauget: Laborer, age 46, alcoholic history, dyspnea on exertion for some months. Symptoms of asystole. Died in collapse. Autopsy: Spleen slightly enlarged and contained yellowish liquid in rounded regular pocket size of hen's egg, and a second the size of a walnut.

3. Leudet: Multilocular serous cyst: volume of spleen normal, surface normal. Cavity of four or five cells in splenic tissue; fibrous wall pavimentous endothelium, and contained serous liquid. This was in a woman 60 years old, who had mitral affection.

4. Foerster: Serous cyst of spleen with cartilaginiform wall seen in the collection at Wurzburg.

5. Crede: Man, age 44, pain five days following trauma over spleen. Tumor size of fist one year before operation in left hypochondrium; grew rapidly to size of fetal head fluctuant, mobile fixed at upper part: confused with hydronephrosis. Splenectomy. Cured. Fluid yellow, limpid, with numerous cholesterin crystals.

6. Mattei: Autopsy: Man, age, 68; spleen weighed 370 grams; tumor size of orange, calcified at points on surface, cartilaginous at other points. Fluid yellow, transparent, contained albumin. The central cyst was size of turkey's egg and had seventeen smaller ones surrounding it. Under microscope, cholesterin, formless masses of lime salts, granulous globules and proteid detritus.

7. Wilks. Old woman died of Bright's disease. Cysts also in kidneys. Cysts of spleen size of walnut and a few smaller on surface. Lined with smooth membrane and contained serum. Says another similar specimen from a man who died of Bright's disease is in Guy's museum.

8. Klippel & Lefas: Man, age 71, attacked long ago by paretic phenomena of four extremities. Autopsy: Spleen weighed 235 grams, and contained a cyst the size of a large walnut, enclosing a clear yellowish liquid, a second cyst size of small walnut, easily enucleable.

9. Boettcher: Multiple serous cyst, amyloid spleen, cysts varied in size from flaxseed to pea, some of them traversed by fine reticulated trabeculæ. Lined with single layer of flat endothelial cells. Due, he thought, to occlusion of arterioles, from amyloid degeneration of their walls, with fatty degeneration softening and sloughing, in parts of spleen pulp.

HEMATIC CYSTS.

1. E. Bocchia: Male, age 24, traumatism over spleen six years ago; pain for some days. Had had present disease three and one-half years. Pains increased with tumor in left hypochondrium. Diagnosis splenic tumor. Puncture. Cured. Dense chocolate-colored liquid, alkaline, and had physico-chemical characteristics of blood. Evacuation next day by incision under cocain, on reaching cyst drew off 2,140 grams of fluid by trocar. Sutured wound. Healing per primam.

2. W. Minervini: Woman, age 44, robust multipara; tumor larger than adult head, in lower abdomen. Immovable. Fluctuating. Laparotomy. Splenectomy. Sero-hematic cyst in ectopic spleen. Claimed to be second thus far observed. Recovery.

3. Porge: Purulent hematic cyst, size of walnut: cyst cavity enucleated, wall thick, fluctuant, yellowish gruelous odorless fluid. Numerous red globules; globules of pus and cholesterin crystals in fluid. From the report I judge this was found post-mortem.

4. Baccelli: Woman, age 27: married three years, pregnant four months. Two months' back traumatism over spleen. Pains after four days, which grew worse. Tumor of left upper quadrant, fluctuant, moved with diaphragm. Diagnosis cyst of spleen, from direction of growth, its connections, and movement on respiration. Two punctures and drawing off hematic fluid. Cured.

5. G. Chavier: Soldier, constipated three days, with some colics; abdomen somewhat ballooned. Put to bed, dieted, given sod. sulphat. That night had violent abdominal pains. Purging had no effect; passed no gas during day. Kicked over spleen seventeen months before by a mule. Died. Autopsy: Much foul gas on incising peritoneum: cyst of spleen, size of a Savoy biscuit, rested on anterior surface of stomach. Not adherent. Contained reddish brown extravasation between capsule and splenic substance; 1.870 grams of fluid. In pocket was organizing brownish fibrous deposit.

6. A. Heurtaux: Woman, age 27, single: Traumatism eight years ago. Pain continued in left side some days. Noticed a tumor a year afterward size of fist, not painful or movable. It had grown regularly since, till now it occupied three-fourths of left side of abdomen. Fluctuating. Diagnosis probably splenic cyst supposedly hydatid. Laparotomy: Cyst largely immobilized by serous leaf covering it. Drew off 9¾ liters, opened, curetted, irrigated, marsupialized and drained. Recovery. Fluid contained blood cells, leucocytes, granulo-fat cells and cholesterin.

7. Livois: Man, age 46. Had severe intermittent fever four years before: tertian. After first attacks had pains in left side and noticed tumor, which grew to large size; fluctuated. Diagnosis cyst: connections not determined. Entered hospital for ulcer of leg. Did well and asked to be released. Eleven days

from entrance had violent colics, vomiting and diarrhea and died in three hours. Autopsy: Much reddish serous fluid in peritoneum. Cyst of spleen, size of ostrich egg, was found. It contained a great quantity of rosy matter, filamentous, and had much affinity with fibrin. Weight of spleen and cyst, 7 pounds. Liver was enlarged and stomach distended with greenish liquid.

8. Pean: Woman, age 20, single. Two years ago had a swelling in the hypogastric region, with pains. Symptoms gradually increased, and became very violent two months before operation, finally unbearable. Tumor in hypogastrium like full term gravid uterus, but fluctuated. Opened abdomen, punctured, drew off 3 liters of thick viscous yellowish fluid. Removed most of cyst and spleen and cauterized remainder. Recovery. Fluid contained albumin, leucocytes, red blood cells, cholesterin and calcareous granules.

9. Pean & Rousset: Girl, age 7, sero-sanguinolent cyst. Diagnosed by puncture. Treatment by caustic. Death two months from beginning of treatment followed by injection iodin, from acute peritonitis.

10. Marcano & Ferecl: Man, age 31, malaria three consecutive years. Three years ago spleen became voluminous, causing dyspepsia. Colics two years ago, dyspepsia, nausea and vomiting after eating. Symptoms again at end of two years, but became better, and recurred after another year. Tumor in epigastrium and left hypochondrium, fluctuating, spontaneous pains not increased by pressure. Puncture, resulted in drawing of 300 grams fluid, chocolate colored, viscous and containing blood cells. Treated by injection of iodin and permanganate of potash, one or other three times a day.

11. Quintard & Pean: Woman, age 53, hematic cyst, treated by caustics. Death some days after opening pouch, due to splenitis and acute peritonitis.

12. Knowsley & Thornton: Girl, age 19. Painful tumor in left side two years, grew rapidly, fluctuating, movable. Diagnosis doubtful, but spleen was eliminated from low position. Splenectomy. Fluid reddish serous with cholesterin. Recovery.

13. Spencer Wells: Woman, age 21, married; at four years had intermittent fever lasting two years. Hypertrophy of spleen. Married at 19 years of age. After one year had diagnosis of ovarian or periovarian tumor. Another diagnosed tumor of left ovary. Had normal labor same year. Tumor descended, not attached to ovary, freely movable. Wells diagnosed hypertrophied spleen. Patient grew much worse. Diagnosis corrected by puncture. Cyst broke during operation, and contained 4 or 5 liters of reddish brown liquid, which showed red globules and leucocytes. There were numerous adherences. Incomplete removal. Cured.

14. Ferrier: Woman, age 33, married twelve years, three children. During attack of mumps one year previous had pains in left side of abdomen, which became larger, growth and pain persisted, tumor to left of umbilicus, size of fist, movable and had large pedicle from hypochondrium. Diagnosis cyst, perhaps hydatid of epiploon or spleen; examination was painful. Laparotomy, excision and cautery. There were many adherences. Contained fluid blood clots, black, but becoming red in atmosphere. Cured.

15. Verneuil: Said he had seen four cases of hematic cysts, three of which were cured by trocar.

16. Chalite: Woman, age 36, had dyspnea, heaviness and abdominal pains. Two years before after parturition swelling of abdomen and edema of legs, abdomen enormous, left side more prominent. Tumor hard, painless, mobile rising below left false ribs. Diagnosis cyst of spleen, possibly hydatid. Splenectomy. Eight liters of brown liquid, in which rags of splenic tissue floated. Cured.

17. Mareschi & Ghetti: Woman, age 42; severe pains in left hypochondrium twelve days after eighth parturition, lasting four or five hours, ceased after twenty-five days. Nine months later pain returning while carrying heavy object; four months later traumatism over spleen, and soon noticed small painless tumor that grew rapidly. It was movable, elastic, fluctuant. Splenectomy. Weight, 1,315 grams, contained blackish limpid liquid showing white and red cells. Recovery.

18. Barbacci: Autopsy: Found cyst of spleen size of hen's egg. Transparent viscid fluid, color of gold flowed, coagulum of fibrin in pocket. He found a second cyst size of a lentil with similar fluid, alkaline and albuminous. He called this a lymphatic cyst.

19. H. C. Cutcliffe: Male, age 40, had intermittent fever four months and enlarged spleen. Twelve days ago swelling in left side under ribs, preceded two or three days by acute hypochondriac pain. Tumor hard and free from tenderness; after five days seemed to fluctuate. Punctured. Found degenerated blood. Cured.

20. Spillman: Man, age 51, sick three days; this appeared suddenly, with violent shivering in left side, followed by a dry, painful cough, dyspnea. Died in ten days. Autopsy: Spleen contained cyst size of fetal head, contained yellowish liquid, cholesterin, fluid red by transmission. Density of water. Analysis proved to be hematic.

21. Giuliano: Man, age 33, Malaria for some years, six months before coming to Giuliano had trauma of left hypochondrium and felt intense pain. Large tumor in left hypochondrium, connected with spleen. Puncture liberated degenerating blood. Recovery.

22. Baginsky: Girl, age 13, cystic tumor connected with spleen, resulted from trauma and increased gradually. Puncture brought 2 liters of red brown liquid containing many red corpuscles.

Below I give another group not definitely classified by the men who found them.

1. Piccinelli: Priest, age 67, digestive disturbances thirty years before. In time oppression in epigastric region. Sharp, darting pain behind left hypochondrium five years ago while at a banquet, and extended to splenic region, where it remained. Became worse with complications till death. Autopsy: Spleen in place, undersize, contained a hard tumor larger than hen's egg, situated at the hilum, and full of knobs. Incised with difficulty and viscid gelatinous fluid came out: an ossified cystic tumor.

2. Giovinardi: A pathologic specimen, consisting of a cyst crétified in its walls, which he found in the spleen of a cadaver. It contained an albuminous liquid which effervesced in hydrochloric acid. Cyst was the size of a small nut.

3. J. H. Haswell: Man, age 57, died of cancer. Fullness of left hyponchondrium noticed before death. Fluctuation. Contained on puncture small amount of whitish débris, showing microscopically fatty globules, cholesterin and a few granular red bodies. Spleen and cyst weighed 3¾ pounds. On opening, a semipultaceous matter exuded, mostly in rounded masses of a dirty yellow; among these were round, jelly-like globules, the size of a walnut, from which puncture brought a clear fluid. No hooklets or scolices were found nor any dermoid structure. Haswell calls this a mucous cyst. Almost certainly it was echinococcus.

4. Bardenheuer: Woman, age 47, a few months previous had vivid pains in left hypochondrium. Tumor appeared and was diagnosed cyst of ovary. Bardenheuer saw patient six months after beginning of pain. Tumor in pelvis size of infant's head, pushed uterus slightly to right. Slightly movable. Diagnosed cyst of left ovary. Exploratory incision. Resection and cautery. Recovery. Contents not given.

INDICATIONS FOR THE REMOVAL OF THE PATHOLOGIC SPLEEN.*

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OMAHA, NEB.

Case 1.—Miss S., clerk, aged 40, presented herself at the clinic of the University Medical College January 27, 1904, with the following history:

History.—Family history negative. One year ago she had German measles. Two weeks later she contracted a severe cold which lasted two weeks, and she has not felt well since. She is prone to headaches and becomes easily tired. For past six months she has complained of languor and weariness on slight exertion; also of a nausea, faintness, shortness of breath and occasional sharp pains in her left side near the costal arch. In November, 1903, she discovered an enlargement in the left upper quadrant of the abdomen extending below the arch of the ribs. She was able to continue her occupation, that of clerk in a dry goods store, until December, 1903, when she was compelled to stop it on account of the increasing muscular weakness and her inability to stoop because of pressure and soreness caused by the abdominal growth. She has never lived in a malarial district.

Examination.—She is a small woman of an anemic appearance, somewhat emaciated. A firm tumor is to be felt in the left upper quadrant extending to the median line; it moves with respiration and cannot be pushed up under the ribs. The condition excited Dr. Thomas Truelson's suspicions and he made a blood count which is recorded as follows:

Reds	3,968,000
Whites	9,600
Polynuclears (per cent.)	77
Small lymphocytes (per cent.)	17
Large lymphocytes (per cent.)	5
Eosinophiles (per cent.)	1
Hemoglobin (per cent.)	37

The heart was somewhat more rapid than normal, lungs and liver were normal. Dr. Truelson felt justified in making a diagnosis of splenic anemia and put her on medical treatment and made numerous blood counts. I am greatly indebted to Dr. Truelson for the benefit of his careful and frequent clinical records extending over a year.

In the summer of 1904 I saw her and the condition was about the same.

Later History.—Early in January, 1905, she became shorter of breath, more nauseated, had considerable rise of temperature for a period of two weeks, with pain in the region of the splenic enlargement, and distinct tenderness on pressure. The mass now became distinctly larger and was less movable than before. She also complained of increased difficulty in stooping, evidently because this caused pressure of the mass between the posterior bony wall of the abdomen and the arch of the ribs in front. For some time she had complained of a dry cough which she said seemed to be excited by a dragging or pulling sensation at the lower part of the left lung. There was no hemorrhage from the mucous membranes or diarrhea.

After she had recuperated from her febrile attack the question of splenectomy came to the fore with more force, since she seemed to be losing ground and it was realized that to wait longer would only increase the risks of a successful operation.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

Operation.—February 23, 1905, it was decided to send her to Immanuel Hospital for operation. The enlarged spleen at this time extended to the level of the umbilicus, and two inches to the right of the median line. The patient was more emaciated than at the beginning, weighing 95 pounds and for several months the characteristic bronzing of the skin had become more and more noticeable.

On the day of the operation the blood count was as follows:

Reds	3,936,000
Whites	15,600
Hemoglobin (per cent.)	38

The patient was operated on February 25, 1905, at Immanuel Hospital, in the presence of the students of the College of Medicine of the University of Nebraska and several visiting physicians; the spleen was removed. An eight-inch incision was made through the left rectus muscle from the ribs downward, separating the fibers of the muscle. Universal adhesions were at once apparent fixing the hypertrophied spleen to all the surrounding viscera. Remembering the unfavorable prognosis under such conditions the removal was done with the utmost caution. By ligating the vascular adhesions in two places and then cutting between the ligatures a remarkably small amount of blood was lost. The gastro-splenic ligament was treated in the same manner. Finally, by turning the spleen toward the left the vessels of the pedicle were ligated with silk, separately, and the removal was complete.

Large gauze pads wrung out of very hot water were pressed into the cavity formerly occupied by the enlarged spleen and this very soon stopped the slight oozing. The abdominal wound was closed and the patient put to bed with considerable shock, from which she soon rallied.

Result.—Her convalescence was uneventful. There was no fever and no increase in the pulse which remained almost constantly at from 80 to 84 beats a minute. She was allowed to sit up on the sixteenth day and to leave the hospital in three weeks.

Examination of Spleen.—The hypertrophied spleen was found to weigh six pounds and one ounce. It was lobulated, the edges were rounded and on the cut surface large necrotic areas presented themselves, the appearance being suggestive of sarcoma.

Subsequent History of Patient.—Very soon after the operation the patient began to gain in weight and the last I heard from her, May 25, three months after the operation, she wrote that she had gained 25 pounds. Her faintness, shortness of breath, muscular weakness, etc., have been steadily less marked. The bronzing of the skin began soon to disappear and when she left Omaha, two months after the operation, her skin had lost all trace of it.

A leucocyte count the day following operation showed 27,-000 leucocytes. The further detailed report will be published by Dr. Thomas Truelson, who has worked out the clinical and pathologic data in the most thorough manner, to whom I wish to express my thanks.

FUNCTIONS OF THE SPLEEN.

Until the physiology of an organ is known its pathology is likely to be elusive. On the other hand, a study of its pathology is often rewarded by a clearer knowledge of its physiology.

Regarding the function of the spleen about all that can be definitely stated is that it belongs to the hematopoietic system. The exact nature of its function is yet conjectural. That it manufactures white blood corpuscles, that it breaks up and destroys the reds, and that the splenic cells liberate hemoglobin, which passing to the liver is there transformed into bile pigment, are some of the functions commonly associated with the spleen.

That all these functions are performed by the spleen, in the light of recent observations, is inconceivable. Against the time-honored opinion that the lymphoid tissue of the spleen manufactures white blood corpuscles and destroys the reds is the undisputed fact that during the first few days after the spleen has been removed the number of leucocytes increases more than 100 per cent., while the number of red blood corpuscles is considerably diminished.

If a factory having almost a monopoly in the manufacture of a certain commodity be burned, there would scarcely be likely to be an immediate increase of that article on the market. The logical deduction is that instead of elaborating white blood corpuscles the spleen destroys them, and the decrease in the reds points to the spleen as their manufacturer—not as the place of their destruction.

These deductions support the opinion of Vulpius that the spleen transforms the whites into reds. Vulpius reached this conclusion by observing that when the spleen is congested by natural or artificial means the blood habitually contains a maximum number of reds and a minimum number of whites.

Williamson[1] found that by a special method of staining he was invariably able to determine nucleated red blood-cells, many of them in a state of nuclear division, in spleen smears of hogs and cattle. The same observation had previously been made by Arteaga,[2] of Havana, using the spleens of cats and dogs. In fact, most of the experiments of recent years lend support to the opinion that in vertebrates the function of the spleen is the manufacture of red blood corpuscles.

That the spleen is an important elaborator of the blood directly or through the medium of an internal secretion which performs that function is further proved by the well-known fact that an acute anemia caused by hemorrhage is always followed by a temporary enlargement of the spleen, due no doubt to an extra amount of work being thrown on it in an effort to make good the loss. If its function was to destroy red blood corpuscles and to elaborate leucocytes would there be need of an increase of its function?

If we adhere to the orthodox opinions, the opinions laid down by the text-books on physiology, we would *a priori* expect splenectomy to induce immediately a great decrease of the whites and an increase of the reds, a phenomenon directly the opposite of that universally observed. Continued careful observations of the blood changes in pathologic conditions of the spleen, as well as of the condition of the blood after splenectomy, are likely to place the physiology of this organ on a securer basis than the purely speculative one of the physiologists.

One of the most attractive fields for physiologic research is along the lines of the internal secretions. It is not necessary to believe that all the influence the spleen exerts is carried out within the organ itself. A toxin or toxins may be elaborated by the splenic cells, which, passing into the circulation, may exert a profound influence over the elaboration of the blood. Although certain blood changes may, and probably do, occur within the spleen, they may be of only minor importance. The major function may be the production of a powerful chemical agent which is projected into the circulation and does its work within the vascular system.

SPLENECTOMY.

In the history of the development of splenectomy as a surgical procedure numerous mistakes have been made. Ignorance of its physiology has led to much blind groping to learn something of the pathology. Many spleens have been removed that should not have been treated surgically and many fatalities are to be charged to insufficient knowledge of the limitations of splenectomy as a curative measure.

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[1] Williamson: Amer. Med., June 3, 1905.

[2] Arteaga: Amer. Med., May 14, 1904.

The border lines between the conditions that may be dealt with surgically and those to be left untouched are becoming better defined though not yet as definite as would be wished. Every item that may aid in increasing the knowledge of the physiology and pathology of this organ, as well as to clear up points in diagnosis is of the greatest value. Unfortunately, the blood-findings before and after splenectomy have been completely recorded in only a few instances.

The discussion of the immediate and remote results of removal of the spleen has been so largely entered into and so recently by such men as Warren,[3] Harris,[4] Bessel-Hagen[5] and many others that it will be passed over briefly. A few well worked out facts may be enumerated. Almost without variation, splenectomy is followed by a marked leucocytosis, the number of leucocytes increasing daily until the maximum is attained in from ten days to three weeks, when there is a gradual diminution and in from four to six months they reach normal again.

The number of red cells, on the contrary, is diminished though in a less proportion and normal is not usually reached until six months or more after the spleen has been removed. These facts seem to show that although the function of the spleen may be performed by other tissues, this vicarious power is gained very slowly.

There is also a decrease in the amount of hemoglobin following the splenectomy. This decrease is not dependent on the loss of blood during the operation. There has also been found to be a permanent increase in the eosinophiles in all observed cases.

In a number of observations the lymph glands have been found considerably enlarged within a short time after the spleen has been removed, an enlargement which did not exist before operation.

The marrow of the bones is found to be denser and a deeper red, and complaint has occasionally been made by patients of an aching sensation in the long bones the first few days after loss of the spleen.

The condition of the blood, in most of the cases observed that long, has been found to have reached normal in six months after the operation and the restoration to health has been complete and permanent as far as observations have been made.

Theoretically, it was supposed that loss of the spleen would lower resistance to infection. Blumreich and Jacoby[6] have proved that a splenectomized animal has as much resistance to infection with bacteria or toxins as if a spleen were present. No observation has been made of any human subjects showing greater susceptibility to infection after splenectomy than before.

MORTALITY FROM SPLENECTOMY.

Having shown that the loss of the spleen is not incompatible with the continuance of life and good health it will be of interest to notice briefly the mortality from the operation. As in the development of all operations, the mortality from the earlier operations is much higher than it should be. Many spleens have been removed that no one would think of removing now. There are certain absolute contraindications to the operation, of which leukemia, atrophic cirrhosis of the liver and amyloid spleen are the chief. Some have considered dense adhesions to the surrounding viscera a contraindication, but the question of when such spleens are to be removed is largely a personal one and will depend on individual experience.

From all I can gather from a fairly close scrutiny of the literature I believe the present mortality of splenectomy for all appropriate conditions to be not more than from 15 to 18 per cent. Bessel-Hagen[5] even considers the mortality when there is a real reason for splenectomy to be only 12.2 per cent. When it is remembered that the mortality in these cases before 1890 was probably over 50 per cent., it shows flattering improvement. Perfection of the technic, a more judicious selection of cases and operation at a more favorable period have brought about this lower mortality and will doubtless produce still greater reduction as experience increases.

INDICATIONS FOR SPLENECTOMY.

Given then the proper indications, splenectomy is a proper operation. Its mortality is still sufficiently high to be prohibitive except for a condition incurable by any other method of treatment, or so troublesome that the patient is willing to run a considerable risk for the sake of being rid of his suffering.

In echinococcus or other cysts of the spleen, its removal is practically the only choice, except when adhesions to the abdominal wall, the diaphragm or the abdominal viscera are so great that the mortality would be prohibitive. In such cases, drainage with marsupialization of the cyst cavity has proved satisfactory, though the period of convalescence is likely to be tedious and uncertain.

Cases of abscess of the spleen must be judged on their merits. It certainly would not be good surgery to sacrifice the entire organ, if drainage would do as well. In cases of perisplenic abscess thorough drainage is in most cases the procedure to be preferred. The same may be said of a single abscess contained within the spleen, if the greater part of the splenic tissue be intact. In multiple abscesses, or when an abscess is very large and a great part of the spleen is infected or destroyed, doubtless better and safer results will be attained by entire removal of the organ.

In tuberculosis, if the organ be extensively invaded, splenectomy is the only treatment that will prove satisfactory. In those rare cases in which only the lower extremity is invaded by the tubercles resection well beyond the disease seems to be the operation of choice.

In sarcoma, an early splenectomy may prove curative, but most of the operations are likely to be so late that an early recurrence will be the rule. Exploratory operation as soon as there is a definite suspicion of sarcoma is the only treatment which gives promise of benefiting this class of patients.

TRAUMATIC RUPTURE OF THE SPLEEN.

The most constant symptoms of splenic rupture are collapse from hemorrhage, rigidity of the abdominal muscles on the left side and the occurrence of dullness in the left upper quadrant and the left flank if the hemorrhage is extreme.

Makins, in 292 cases of injury of the abdominal viscera, found rupture of the spleen in 30 per cent. of them, which proves it to be far from rare.

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3. Warren: Annals of Surg., May, 1901.
4. Harris: Annals of Surg., July, 1901.
5. Bessel-Hagen: Arch. f. klin. Chirurgie, lxii, 1900.
6. Blumreich and Jacoby: Zeits. f. Hygiene, xxix, 1898.

A blow or wound in the splenic area followed by symptoms indicative of severe internal hemorrhage should excite a suspicion of rupture or wound of the spleen and an immediate abdominal section should be done. The course to be pursued will be determined by the conditions found. Splenectomy, suture of the rent, and tamponade each has its place, and on the judgment displayed in selecting the proper procedure much depends.

Death following rupture of the spleen is almost always due to hemorrhage, though it may be due to peritonitis, especially if it is caused by a penetrating wound. Edler[7] states that injuries of the spleen are fatal in 76.6 per cent. of the cases when no operation is done, while Lewerenz[8] claims that the mortality is 85 per cent. In 50 cases of ruptured spleen recorded by Eisendrath[9] in which laparotomy was performed, 28 patients recovered—a very forcible argument in favor of operation. One should not wait for recovery from the collapse, since the hemorrhage is continuous, and if the injury is serious the collapse will become more profound until death supervenes. It is an operation of emergency and should be done at the earliest possible moment. If the diagnosis is not absolutely convincing, it is much more dangerous to wait than to operate when the symptoms point definitely toward an injury in the left upper quadrant. If not the spleen, in all probability some other viscus needs attention.

When the abdomen has been opened and the spleen examined, a decision for or against splenectomy must depend on the extent and character of the injury and the possibility of controlling the hemorrhage by means of suture or tamponade. In general, if the injury is cortical and on the convex border well away from the arteries, not very extensive, and there is not too much pulpification of the splenic tissue, a well-placed tampon may control the hemorrhage. If it is determined to test the effect of tamponade, the operation should not be concluded until the tampon is found to be effective. If the hemorrhage is not checked by this means, the spleen should be removed at once before any more blood is lost. It is only very rarely that suture will be of benefit. The splenic tissue is so friable that the sutures cut out and the hemorrhage is likely to be made worse.

If the injury is a severe one to the lower extremity of the organ and the remainder is intact, a partial excision may be practiced, if the patient is not already too much exsanguinated.

If the injury is extensive and the hemorrhage extreme, splenectomy will be followed by the best results. Warren[3] records 34 cases of splenectomy for ruptured spleen since 1890, with a mortality of 41.2 per cent. Senn[10] says that ligation of the splenic artery will control the hemorrhage, but is followed by death due to toxemia, a poison being produced in the spleen which finds its way to the peritoneal cavity, where it is absorbed with fatal results.

Another important factor which should be taken into consideration in dealing with a ruptured spleen is that the pathologic spleen is easily injured. Lewerenz[8] found that of 131 cases of ruptured spleen, 82 occurred in previously pathologic organs. Such a spleen should be removed for slighter injuries than if the organ was previously sound.

WANDERING SPLEEN.

There are always two important questions in connection with wandering spleen: 1. Does the condition produce sufficient symptoms to demand any surgical intervention? 2. If so, shall splenopexy or splenectomy be done? In answer to the first question, no report has been made of wandering spleen, in which the symptoms have not been so distressing that operation was practically imperative.

To the second question, the answer is not so simple. The natural conclusion is that splenopexy is the safer and more conservative operation.

The facts seem to be that the idiopathic wandering spleen is of the greatest rarity and it is usually caused by hypertrophy. With this understanding of the rationale of wandering spleen, there seems the narrowest conceivable field for splenopexy.

If sufficient splenic hypertrophy is present to have stretched the ligaments and dragged the organ away from its moorings, splenopexy will not hold the heavy pathologic gland in its normal position, and if it did the primary disease would not be cured. It might be said that almost all hypertrophied spleens are wandering spleens within certain limits. The rational treatment here would be to perform splenectomy if the spleen be affected by a form of hypertrophy which is curable by this means, otherwise to let it alone.

There is one exception to the rule that a wandering spleen was a hypertrophied spleen before it began to wander. It is that rather large class of cases in which a general splanchnoptosis exists, the wandering spleen being simply an incident and certainly not to be treated by splenopexy, unless in conjunction with fixation of other viscera.

The mortality of splenectomy for wandering spleen is fortunately low. Warren[3] collects 43 splenectomies in ten years for this condition, with only three deaths, or only 7 per cent.

Wandering spleens have frequently been mistaken for ovarian cysts, uterine fibroids and movable kidneys.

MALARIAL SPLEEN.

Most writers on the surgery of the spleen previous to 1890 condemn splenectomy for malarial hypertrophy. In most cases, successful treatment of the malaria is followed by a gradual involution of the hypertrophied spleen until it reaches normal. It is not always possible, however, to attain this result, and antimalarial medication is fruitless so long as the spleen is retained, but is easily cured after removal of that organ.

Laveran states that the spleen does not protect against malaria, as has sometimes been asserted, but is a receptacle and habitat of the malarial organism. Jonnesco[11] is of the opinion that the removal of the spleen from a patient suffering from malaria cures the malaria by removing the breeding place of the organism. This seems reasonable and the results of splenectomy of the malarial spleen bear out Jonnesco's statement.

Bessel-Hagen[5] has collected records of 88 splenectomies for malarial spleen. Of this number, 24 were done prior to 1891, with 15 deaths, a mortality of 62.5 per cent.; 64 occurred between 1891 and 1900, with 15 deaths, a mortality of 23.4 per cent. A decrease in mortality from 62.5 per cent. to 23.4 per cent. in a single decade goes far to explain the change of opinion of surgeons relative to splenectomy for this condition.

Caution is needful not to subject patients to splenectomy for malarial spleen, unless the condition positively can not be relieved by medical means, but the operation should not be delayed until ascites is present.

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[7] Edler: Arch. f. klin. Chirurgie, xxxiv.

[8] Lewerenz: Arch. f. klin. Chirurgie, lx, 1900.

[9] Eisendrath: Annals of Surg., December, 1902.

[10] Senn: The Journal A. M. A., Nov. 21, 1903.

[11] Jonnesco: Gazette des Hopitaux, lxxi, 1898.

The size of the malarial spleen does not seem to be a factor affecting the mortality, as the largest spleens have been removed with no higher mortality than those of moderate dimensions.

SPLENIC ANEMIA.

There seems to be considerable confusion in the nomenclature of the disease characterized by primary splenic hypertrophy, a decrease in the number of red blood corpuscles, a slight leucopenia, with progressive weakness, hemorrhages from the mucous membranes, vomiting, diarrhea, bronzing of the skin and death in a period varying from six months in the more rapid cases to ten or fifteen years in the slower ones. All these cases, so far as I can determine, are later complicated by hypertrophy of the liver—not always a true cirrhosis—ascites, and all the syndromes described by Banti[12] in his classical paper. Splenic anemia, primary splenomegaly, splenic pseudoleukemia and Banti's disease are doubtless one and the same, masquerading under different names.

This statement seems called for, because of a tendency on the part of some writers to refer to primary splenomegaly, splenic anemia and Banti's disease as three separate and distinct entities. Primary cirrhosis of the liver, with secondary hypertrophy of the spleen, should not be confounded with splenic anemia; neither should any confusion remain regarding splenic leukemia, which stands by itself, being characterized by a marked decrease in the reds and an immense increase of the whites. Even here it is not correct to say that if the proportion of whites to reds is 1-50 it proves the disease to be splenic leukemia and otherwise not. Osler[13] reports a case of true splenic leukemia in which for a protracted period the number of white blood cells was normal, and Murrell[14] states that often the number of leucocytes in splenic leukemia remains normal or nearly normal much of the time. The one test in these cases seems to be the presence of myelocytes, which always proves it to be splenic leukemia.

The following question is of the utmost practical importance: Is splenic anemia a primary disease of the spleen and are the blood changes and other symptoms secondary, or is the splenomegaly merely an incident to a general disease, or is it secondary to the blood changes? Osler[13] takes the ground that the enlarged spleen and the changes in the blood are both produced by the same general condition. If this were the case, it would not be logical to suppose that the removal of the spleen would bring restoration to health. The fact that this does occur has been definitely proved by hundreds of cases.

The views of Sippy[15] seem more nearly to conform to the known facts. He believes the disease of the spleen to be the primary pathologic entity and the blood changes, *et cetera*, to be the product of the splenic pathology.

Whether the anemia is produced by failure of the diseased spleen to elaborate red blood cells, assuming this to be its function, is not proved, but seems probable. Possibly chemical agents are elaborated in the pathologic spleen, which, either in the gland, or after they gain access to the circulating blood, inhibit the production of red blood corpuscles or cause their dissolution and thus induce anemia.

This might be determined by injecting the filtrate of the pulp of a hypertrophied spleen into the circulation of animals. The only experiment of this kind I know of was that of Sippy,[15] but the rabbit unfortunately died too soon to show blood changes. This opens up the possibility of some interesting research along this line, a dose being ascertained that will prove or disprove the existence of a poison inimical to the existence of red blood cells, without being fatal to the test animal.

The cause underlying the hypertrophy of the spleen is not easy to determine. Barr considers it due to a vasomotor paresis of the splanchnic area, arising from disease of the visceral sympathetic ganglia, a theory not proved, but possessing the merit of not being easily disproved.

In the absence of any rational explanation, it becomes necessary to accept the conditions without being able to explain the rationale on which they are based.

The fact that removal of the diseased spleen is usually followed by a still greater diminution of the red blood cells would argue that the pathologic organ, though not possessing its physiologic activity, is not by any means functionless, or there would be no further reduction in the number of reds after splenectomy.

The diagnosis of splenic anemia, if errors would be avoided, should be reached by the greatest care in getting all the facts and eliminating sources of errors. As has been shown by the experience of Osler[13] and Murrell,[14] a case of leukemia during one of those periods when the number of leucocytes is normal, by a careless observer, might be diagnosticated splenic anemia. The presence of myelocytes ought to prevent such an error.

The congested spleen caused by cirrhosis of the liver ought to be recognized from the history and the condition of the liver, though there is not always any material difference in the blood changes. The spleen enlarged secondarily to liver cirrhosis is not nearly so large as the spleen of primary splenomegaly. In liver cirrhosis secondary to splenic anemia, and explained by Banti as due to a toxemia, the products of which passing through the liver cause hyperplasia of the connective tissue such as is found in alcoholics, comes late in the disease, the enlargement of the spleen having existed for months or years before the hepatic condition.

In the amyloid spleen a secondary anemia is always present and the patient's general condition and history ought to prevent mistakes if one is careful.

In malarial spleen, the history is of the greatest value in avoiding diagnostic error.

In splenic anemia, the red blood corpuscles are not greatly reduced in number as a rule. Probably in the majority of cases they will range from 2,500,000 to 4,000,000 in the c. mm., though they may be reduced as low as 1,500,000 or go as high as 5,000,000.

The whites are usually somewhat less than normal. A decided leucocytosis should produce a suspicion that it is not splenic anemia, or one should look for some coincident or accidental cause for the leucocytosis.

The hemoglobin is usually very low and the color index much less than normal.

In pernicious anemia the spleen will be found only moderately enlarged, the reds lower than usually found in splenic anemia. Myelocytes are found in more than half the cases of pernicious anemia, as shown by Cabot's[16] table.

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[12] Banti: Berliner klin. Wochft., 1886.
[13] Osler: Amer. Jour. of Med. Sci., January, 1900.
[14] Murrell: Medical Manual, 1904.
[15] Sippy: Amer. Jour. of Med. Sci., October and November, 1899.

The details of arriving at a correct diagnosis are given so fully by several recent writers that nothing more need be said on this point, except to urge that when a suspicion is aroused of the existence of this disease no detail should be omitted in trying to arrive at a correct diagnosis as soon as possible. The only treatment is surgical, and the sooner the spleen is removed the better will it be for the patient. When early operation becomes the rule, before the patient becomes too greatly reduced by the ravages of the disease, the lower will be the mortality.

SUMMARY OF THE MAIN POINTS DISCUSSED.

1. The more probable function of the spleen is the manufacture of red blood corpuscles, with a strong probability of the existence of an internal secretion which is of value in maintaining the proper relative proportion of the elements of the blood.

2. Splenectomy is contraindicated in leukemia, amyloid spleen, splenic hypertrophy secondary to cirrhosis of the liver, secondary malignant disease and in the essential anemias.

3. Splenectomy is usually preferable to splenopexy in wandering spleen, which is almost always due to previous hypertrophy.

4. In abscess of the spleen, if drainage can be successfully accomplished, it is preferable to splenectomy, especially if the splenic tissue is not destroyed.

5. In cysts, benign tumors, tuberculosis and sarcoma, splenectomy is the operation of choice, unless in the three former conditions resection of the lower extremity will remove all of the disease.

6. In rupture, the organ should usually be removed. The operation should be done promptly, expeditiously, and with every expedient calculated to relieve and to prevent shock.

7. In the severe type of malarial spleen, with failure of any relief of the malaria or the extreme splenic enlargement by medical means, splenectomy will often result in cure.

8. In splenic anemia, internal medication has proven futile. The only treatment that should be considered is splenectomy, which should be done at as early a period as possible while the patient is able to withstand the operation and before incurable complications have arisen.

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DISCUSSION

ON PAPERS BY DRS. BRYAN AND DAVIS.

Dr. M. L. Harris, Chicago, said that one of the most interesting and important conditions which has recently been taken from the hands of the internist and transferred to the surgeon is that of splenic anemia or so-called splenomegaly. Proper blood examinations made before and after splenectomy show that the primary condition is probably in the spleen. In all of these cases, before operation, we find that there has been a destruction of the blood cells—excessive hemolysis. He did not agree with the statement that the experiments show, or tend to show that the spleen in splenic anemia produces red blood cells. Immediately after the removal of the spleen in these cases there is a marked increase in the number of red blood cells, which would show that the red blood cells are not produced by the spleen. In two cases in which he operated for the removal of the spleen, within twenty-four hours thereafter, there was an increase in the number of red blood cells of from 25 to 40 per cent. and in one case there was an increase in the whites of 800 per cent. If these figures show anything it is that the spleen had destroyed both the red and white cells. The fact that there is always a diminished number of red blood cells, and that these cells, after the removal of the spleen, return to their normal number and remain there would indicate that in the enlarged spleen there had been excessive hemolysis. Whatever the function of the spleen may be in regard to blood formation or blood destruction, however, it is not an essential function, because patients live and maintain perfect health after the spleen has been removed. The one feature in the composition of the blood which seems to be permanent and constant after the removal of the spleen is a marked increase in the percentage of the eosinophiles. Whether the spleen has been removed experimentally or for pathologic reasons there has occurred an increase in the eosinophiles often to a remarkable extent and this increase has been permanent. It is now more than six years since Dr. Harris first removed the spleen for splenic anemia, and he has made repeated examinations of the patient's blood every three or four months since. The eosinophiles have increased to 15 per cent. and the percentage has returned to the normal and remained so. The eosinophiles are very marked and pronounced, the granules are extremely large, and they take the stain very brilliantly. This, Dr. Harris said, is the only permanent and marked change that we have been able to discover in the blood after splenectomy.

Dr. Charles A. Powers, Denver, declared that he has recently investigated the subject of cysts of the spleen and he agreed with Dr. Bryan that non-parasitic cysts of this organ are of a sero-sanguineous type and generally sub-capsular. The hemorrhages increase from time to time, and often extend over several years. Less frequently the hemorrhages are sub-peritoneal, at times they may be parenchymatous. In his case, the patient, a young man of 18, who was sent to me from Manitou, was operated on in 1895. He had an enormous left-sided abdominal tumor extending from the diaphragm to the pelvis and over to the right side. After careful examination Dr. Powers decided that it was probably a splenic cyst and operated. The wall of the cyst was densely adherent everywhere to the abdominal wall, and extirpation was impossible. Through drainage was made; the walls proved to be semi-fibrous. The cavity did not shrink, septic absorption took place from the cyst wall, and the patient died on the twelfth day. Autopsy showed the growth to be impossible of extirpation. In his search of the literature he discovered 32 of these cases, of which 28 were available for study. Of these 28 patients 3 were treated by puncture, 2 by incision and injection, 5 by extirpation of the cyst and 10 by splenectomy. Of these various procedures the only one which proved satisfactory was splenectomy: all of the ten patients so operated on recovered. Splenectomy then, is the operation of choice when it is possible.

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[16] Cabot: Clinical Examination of the Blood.

Dr. R. E. Schlueter, St. Louis, mentioned a case of traumatic rupture of the spleen which he saw ten hours after the injury. The spleen had been completely cut in two and on opening the abdomen the two halves could be seen distinctly separated. The patient was a boy, aged 14. The abdomen was opened in the median line and by forcible traction on the belly wall the spleen was easily removed. The hemorrhage was completely arrested before the operation and the boy apparently recovered from the shock. Subsequent to the removal a slight enlargement of all the lymphatic glands of the body was noticed, and also a leucocytosis which never went above 20,000.*

Dr. A. H. Cordier, Kansas City, said that it was important to know if the disease is primary or if it is a secondary manifestation of some disease in another part of the body. He mentioned the case of a man, aged 21, who had had jaundice for 19 years. Dr. Cordier did a cholecystenterostomy at which time he noticed that the liver was very much enlarged and changed, and that the spleen also was enlarged. The patient's billiary symptoms were relieved, but owing to the changes that had taken place in the liver and spleen Dr. Cordier was afraid the results might not be permanent. A year and a half later the man returned with a typical case of splenic anemia. The liver was very much contracted. There is a class of cases occurring in drinking individuals in which there is an enlargement of the spleen, and surgeons must be very careful in their choice of operation. It is a fact that in all of these cases in which there is a contraction of the liver or the spleen there is very rarely ascites accompanying it. Enlargements of the spleen seem to be conservative in a measure, in such cases. Careful diagnosis before operation is very important in order to obtain satisfactory results.

Dr. H. G. Marxmiller, Cincinnati, said that the subject should be divided into two parts, surgical spleens and medical spleens, and it behooves surgeons to be positive in their diagnoses before endeavoring to remove spleens that are only apparently surgical. It has been his good fortune, or misfortune, to see this operation done by many good men where simple hypertrophy of the spleen has been diagnosed as some other condition, such as Banti's disease, splenic anemia, etc. If one will take a dried specimen of the blood and properly stain it the condition of the blood can readily be brought out, and the presence or absence of leucocytes or myelocytes or eosinophiles should caution the surgeon as to the removal of the spleen. Perhaps in a few instances the spleen can be removed with good results. Splenectomy for leukemia and allied conditions has given a mortality of almost 100 per cent. and we should not be quite so bold in the removal of these spleens. Senn, Dock and others have reported cases of splenic anemia that sometimes follow protracted cases of typhoid and malaria, in which complete recovery has followed the use of the *x*-ray. Dr. Maxmiller has had under observation for several years a case of chronic myelogenous leukemia. When he first saw the case, the patient had all the symptoms of splenic enlargement. The spleen reached to the brim of the pelvis and increased the abdominal circumference by eight or nine inches. Although operation had been recommended it would have been folly to have removed this spleen. The presence of the subcutaneous extravasation of blood and the approach of the fatal termination was almost apparent. This case was controlled by the internal medication of adrenalin chlorid, 1-1000 in thirty minim doses, four times daily, and the application of *x*-ray directed to the splenic substance. The spleen has been reduced almost to its normal size and the patient has continued up to the present time in good health. Cases have been reported in which even in simple anemia, with hypertrophied spleen, splenectomy has been done, and following this death has occurred from hemorrhage, patients succumbing within a period of from three to seven days following operation. A thorough diagnosis must first be made and then an endeavor to relieve these conditions by other methods before attempting splenectomy.

Dr. McDaniels, San Antonio, reported the case of a woman from whom he removed the spleen six years ago and who has since borne children and remained well.

Dr. W. Jepson, Sioux City, Iowa, said that in considering affections of the spleen from the standpoint of the necessity of removal of that organ, he thinks these can be classified under several headings. First, those affections which are primarily of this organ, as for example; sarcoma, carcinoma, various forms of cysts, tuberculosis and miliary abscesses. Under this heading may also be classed injuries and displacements of the spleen. Second, affections of the spleen which are secondary to pathologic processes located elsewhere in the economy, as for example: the splenomegalies of malaria, leukemia, splenic leukemia, etc. The first class of cases cited demand splenectomy because the pathologic process can not be otherwise satisfactorily dealt with. In the second class of cases, in which the splenomegaly is secondary to a primary process located elsewhere, splenectomy can hardly, in his opinion, be justified, except on the ground that the spleen is of such a size as seriously to impair the function of other intra-abdominal viscera. As an ovarian cyst or other intra-abdominal tumor, by reason of its size, may jeopardize the life of the patient, so in a similar manner may the enlarged spleen threaten health and life and when such is the case it would constitute a just reason for its removal. As our knowledge of the spleen is not definite, it would seem that care should be exercised against sacrificing this organ unless the indications for so doing are very clear, even though a large list of splenectomies show apparently perfect health after. Dr. Jepson said that in one splenectomy the blood changes consisted of a fall of red corpuscles from above 5,000,000 before the operation to 3,300,000 the day following the operation and it was only after three weeks that the number reached approximately 4,500,000. During this time the whites increased from 6,000 to 27,000. In another case of splenectomy, in a case of Banti's disease, the blood changes were somewhat similar as regards the red corpuscles but he could not recall with certainty the exact changes. He had interpreted the diminished number of red corpuscles as possibly being due to blood loss which, however, was slight in each case.

Dr. Jefferson D. Griffith, Kansas City, stated that he has operated in several of these. One operation was for hernia of the spleen in a child six years old. The spleen had escaped, following a severe attack of whooping cough, and when the child was brought to him he did not know what was the matter. There apparently had been very few symptoms other than fretfulness. On cutting down he encountered a large body which proved to be the spleen. It was lying well down and was not strangulated. After ligating the vessels he took it away; the child made an uneventful recovery. The parents have since told him that the child's whole disposition has changed. The case occurred ten years ago and in the meantime the child's disposition and temperament, which before the operation were phlegmatic, have now grown to be rather nervous and vicious.

Dr. W. A. Bryan said that he has appended to his paper a list of the cases that he has been able to collect of non-parasitic cysts. There was one of dermoid, 12 of cysts classified as simple or serous, 24 of cysts classified as hematic or blood, and 4 that were not definitely classified. There are 41 cases of non-parasitic cysts of the spleen so far recorded, but only 12 have been classified as simple. If these 12 could be analyzed it would be found that many of them should be classified with the blood cysts. Simple serous cysts are exceedingly rare. The danger of splenectomy is a great deal larger in those cases in which the spleen is functionating than it is when the function has disappeared. In the case reported by Dr. Bryan the cyst and spleen together weighed two and a half pounds, but there was not more than one and a half ounces of real spleen tissue.

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* A report of this case was published in the Journal of the Missouri Medical Association, July, 1905.

Dr. B. B. Davis stated that he has looked over the literature on removal of the spleen and in practically all the cases of splenectomy done on animals for experimental purposes and cases of splenectomy done for rupture, the operation has been universally followed by a decrease in the reds. In the few cases in which splenectomy has been followed by an increase in the reds there has been some reason for it. In a case reported by Harris some years ago the condition had been present for years. In such cases Dr. Davis believes that the vicarious function carried on by the bone marrow becomes established and this affects the blood formation. He said that if Dr. Harris will look up the literature he will find that it will bear out the statement that the removal of the spleen does reduce the number of red blood cells. The very fact that in these cases, in which there has been a careful study beforehand, the removal of the spleen has been followed by restoration to health shows that the splenomegaly is the primary lesion. It will not be possible to put this class of cases along with the case of which Dr. Jepson spoke. In primary splenomegaly there is a secondary cirrhosis of the liver, and ascites. Operation should be done in these cases before these complications arise, as the patients are very likely not to be helped by the operation.

ACID INTOXICATION, AND LATE POISONOUS EFFECTS OF ANESTHETICS.

HEPATIC TOXEMIA. ACUTE FATTY DEGENERATION OF THE LIVER FOLLOWING CHLOROFORM AND ETHER ANESTHESIA.*

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AND
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In January, 1905, there occurred in our practice a case of gangrenous ovarian cyst with twisted pedicle. The patient was operated on and the case terminated fatally four days and a half later. The clinical picture was a very unusual one. Although we were aided in the conduct of the case by four consultants, a gynecologist, an internist, a neurologist, and a pathologist of more than ordinary ability, no definite diagnosis of the cause of the singular symptoms could be made. The parents of the child, fortunately, were intelligent and considerate and, realizing the importance to humanity and to science of ascertaining the exact cause of death, as the first step to the prevention of a similar result in other cases, permitted a postmortem examination. This was made with the greatest thoroughness, gross, microscopic and bacteriologic, and yet even then the cause of death was obscure and remained so until a careful review of the literature enabled us to collect twenty-nine more or less scattered cases, either identical or very similar to our own, in the light of which we believe the diagnosis becomes clear. We have found also certain comparatively recent experimental work reported, which assists materially in the understanding of the case.

DR. FAVILL'S REPORT OF CASE.

We shall cite first the outline of our experience, which it seems worth while to report, first, because of its essential importance as a positive clinical picture; second, because of its value with respect to negative demonstrations.

Patient.—A girl, aged 12½ years, with the stature of a woman and the mental development of a girl of 16 or 18. Not at all a "freak," but simply a noticeably handsome, well-developed and intelligent girl. She menstruated at the age of 11½ and was reasonably regular thereafter.

History.—Her history as to illness is negative. At 3 she had an acute otitis media which was treated by puncture, under chloroform, and recovered promptly and permanently; since that time no illness of any consequence, though she was of a lithemic type.

January 17: She came home from skating, complaining of great pain in the lower abdomen. Her menstruation being due, though it was habitually painless, her pain was ascribed to that fact. The pain was very severe. When seen two hours later it was somewhat less, but still severe. Temperature, 98.4; pulse, 72; general abdominal tenderness, but absolutely no local increase. The appendix was excluded and the conclusion as to premenstrual pain adopted. Some whiskey was given her, which she vomited.

A nurse was called; the child was covered with a flaxseed poultice on the lower abdomen, given small doses of phenacetin at intervals and saline cathartics.

January 18: In the morning her temperature was normal, but she was still in some pain. Temperature in the evening was 99. She had a comfortable day and began to menstruate at 11 p. m.

January 19: Thursday was an uneventful day; very little pain, no abdominal distension and very little tenderness; the bowels moved twice slightly; temperature at 5 p. m. was 99. She vomited some orange juice at noon; she was cheerful and feeling well, however.

January 20: Friday she was still in pain; temperature, 100.5. Inasmuch as the menstrual conditions did not seem to justify any increase of symptoms, suspicion was aroused; a blood count showed 11,600 leucocytes. Dr. Bevan was called in consultation. Temperature gradually rose and slight tenderness developed in the neighborhood of the appendix. At 2 o'clock the temperature was 102.2, leucocytes 14,000. Free bowel movement. At 9 p. m. the temperature was 102.6, pulse 108, leucocytes 16,500. Dr. Webster was called in consultation.

A diagnosis of appendicitis was fully agreed on and an operation was performed about midnight.

Previous to the operation a thorough pelvic examination was made bi-manually by rectum, but no palpable abnormality was found.

Operation.—The operation was performed under chloroform, and it is noteworthy that it took a long time and an unusually large amount of chloroform to establish anesthesia. The exact amount of chloroform, however, was not noted at the time, but it is clear that in both respects the anesthesia was noticeable.

Because of some rather definite sense of resistance under the right rectus muscle, just above the pubes, the incision was made through the right rectus. The peritoneal cavity was opened and the appendix was found injected and buried in lymph directly under the incision. It was removed and the stump invaginated in the ordinary way. On separating the coils of intestines which surrounded the appendix, a black mass was seen. At first glance this was thought to be a gangrenous bowel, but on separating the intestines a gangrenous ovarian cyst and tube of the left side were brought into view. The intestines in contact with the mass were covered with a thin layer of lymph. There was no pus. The pedicle was ligated proximally to the point of torsion and the dead mass removed; the abdomen was closed without drainage. No time was lost in any way, and although the exact time was not noted, the operation was a rather short one.

Postoperative History.—From the time of operation till death, the dressings were not removed from the wound. The abdomen was flat, soft and painless, and there were absolutely no evidences of peritonitis.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

The patient was returned to bed in excellent condition; temperature 101.6, pulse 102, and thoroughly conscious at 1:45 a. m. The succeeding hours were unusually comfortable. The temperature steadily fell until Saturday at 11 a. m., when it was 99.8; pulse 86; respiration 23, and leucocytes 12,000. The patient had a very comfortable day; temperature 101.2 at 4 p. m.; she vomited a trifle at 7 p. m., and flatus was expelled freely.

January 22: Sunday, at 8 a. m., the temperature was 98.6; pulse 100. She slept more or less during the night, vomited a little and passed several slight stools. She complained of feeling hungry. She continued in this comfortable way all day Sunday. At 7 p. m. temperature was 99.2, pulse having risen to 112, and the mother noticed that the patient was not quite natural in her remarks. The attention of the physicians was called to this point, but the incident was so slight as to seem unimportant to them. At 11 p. m. the physicians were again called. The child was talking incoherently and exhibiting evidences of very great fright.

The picture of this mental condition is so unusual and from comparison with the experiences of others so typical that we venture to dilate on it. First, its appearance almost out of a clear sky. The child had been phenomenally favorable in her progress until forty-four hours after the operation. Second, the element of fright as the initial manifestation. Third, the rapid lapse into incoherence and unremitting delirium. Her first noticeable departure from the normal was at 8 p. m. on Sunday, and at 11 p. m. she gave the last obvious recognition of anybody. From that time on it was a series of alternations between sleep and delirium, more or less talkative, with a curious shrieking outcry. The delirium was controllable to a certain extent by small amounts of morphin hypodermatically, but except for that nothing seemed to affect her condition.

Consultation with Dr. Patrick.—Of course, the question of septic meningitis arose immediately. At noon on Monday, January 23, Dr. Patrick was invited into consultation. At that time there were present the following significant signs: Considerable muscular rigidity, exaggerated tendon reflexes, particularly patellar, ankle clonus and a perfectly marked Babinsky's reaction. Nevertheless, the consultation did not result in a clear diagnosis of meningitis.

Dr. Hugh T. Patrick's Statement.—From a neurologic standpoint the case presented several interesting and very instructive features.

First, the very early appearance of delirium without other symptoms of profound intoxication, and with no signs of organic disease. The rather quiet delirium of the confusional sort, with no definite tendency to depression or exaltation; no definite type of delusion or hallucination enabled one to exclude all of the ordinary psychoses. The varying indifference to surroundings, the occurrence of relatively lucid moments, and the well-marked impairment of recognition of time, location and personality placed the case in the class of toxic psychosis or delirium, as delirium tremens, Korsakoff's psychosis. Absence of all signs of gross organic disease allowed the provisional exclusion of meningitis, or brain abscess, consequently, a diagnosis of toxic delirium was made; source of toxemia undetermined.

Second, the appearance of ankle clonus and Babinski's sign or "extensor response" with corroborative evidence of gross brain or cord disease, was confusing. As is well known, Babinski's (or Collier's) sign indicates a lesion of the pyramidal tract. It is not to be elicited in every case of disease of this tract, but its presence in typical form is almost indubitable evidence of such disease. It is known, too, that this sign may be found in acute lesions, even a very few minutes after cerebral thrombosis or hemorrhage. Combined with delirium, another cerebral symptom, it would be taken to indicate a lesion or lesions of the cortex or subcortical tissue. Ankle clonus is also indicative of a lesion of the pyramidal tract, but is exceedingly rare in acute diseases, such as hemorrhage, thrombosis, inflammation. Occasionally it is found in rigid or hypertonic states due to compression of the motor cortex, as in meningeal hemorrhage. I do not recall having seen it well defined in acute meningitis, though I suppose it might be possible. So far as I know, neither Babinski's sign nor ankle clonus has been reported as due to intoxication without gross, or well advanced, microscopic disease. The eye grounds were negative.

Consultation with Dr. Billings.—Monday afternoon Dr. Billings was invited into consultation. The conditions were about the same, except that the pulse was steadily going up, and the temperature slightly, being 101.6, the pulse 130 and the respirations 21. There was also more or less suspicion of endocarditis and pericarditis, and it was suspected that the sepsis had invaded the cardiac structures.

Dr. Billings' Statement.—The symptoms indicated profound intoxication. There was coma, with marked congestion of the skin and of the mucous membranes, with moderate cyanosis and rapid heart action, irregular respirations, relaxed sphincter ani and retention of urine. At regular intervals a period of excitement, practically a convulsion, would occur, lasting one minute or perhaps longer. This was manifested by a deeper redness of the skin and mucous membranes, a tonic contraction of all the voluntary muscles, by gradually increasing respiration, both in number and depth of chest movements, by stertor, by a tumultuous beating of the heart, by dilatation of the pupils and, at times by escape of the fluid contents of the rectum. The tonic contractions of the muscles occurred with the extremities extended and the head drawn slightly backward, with the neck muscles rigid. In the early stages the forearms were alternately flexed and extended with the hands closed. The stage of excitement was followed by a longer period of quiet. During this time the respirations were quiet, slow, shallow and almost imperceptible. The heart beat rapidly, but not as forcibly as during the stage of excitement. The muscles were relaxed, the pupils equal and moderately wide. Physical examination of the chest showed no abnormal lung findings. The heart showed evidence of dilatation. The apex beat was displaced to the left and was diffuse. The left border dullness was one inch to the left of the nipple line, the base to the second rib, and the right border one inch to the right of the right sternal border. During the early stage no murmurs were heard. Soon a loud apical and basic systolic murmur could be heard during the period of excitement. During the last day systolic murmurs could be heard at all times and during the convulsive period, with the tumultuous beating of the heart loud churning murmurs were heard. During the last day a distinct to-and-fro friction could be plainly heard over the base of the heart. There can be no doubt that acute dilatation of the heart occurred. Postmortem contraction and rigidity of the heart muscle of course does not negative this statement.

Termination of Case.—The progress on the following day, Tuesday, was uneventful, the pulse remaining high much of the time, the temperature varying between 99.4 and 101.8, respirations between 22 and 28. Cheyne-Stokes respiration was present. The conditions continued without material change until Wednesday morning, when the temperature gradually began to rise; the pulse became very irregular and rapid, and finally death ensued at 2 o'clock, 110 hours after operation.

AUTOPSY.

The postmortem examination made by Dr. Hektoen at the expiration of seven hours revealed the following facts:

Anatomic Diagnosis.—Recent laparotomy; wound removal of vermiform appendix and of left ovary and tube; local purulofibrinous peritonitis about field of operation; retrocecal ecchymosis; thrombus of left ovarian vein; fatty changes in the liver; swollen spleen; chronic nephritis (minimum degree), with acute degeneration; multiple ecchymoses; edema and congestion of lungs; acute bronchitis; chronic fibrous peritonitis about right tube and ovary. Menstruation.

Macroscopic Examination.—The body is that of a well-developed, well-nourished girl. It is still warm and rigor-mortis is beginning. There is a recent sutured incision with normal margins to the right of the median line, beginning on a level with the navel and running down about 10 centimeters.

The general abdominal cavity is empty; in the pelvic portions there is some turbid blood; the omentum, ileum, cecum and sigmoid are matted together by a fibrinous exudate in the pelvis and behind the incision, the upper inner part of which is gaping, the margins here appearing somewhat soft and yellowish. The vermiform appendix is absent, the stump closed and water tight, with yellowish margins. The left tube and ovary are absent, the stump being sutured, the margins soft and yellowish. The left ovarian vein is closed by a red, quite firm, adherent clot. The right tube and ovary are embedded in firm, fibrous adhesions and flattened out beyond recognition against the bladder and wall of the pelvis. There is a large area behind the cecum sparsely infiltrated with blood.

The pleural and pericardial cavities are empty and smoothly lined. The lungs are somewhat congested and edematous, especially posteriorly. There is no bronchitis. The heart contains some blood; the endocardium is smooth; the muscle is firm; the intima of the aorta, vena cava and iliacs is smooth.

The spleen is large and quite firm; the Malpighian bodies are large and distinct. The liver is universally yellow, with no lobular centers; it is quite firm and larger than normal. The stomach is normal, with some softenings of the mucosa and some ecchymoses. The kidneys are large and firm, the capsules adherent in a few small places, the cortex thicker than normal, the markings not distinct; ecchymoses are present in the pelvis. The urinary bladder is normal; there are some ecchymoses in the mucosa.

The brain and its membranes are normal.

Microscopic Examination.—Kidneys: There are some chronic fibrous changes as shown by partial or complete obliteration of an occasional glomerulus and some, though slight, increased thickness of the capsules of many glomeruli. The most striking change is the presence of large amounts of granular material (coagulated serum) in the cavities of the glomeruli visibly compressing many of the tufts. The cells lining Bowman's capsules are not much changed. The convoluted tubules are filled with a similar granular material, while the epithelial cells are well preserved. There is marked congestion of the vessels.

Liver: There is an advanced fatty change at the peripheries of the lobules. The central portions are congested, the columnar arrangement of the liver cells is thrown into disorder.

Spleen: This organ shows great congestion; the follicles are cellular.

Lungs: There is great congestion in the posterior parts of the lower lobes; here the cells contain many blood corpuscles, some being crowded. Some of the bronchioles are filled with leucocytic exudate.

Heart: The heart shows no changes.

Internal Margins of Abdominal Incision: There is marked congestion and leucocytic infiltration, but no demonstrable bacteria.

Left Ovarian Vein: A recent red thrombus is present. There are no bacterial masses.

Bacteriologic Examination.—Two flasks of broth and two of ascites broth inoculated with 1.5 c.c. of blood withdrawn from the right elbow twenty hours before death remained sterile.

Cultures from the heart's blood, the liver and the spleen made at the autopsy remained sterile. Cultures from the peritoneal exudate gave *Streptococcus* and *Staphylococcus pyogenes aureus* in agar plates, in milk tubes and on blood-agar slants. The smears from the exudate showed only a few cocci.

Remarks.—It is to be noted that the local peritonitis was limited to the area from which the appendix and gangrenous cyst had been removed and that it was less marked at the time of postmortem than at the time of operation. Sections of the appendix and cyst showed streptococci and staphylococci.

Blood: The blood conditions during the postoperative period were as follows: The first day, Saturday, leucocytes 12,800, the second day, Sunday, not noted. The third day, Monday, 15,200, the fourth day, Tuesday, 14,800. Evidently not especially significant.

Urine: The urinary conditions were significant. The urine was examined before the operation and found to be negative. Following this examination it was examined frequently, and found on January 23, which was Monday, to be a highly concentrated urine, with an acidity of 11.6, containing diacetic acid, a trace of acetone and one and one-fourth (1.25) grams per liter of albumin, and a number of hyaline, granular and waxy casts. A subsequent examination on the same day showed less albumin, no acetone and less diacetic acid. The following day, Tuesday, there was still albumin, diacetic acid and a little blood. Later in the same day it was still highly acid, with less albumin, more diacetic acid and a great deal of blood. The same day, at 3:30 p. m., diacetic acid was absent; the other conditions were unchanged. Later, Tuesday, the conditions were the same, but with no diacetic acid. The next day, Wednesday, the urinary conditions were much the same; there was less blood and albumin and no diacetic acid. At 9 a. m., on Wednesday, the day of death, there was the same condition of nephritis, with no diacetic acid, but a great deal of blood.

It is to be noted that her breath on Tuesday and Wednesday had a sweetish, acetone odor.

Opinions of Physicians in the Case.—The opinions during the progress of this case were various. First, the assumption was that it was septic. Certain of the consultants had a reservation, feeling that it was some sort of autotoxic condition. A blood examination made by Dr. Hektoen during life was entirely negative.

The commentary of Dr. Patrick on the nervous manifestations particularly bearing on the question of meningitis is herewith included.

The deduction of Dr. Hektoen from his postmortem investigations is also included.

The deceptive signs indicating cardiac involvement with absolutely negative findings at autopsy are interesting.

The true nature of this experience has only unfolded itself gradually under the enlightening influence of the negative findings and an exhaustive study of the literature.

REVIEW OF LITERATURE.

There have appeared in the literature from time to time since 1846 and 1847—the years marking the introduction of anesthetics—the reports of a number of cases resulting fatally after operations, in which anesthetics were employed. These cases presented unusual symptoms, and postmortem findings which could not be attributed to the more common causes of death after operation, such as shock, hemorrhage, sepsis, pneumonia, uremia, etc.

A certain considerable number of these obscure cases, because of the identity of symptoms and postmortem findings, evidently belong to the same group and are certainly the result of the same obscure causes.

The cases to which I refer have been reported under several headings. Guthrie[1] reports nine fatal cases under the title, "Some Fatal After Effects of Chloroform on Children." Brewer[2] reports a similar case as "Fatal Acetonemia Following an Operation for Acute Appendicitis." Kelly reports these cases under the title of "Acid Intoxication; Its Significance in Surgical Conditions."

Brackett, Stone and Low[3] report this group under the title of "Aciduria (Acetonuria), Associated With Sudden Death After Anesthesia." Other authors have reported these cases as deaths due to acute yellow atrophy of the liver. Cohn[4] reports a case under title of "A Case of Protracted Effect of Chloroform, with Fatal Termination."

Stocker[5] reports a case identical with our own as one of acute yellow atrophy of the liver after the twisting of the pedicle of an ovarian cyst. Without doubt many of those deaths have not been correctly interpreted, and have been regarded as deaths due to late shock, fat embolism, sepsis, meningitis, uremia, etc.

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[1] Guthrie, L. G.; "Some Fatal After Effects of Chloroform on Children," Lancet, 1894, I, pp. 193-257.

[2] Brewer, G. E.; "Fatal Acetonemia Following an Operation for Acute Appendicitis," Ann. of Surg., 1902, xxxvi, p. 481.

[3] Brackett, E. G., Stone, J. S., Low, H. C.: "Aciduria (Acetonuria) Associated with Sudden Death After Anesthesia," Boston Med. and Surg. Jour., 1904, cli, p. 2.

[4] Cohn, Max. "Ein Fall von protrahirter Chloroform wirkung mit todtlichen Ausguage," Deut. Zeits. f. Chir., 1902, lxiv, p. 189.

[5] Stocker: Centralbl. f. Gynäkologie, 1895, No. 45.

Within the last year the evidence on this subject has accumulated rapidly, and it would seem that the time has arrived when the large number of clinical reports and the experimental laboratory findings have thrown enough light on this obscure subject to warrant an attempt to analyze the evidence at hand and to determine the essential cause of death, to describe the usual symptom-complex and to determine the postmortem findings of this heretofore little understood pathologic condition. Most of us, I believe, even those of us who have had a comparatively wide experience in surgery, have felt that after the giving of an anesthetic. if the patient recovered from its immediate effects, that there were no further dangers from the anesthetic, except such well-known dangers as pneumonia and nephritis, conditions which could be recognized readily by proper means of diagnosis. We have thought little about, and paid little attention to the possibility of late obscure poisonous effects of chloroform and ether which were difficult to recognize, and frequently fatal in termination. Yet as early as 1850, Casper[6] recognized the late poisonous effects of chloroform, and in 1862 said:

> It can no longer be doubted that there is such a thing as chronic poisoning by chloroform—that is, that the drug when it does kill does not always kill instantaneously. but that hours, days or even weeks may elapse during which the person anesthetized remains continuously under the influence of the poison to which he at length succumbs.

Experimentally, the truth of Casper's statement has been proved by a number of investigators. Nothnagel,[7] in 1866, proved that chloroform produced a fatty degeneration of the liver and heart muscle, when injected subcutaneously or into the stomach.

Ungar,[8] in 1887, showed that chloroform inhaled by animals as it is used as an anesthetic produces a fatty degeneration of various organs, especially of the liver, very similar to the fatty degeneration of the liver in phosphorus poisoning.

Strassmann,[9] in 1889, showed that animals weakened by loss of blood and then chloroformed showed a much more extensive fatty degeneration than those not so weakened.

In 1890, Thiem and Fischer[10] reported the first case in clinical work of a man who died four days after chloroform anesthesia, in whom the postmortem showed fatty degeneration of the liver.

Bastianelli,[11] in 1891, reported three deaths occurring in from three to ten days after chloroform narcosis, without any other apparent cause. These patients presented as symptoms: Vomiting, icterus, delirium and coma, and at postmortem in one case extensive fatty degeneration of the liver was found.

Fraenkel,[12] in 1892, reported cases with careful microscopic and macroscopic studies of the changes of the internal organs after protracted chloroform narcosis. In each case, he noted extensive changes in the liver cells, but did not attribute the death to these, as there were no symptoms definitely pointing to the liver. after chloroform anesthesia.

Luther[13] in 1893 noted the occurrence of icterus.

Bandler,[14] in 1896, after a review of the literature up to that time, and a careful study of a case in Wölfler's clinic, came to the conclusion that chloroform under certain conditions can produce serious effects a long time after its inhalation. The effects on the heart and kidneys are well known and fairly generally recognized. The changes produced in the liver are little known and understood. He believes, however, that the liver is affected by chloroform used as an anesthetic in varying degrees from a scarcely perceptible lesion to an almost total destruction of the organ.

Bandler cites the fact that Nachod found bile in the urine after chloroform anesthesia, without any apparent icterus. He himself had found it in ten cases in which there was scarcely any evidence of icterus in the sclera. He believes that the evidence of the destructive effect of the chloroform on the liver cells is found in the cases of chloroform icterus, which are marked, but which disappear in a few days, with the recovery of the patient. He believes that the extreme degree of chloroform poisoning is found in the fatal cases of acute yellow atrophy of the liver which follow its use. an example of which he reports.

In the light of his investigation, Bandler believes that just as the heart and kidneys are carefully examined before the giving of an anesthetic. and their condition recognized as important in the choice of the anesthetic agent. so the condition of the liver, if possible. should be determined before the anesthetic, and when any liver lesion is found. chloroform should not be employed. but ether should be the anesthetic of choice. because, as he showed by animal experiments, ether does not produce the destructive effects on the liver cells found so constantly after chloroform anesthesia.

Offergeld.[15] in 1905. in an experimental study of the poisonous effects of chloroform on the kidneys, presents some most interesting results.

> Animals chloroformed for a long time (up to two hours). after recovery from the immediate effects of the anesthetic. seemed perfectly well, played about and ate. On the second day they were less lively, and not so hungry as usual. Later. they would lie down in the corner, and could be made to move about only with difficulty, and then they would at once lie down again; usually at the end of from 48 to 60 hours they were dead. A postmortem examination showed that in these animals—rabbits, guinea-pigs—after a single narcosis parenchymatous degenerations occur in the heart, liver and kidneys, which produce death after a short time, even though the animal has apparently stood the anesthetic well.
>
> In a second series of experiments it was shown (*a*) that fatty degeneration of the kidney did not occur in the kidney which had its arterial supply cut off by ligation of the renal artery after forty minutes' anesthesia; (*b*) that fatty degeneration of the kidney occurred in a most pronounced type after ligation of the renal vein, after thirty minutes' anesthesia; (*c*) that fatty degeneration occurred more rapidly after ligation of the ureter, even after twenty-five minutes' anesthesia.
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> In a third series of experiments, in which an artificial nephritis had been produced, extensive injury was produced, even by fifteen-minute anesthesia.

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[6] Casper: Quoted by Guthrie, Lancet, 1903. No. II, p. 10.

[7] Nothnagel: Berl. klin Wochft., 1866. iii, 31.

[8] Ungar: Vierteljahrschrf. f. gerichtl. Med., 1887.

[9] Strassmann: Virchow's Arch., 1889. cxv, I.

[10] Thiem and Fischer: Deuts. Medizinalzeit, 1889.

[11] Bastianelli, R.: "Sulla morte tardiva per chloroformio." Bull. della societe Lancisiana deglia Ospedali di Roma, June 22, 1890, p. 325. Abstract in Rev. de Sciences Med., 1892, vol. xxxix, p. 625.

[12] Frankel, E.: Virchow's Arch., 1892, Bd. 127, 129.

[13] Luther: Klin. Zeit. in Streit fragen, 1893.

[14] Bandler, v.: "Ueber den Einflusz der Chloroform und Aethernarkose auf die Leber." Mittiel. aus den Grenzgebeit der Med., 1896, Bd. i, p. 303.

[15] Offergeld: "Experimental Beitrag z. toxischen Wirkung des Chlororforms auf die Nieren." Arch. f. klin. Chir., 1905, vol. lxxv, p. 758.

In a fourth series the kidneys were injured by mineral acid and mercury, and then short—ten, fifteen and twenty-minute—anesthesias were found to be followed by death and the usual fatty degenerations.

In a fifth series the kidneys were injured by pus germs, and it was shown that a nephritis greatly favored fatty degeneration after chloroform narcosis.

In another group diphtheria toxins were injected into the animals, with the result that it was shown that the kidney inflammation produced by these poisons furnished an excellent soil for the development of fatty degeneration after chloroform narcosis.

In a sixth series, in which pregnant animals were employed, it was found that pregnancy in itself did not favor fatty degenerations, but that pregnancy complicated with kidney lesions did.

In a seventh series animals which had recovered from a previous short anesthesia were again chloroformed, and it was found that the fatty degeneration produced by the first anesthesia favored greatly the intense injury of the kidneys from a second anesthesia.

In an eighth series an effort was made to ascertain the effect of diet, and the conclusion was reached that after chloroform narcosis the urea in the presence of a nephritis is irregular in amount.

In a ninth series, after twenty-minute anesthesias on a number of animals on the same day, one was killed each day, and it was found that regeneration is possible.

In a tenth series the conclusion was reached that after chloroform narcosis fat disappears in the tissues and accumulates in the liver, so that the percentage of fat increases in the liver, while it decreases in the other organs.

In an eleventh series the conclusion is reached that the anesthesia produced by chloroform and oxygen does produce degenerative changes in the kidney, but only to a limited degree, and in a few days complete recovery follows.

Offergeld experimented a little with ether, but found that most of his animals died, even after from thirty to sixty-minute anesthesias, of pneumonia.

Offergeld believes that there is a certain idiosyncrasy in regard to chloroform and that some individuals can take amounts without injury which would produce extensive degenerations in another. He points out the importance of the knowledge that anemic and cachectic conditions of the patient favor the poisonous action of chloroform, and also the dangers of repeated anesthesias following closely one after the other.

Offergeld found constantly in his experiments that the most marked change at death was found in the liver. He came to the conclusion, however, that death is due to the production of a nephrolysin resulting from the effect of the chloroform on the kidney cells.

Offergeld believes that the prevention of this ill effect of chloroform may be accomplished by the use of a mixture of chloroform and oxygen.

Under the title of fat metamorphosis in the internal vital organs after simple and mixed narcosis, Benno Müller[16] this year reviews much the same ground. Müller made fifty animal experiments, with the usual anesthetics. His conclusions are as follows:

1. Anesthesia with chloroform, chloral hydrate, bromethyl and chlorethyl, ether and mixtures of these always produce changes in the internal organs, which appear as beginning fatty changes.

2. Fatty changes occur also in the epithelium of the respiratory tract.

3. The fatty changes in degree and extent depend on the time and number of the anesthesias.

4. The power of the various anesthetics to produce fatty changes is in direct proportion to their anesthetic power.

5. These fatty changes usually disappear shortly after the anesthesia. If a second anesthetic, however, is given before the fatty changes of the first have been recovered from, the effects of the second are enhanced and the cells become necrotic.

It makes little difference when the second anesthetic is given, the fatty changes after the second are twice as severe as from the first.

6. The anesthetic continues to produce fatty changes as long as it is present in the blood. The fatty changes can not go on to restoration to normal until the blood has freed itself from the last vestige of the drug.

7. It is hazardous to give a second anesthetic within three days after the first, and the anesthesia should be as short as possible.

8. Pneumonia occurs frequently after ether and ether mixtures; because of a possible pneumonia after a first ether anesthesia, one should choose chloroform for a second.

9. Each anesthetic produces after long use an increase in the mucous secretion. One finds in the lung after each anesthesia small areas filled with mucus (not infected pneumonic areas), which very soon disappear, but which are greatly increased by a second anesthesia inside of from twenty-four to forty-eight hours.

10. Chloral hydrate forms chloroform in the system.

11. The mixed anesthesias have no property of prevention of fatty changes in the internal organs.

12. Every anesthetic produces fatty changes in the vessel walls of the brain, and in the ganglion cells up to a certain stage and in the other internal organs.

THE CLINICAL SIDE.

With the assistance of Dr. Dean D. Lewis, we have collected from the literature 27 fatal cases after anesthesia, making with our own 28, which from symptoms and postmortem findings belong, we believe, to the same group. In two cases reported in the literature the patient recovered:

Bastianelli reported 3 cases; Bandler, 1 case; Ballin, 1 case; Brackett, Stone and Lew, 3 cases; Brewer, 1 case; Cohn, 1 case; Erlach, 1 case; Guthrie, 14 cases; Kelly, 1 case; Marthen, 1 case; Stocker, 1 case; Mintz, 1 case; Bevan and Favill, 1 case. Total, 30. Chloroform was employed in 23 cases; ether in 4 cases; Billroth mixture in 1 case; not stated, 2 cases. Total 30.

We summarize below the essential facts in each case:

Bastianelli,[11] in 1890, reports 3 cases in which death occurred on from the third to the tenth day following the use of chloroform. In two of the patients vomiting was frequent and profuse. The patients were icteric and restless. Just before death they became comatose. Autopsy revealed a fatty degeneration of the heart, kidneys and liver. The fatty changes in the latter organ were most marked in the center of the lobule and resembled closely those found in other poisoning, especially phosphorus.

The original article was not accessible, and no statement can be made concerning the age, sex and predisposing causes.

These are probably the first cases reported and published of true late chloroform poisoning. Thiem and Fischer published somewhat earlier the autopsy findings in a patient dying four days after chloroform, but this case must be accepted with some reserve, as it is regarded by Fraenkel as delirium tremens.

Guthrie, in 1894, reports the clinical histories of ten patients; nine died and one recovered. The autopsy findings in eight fatal cases are given:

Case 1.—Male child, aged 3, under the care of Mr. Watson Cheyne, was operated on in 1887 for vesical calculus. There were no predisposing causes. Chloroform was used as an anesthetic. Two and one-half hours after the operation the child was restless. Vomiting was noted at this time. Eight hours after operation the child repeatedly uttered piercing shrieks, tossed about in bed, and was sweating profusely and was cold.

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[16] Müller, B.: "Ueber Fettmetamorphose in den inneren faren chym lebens wichtige Organen nach Einfachen u. Much narkosen." Archiv. f. klin. Chir., 1905, No. lxxv, p. 876.

Death occurred suddenly ten hours after operation. Screaming continued until a few hours before death.

Autopsy.—Lungs and liver normal; spleen slightly enlarged; kidneys, both in early stages of granulation, congested; capsule somewhat adherent. Brain congested, but no evidence of inflammatory changes in meninges.

Case 2.—Female child, aged 7, under the care of Mr. Stanley Boyd. Anemia possible predisposing cause. An excision of the knee joint was done under chloroform anesthesia. The carbolic acid spray was used. Patient was collapsed after the operation. Four and one-half hours after the operation the child began to vomit incessantly. Shrill screams were uttered. the restlessness finally passed into coma, and death resulted twelve hours after the operation.

Autopsy.—The pelves of both kidneys contained pus. All other organs appeared normal.

Case 3.—Female child, aged 4, under the care of Mr. Watson Cheyne, was operated on for double genu valgum. Chloroform was used as an anesthetic. The operation lasted about one hour. No predisposing causes. Vomiting commenced about five hours after operation. The child became delirious; the delirium alternating with apathy. Child screamed constantly. Temperature rose to 102, just before death, which occurred twenty-seven hours after operation.

Autopsy.—The liver was found somewhat pale and greasy. Kidneys and spleen were normal. The heart muscle was pale, but not fatty. There was considerable venous congestion in the brain; otherwise normal.

Case 4.—Male child, aged 1 year 4 months. Service of Mr. Watson Cheyne. Carbolic-acid intoxication may have been predisposing cause. Operation was done for congenital hydrocele under chloroform anesthesia. Lengthy operation. Excessive vomiting was noted soon after operation. Death occurred twenty-four hours after completion of operation.

Autopsy.—Liver large, firm and pale. Microscopically, fatty infiltration.

Case 5.—Male child, aged 4. Service of Mr. Stanley Boyd. Operation for correction of double talipes equino varus, resulting from infantile paralysis. Chloroform anesthesia. Symptoms began thirteen hours after operation. Vomiting was frequent and profuse. Child soon became unconscious. Just before death temperature rose to 101. Death occurred thirty hours after operation.

Autopsy.—Liver small, weighing 14½ ounces; microscopically, two-thirds of the external portion of the lobule was fatty. There was intense fatty infiltration, perhaps unaccompanied by fatty degeneration.

Case 6.—Female child, aged 8. Service of Mr. Stanley Boyd. Carbolic-acid intoxication was possible predisposing factor. Operation for double genu-valgum; lasted one hour and ten minutes. Chloroform anesthesia. The symptoms were vomiting, restlessness and coma. Death occurred fifty-three hours after anesthetic.

Autopsy.—Liver small, weighing 1 pound 3 ounces.

Case 7.—Female child, aged 4, well nourished and apparently healthy. Service of Mr. Stanley Boyd. Chloroform anesthesia; chloroform taken badly. Iliac abscess was opened and 2 ounces of 10 per cent. iodoform glycerin emulsion were injected. Collapse after operation. The symptoms were incessant vomiting; child either apathetic or extremely restless and delirious. Carboluria noted. Death occurred six days after operation. Temperature shortly before death reached 104.6.

No autopsy permitted.

Case 8.—Female child, aged 2. Service of Mr. Watson Cheyne. Child was apparently in good health; iliac abscess was opened under chloroform. Anesthesia lasted about fifteen minutes, and one-half ounce of chloroform was taken well. Twelve hours after operation the child was dull and apparently in shock. Death occurred fourteen hours after operation.

Autopsy.—Peritoneum congested. Some fluid found about abscess. "No apparent cause of death."

Case 9.—Female child, aged 8½. Service of Mr. Watson Cheyne. No predisposing cause. Psoas abscess was opened under chloroform and irrigated with 1-4,000 bichlorid solution. The child was pale and restless after operation. The symptoms were severe abdominal pain, nausea and vomiting; diarrhea with some blood in stools. Temperature 95.8. The symptoms persisted for three days, then abated, and recovery followed. Judging from the character of the symptoms and the use of bichlorid in the operation, it seems that mercurial poisoning should be considered in this case.

Case 10.—Female child, aged 4. Service of Mr. Pollard. Operation under chloroform for double psoas abscess and spinal caries. Operation lasted about one hour. Symptoms were noted four hours after operation. Child was very restless, calling for water; flushed; pulse full. Sixteen hours after operation child was restless, with wild look; temperature 103. Death occurred sixteen hours after operation.

Autopsy.—Liver large and pale; fatty on section. Kidneys soft and pale (postmortem). Tuberculous glands about root of lung; one had ulcerated into root of lung. Calcareous tubercles in lung. Caries of body of third lumbar vertebra.

(To be continued.)

OSSIFICATION OF THE LOWER JAW IN MAN.*

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From the fact that there are so many different accounts given of the ossification of the lower jaw, it is evident that the question is in need of reinvestigation. Nothing more recent than Bland-Sutton's account seems to have been published on the subject, and that is based on work apparently done in 1883[1] and, as will be seen, it can be by no means considered conclusive.

It is necessary to state the various accounts as the recognized text-books give them in order to appreciate the great diversity of opinion which exists.

If we begin with Quain, we find the following statement:

> The largest part of each half is formed from a deposit (dentary) in the membrane on the outer side of Meckel's cartilage, and to this there is added a second smaller plate (splenial) which forms the inner walls of the tooth sockets, terminating behind in the lingula. A small part of the body by the side of the symphysis results from the direct ossification of the anterior end of Meckel's cartilage; and, posteriorly, the condyle and a portion of the ramus, including the angle, are developed from another ossification in cartilage.

Macalister[2] says:

> One center of ossification begins in the embryonic tissue around Meckel's cartilage on the thirty-eighth day. A supplemental patch of cartilage appears in this tissue at the angle and a second at the condyle. Centers of ossification, condylar and angular arise in each of these patches, and a third in the median end of Meckel's cartilage; a fifth or splenial center arises in the lingula. These all very rapidly unite, so that by the fourteenth week but one bony mass is present on each side.

Kollman,[3] who quotes Toldt,[4] Stieda[5] and Schafer,[6] says that the anlage of the lower jaw can be seen in an embryo of 30 mm. from neck to tail. The ventral site of union of both Meckel's cartilages is surrounded by bony lamellæ which arise, not out of cartilage, but out of mesoderm and develop upward, following Meckel's cartilage. They form at the side two bony lamellæ, which come together dorsally, and between the lamellæ runs the inferior dental nerve. Further upward, the bone becomes thinner, to again thicken in the neighborhood of the auditory capsule. There are few places where one can so clearly observe the independence of covering bone from that arising from cartilage. Further, the origin of the jaw becomes complicated through the appearance of hyaline cartilage, which arises secondarily, quite independently of Meckel's cartilage. This occurs in the region of the median incisor tooth from the upper external alveolar border as far as the region of the canine tooth and on the coronoid and condyloid processes.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Trans. Odont. Soc.

[2] Text-book of Anatomy, p. 242.

[3] Entwickstungsgeschichte des Menschen, p. 261.

[4] Toldt: Zeitft. d. Heilk. Vol. v. 1884.

[5] Stieda: Arch. f. mikroskop. Anat., vol. ii, 1875.

[6] Schaffer: Arch. f. mikroskop. Anat., vol. xxxii, 1888.

In the fetus of from 15 to 18 cm., only traces (of cartilage) are present, and these accessory nuclei have only a provisional significance. They atrophy, owing to the formation of new bony tissue, just as does Meckel's cartilage. Fresh researches are required to determine whether these ossifications have any phylogenetic meaning.

In "Gray's Anatomy," in the article edited by Howden, the following statements are made:

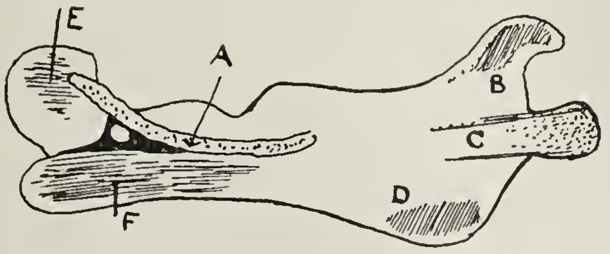

Fig. 1.—Scheme after Sutton. E. Mento-Meckelian center. F. Dentary. A. Splenial. B. Coronoid. C. Condyle. D. Angular.

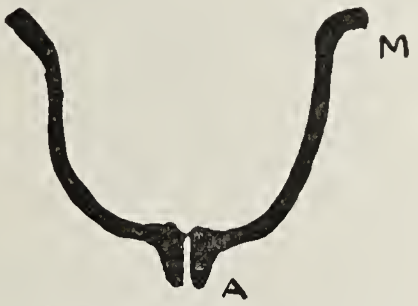

Fig. 2.—Scheme of Meckel's cartilage: M, malleus end; A, anterior end.

> The lower jaw is developed principally from membrane, but partly from cartilage. The process of ossification commences early, earlier than any other bone, except the clavicle. The greater part of the bone is formed from a center of ossification (dentary) which appears between the fifth and sixth weeks in the membrane on the outer surface of Meckel's cartilage. A second center (splenial) appears in the membrane on the inner surface of the cartilage, and from this center the inner wall of the sockets of the teeth is formed; this terminates above in the lingula. The anterior extremity of Meckel's cartilage becomes ossified, forming the body of the bone on each side of the symphysis. Two supplemental patches of cartilage appear at the condyle and at the angle, in each of which a center of ossification for these parts appears; the coronoid process is also ossified from a separate center. At birth the bone consists of two halves united by a fibrous symphysis in which ossification takes place during the first year.

In Cunningham's "Text-book of Anatomy," p. 141, we find it stated that:

> The development of the lower jaw is intimately associated with Meckel's cartilage, the cartilaginous bar of the first visceral or mandibular arch. Meckel's cartilages, of which there are two, are connected proximately with the periotic capsule and cranial base. Their distal ends are united in the region of the symphysis. It is from the connective tissue overlying the outer surface of the cartilaginous arch that the bulk of the lower jaw is developed. The cartilage itself is not converted into bone, but undergoes resorption, except at its anterior extremity, which is stated to undergo ossification to form the part of the jaw lying between the mental foramen and the symphysis. In a third or fourth month fetus, the cartilage can be traced from the under surface of the forepart of the tympanic ring downward and forward to reach the jaw, to which it is attached at the opening of the inferior dental canal; from this it may be traced forward as a narrow strip applied to the inner surface of the mandible which it sensibly grooves. The proximal end of this furrow remains as the mylo-hyoid groove. The part of the cartilage between the tympanic ring and the jaw becomes converted into fibrous tissue and persists in the adult as the so-called internal lateral ligament of the temporo-maxillary articulation, its proximal end through the Glaserian fissure being continuous, with the slender process of the malleus. The part which is applied to the lower jaw disappears. In the tissue overlying the cartilage ossification begins by several centers as early as the sixth or seventh week of fetal life, in this respect resembling the clavicle, by which it is alone preceded. The dentary or basal center forms the outer wall and lower border. With this is united the splenial portion, which appears somewhat later, forming the inner table from near the symphysis backward, toward the opening of the inferior dental canal, where it terminates in the lingula. By the union of these two parts a groove is formed, which ultimately becomes covered in, and in which the inferior dental nerves and vessels are lodged. As has already been stated, the part of the body between the symphysis and the mental foramen is regarded as directly developed from the forepart of the Meckelian cartilage. As will have been gathered from the above description, the upper part of the ramus and its processes have no connection with Meckel's cartilage; the condyle and the coronoid process are each developed from a separate center, preceded by a cartilaginous matrix. These several centers are all united about the fourth month.

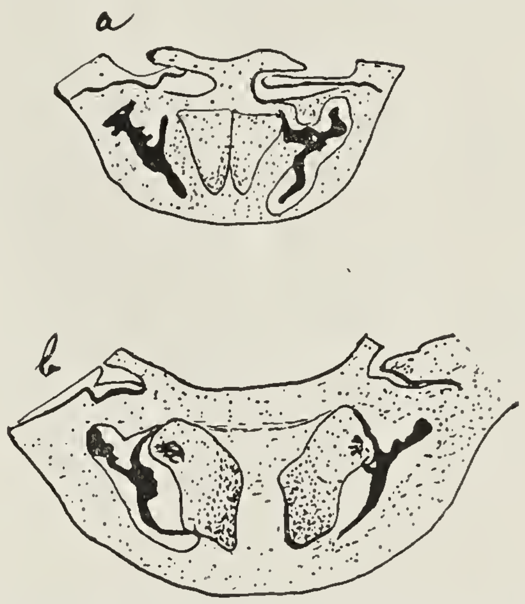

Fig. 3.—(a) Coronal section of anterior end of Meckel's cartilage. (b) Coronal section a little behind anterior end of Meckel's cartilage.

Sappey[7] describes very carefully Meckel's cartilage and, in addition, gives an account of the ossification of the lower jaw. He says:

> The lower jaw appears at the commencement of the second month of intrauterine life in the form of a small ogival arch, composed of two symmetrical and continuous halves. This arch of parabolic figure constitutes the cartilage of Meckel. . . . Situated on the internal face of the bone below the mylo-hyoid ridge, Meckel's cartilage presents the appearance of a long ribbon extended between the symphysis and the front of the tympanum. By their internal extremities the two cartilages are continuous; they form thus an arcade of which the median part sends a prolongation between the two halves of the maxilla. Their external extremity projects be-

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[7] Fourth edition, 1888, p. 241.

> yond the corresponding bony part and applies itself to the anterior part of the tympanic ring and penetrates into the cavity of the tympanum. . . . Ultimately Meckel's cartilage disappears, first in its intermediate part, then at its anterior extremity; only the posterior part remaining as the malleus and incus. In front of the cartilage of Meckel appear two centers of ossification in a cartilage not well known, one right, the other left, toward the thirty-fifth day. They extend rapidly along the whole length of each half of the bone.

Testut,[8] who quotes from Kolliker, Broek, Masquelin[9] and Julin,[10] says that the lower jaw is primitively double, that each half is developed quite independently of the other, and that the bone which covers it does so just as the bones of the membranous cranium cover the primitive chondrocranium. He states, too, that the osseous condyle is preceded by a cartilaginous condyle. Thus, each half is a mixed bone, developing partly from embryonic connective tissue and partly from pre-existing cartilage. Agreement on this point is not complete and the method of development of the mandible, especially that of the condyle, requires new researches.

Testut states that, according to Rambaud and Renault, each half of the jaw has six ossific centers visible from the fiftieth day of intrauterine life.

1. The inferior point (visible at the thirtieth or thirty-fifth day), a small train of osseous granules, situated toward the inferior border of the bone.

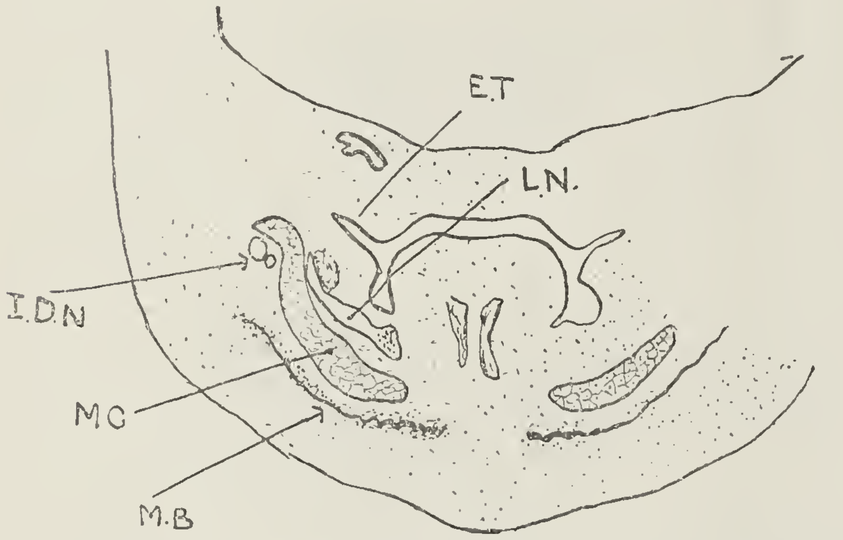

Fig. 4.—(Harvard collection, 852, H., 129). Horizontal section of 21 mm. embryo. M. C. Meckel's cartilage; I. D. N., inferior dental nerve; L. N., lingual nerve; E. T., Eustachian tube; M. B., membrane bone.

2. The invisive point, situated on each side of the symphysis in the region which the incisors will occupy later.

3. The supplementary point of the mental foramen, which helps by its inferior surface to form the mental foramen.

4. The condyloid point, which will form the condyle and subjacent portion of the ramus.

5. The coronoid point, out of which will develop the coronoid process and the portion of the ramus which forms its base.

6. The point forming the spine of Spix, situated on the posterior surface of the bone from the superior orifice of the future dental canal as far as the incisive piece.

According to Cruveilhier.[11]

> The inferior maxilla is developed by two points of ossification, one for each lateral half. Autenrieth admits, in addition, three complementary points, one for the condyle, one for the coronoid process and one for the angle, but I have never observed them. The case is different, however, with a point of ossification described and figured by Spix, which forms the inner side of the alveolar border or rather of the dental canal. In a fetus of about fifty or sixty days, I have seen a kind of bony spiculum which passed along the internal surface of the body and ramus of the bone. On one-half of the maxillary bone this spiculum was entirely free, but that of the other side adhered by the internal third of its length. The spine which surmounts the dental canal is nothing more than the extremity of this bony spiculum. It follows, therefore, that the inferior maxilla is developed from four points of ossification. The inferior maxilla takes precedence of all the bones of the head in its development and, indeed, of all the bones of the skeleton, except the clavicle. The inferior edge of the body of the bone appears as early as the thirtieth or thirty-fifth day. This extends backward to form the ramus and forward to form the portion which supports the incisor teeth. It is probable that the osseous point of the dental canal, mentioned above, appears at the same time. At a later period the groove becomes very considerable and is divided into alveoli by septa which at first are incomplete, but afterward become perfect; the alveoli and their septa occupy at this time the entire depth of the bone.

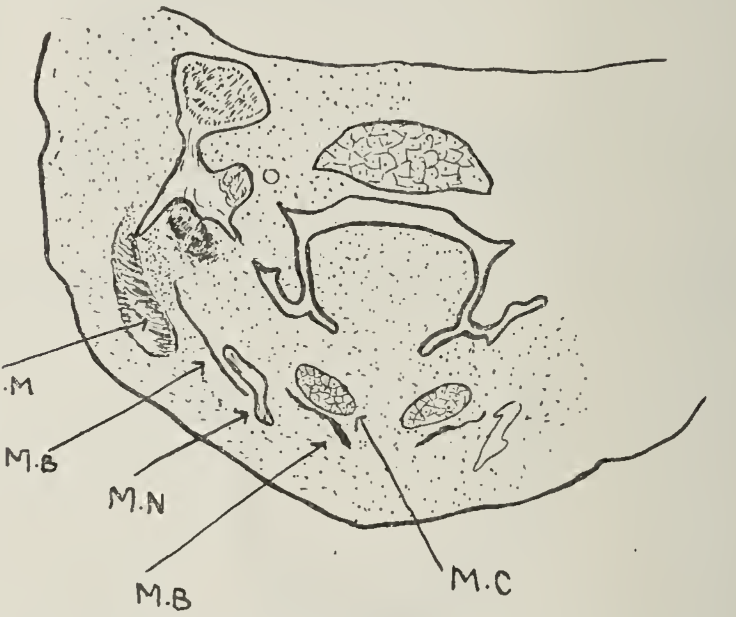

Fig. 5.—(Harvard collection, 852, G., 112.) Horizontal section of 21 mm. embryo. M. C., Meckel's cartilage; M. N., mental nerve; M. B., membrane bone; M. M.

> The point of ossification described by Spix is united to the rest of the bone from the fifteenth to the sixteenth day. (Spix affirms that it remains separate until the fourth month.) The two halves of the maxilla are joined together during the first year after birth, the traces of this union exist for some time, but are afterward effaced in the lower animals; the suture remains throughout life.

According to Humphry,[12] "ossification commences in the membrane from which the inferior maxilla is formed at a very early period, from the thirtieth to the thirty-fifth day, according to Beclard. Soon after two months, it is considerably advanced. The bone is then in two halves, united in the median line by membrane. In each of these halves, the condyle, coronoid portion and angle are quite evident, the mental part is of considerable size, and there is a lamina appended to the inner side of the ramus, which, shooting upward, forms the inner wall of the dental groove and dental canal. The appearance of the several parts at this early stage certainly gives countenance to the supposition that each of them had a separate ossifying nucleus, corresponding, or nearly corresponding, with the five pieces into which the jaw of the crocodile is permanently divided; that is to say, one for the under and outer part of the ramus, another for the inner alveolar border, a third for the coronoid process, a fourth for the condyle, and a fifth for the angle. If it be so, they become united very quickly after their formation. The probability, however, is that in this bone, as in the upper jaw, there is usually only one nucleus on either side and that the various processes are merely outgrowths; the instances in

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[8] Third edition, p. 197.

[9] Bull. Acad. Soc. de Belgique, 1878.

[10] Arch de Biol. de Van Beneden, 1880.

[11] Vol. 1, 1841. Transl. by Dr. D. H. Madden, edited by A. Tweedie.

[12] A Treatise on the Human Skeleton. 1858, p. 290.

> which the latter are developed from the separate nuclei being exceptional.

Kerkringius[13] describes the coronoid process as consisting, up to the third month, of an ossicle, separated by a suture from the rest of the maxilla. Beclard mentions, in addition to the nucleus for the ramus, which appears from the thirtieth to the thirty-fifth day, a nucleus for the coronoid process, which appears about the forty-fifth day. Autenrieth and Spix[14] describe also a nucleus for the condyle and one for the angle, to the probability of which Beclard gives assent. According to Spix, the inner wall of the jaw is derived from a separate nucleus. Blandin[15] found the body, the coronoid process and the hinder part of the bone separate from one another in a fetus of three months. As growth proceeds, the inner lamina of the ramus rises nearly to the same level with the outer and forms the inner alveolar border; the dental groove is deepened:

> Near the coronoid process the inner lamina joins the outer, arching over and enclosing the dental foramen and the hinder part of the dental canal. The latter is at this time a mere channel in which the nerves and vessels lie, at the bottom of the dental groove, in the greater part of its extent.

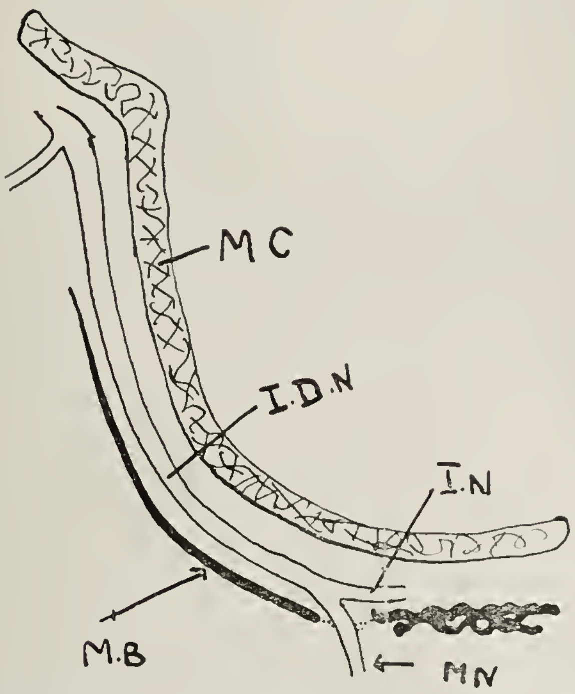

Fig. 6.—Schematic horizontal section of Meckel's cartilage; the inferior dental nerve. I. D. N., and the membrane bone, M. B. M. C., Meckel's cartilage; M. N., mental nerve.

Cleland[16] says:

> The lower jaw is, next to the clavicle, the earliest bone to show osseous deposit. It is developed round Meckel's cartilage, mainly outside of it, but additional centers have been noted at the lingula, at the angle, at the coronoid process and at the condyle. The condyle is laid down in cartilage before its ossification begins, but the supposition that Meckel's cartilage is in any part converted into osseous tissue of the jaw is erroneous.

Holden[17] says:

> Each lateral half of the lower jaw is represented in the early fetus by what is called the "first visceral arch or cartilage of Meckel." In the process of development, the proximal part of this cartilage is converted into the "malleus" bone of the middle ear. The distal part, mostly by the growth of bone round the cartilage, but slightly by a direct ossification of the cartilage itself, is converted into one-half of the lower jaw. The part between these two end portions becomes the "internal ligament" of the temporomaxillary articulation. The bony lower jaw begins to be formed, with perhaps the exception of the clavicle, earlier than any other bone in the body. For each of the lateral halves of the bone, we find that several osseous nuclei appear about the sixth week of fetal life in the membrane which invests Meckel's cartilage. The smaller plate forms the inferior dental canal and the inner wall of the sockets for the teeth. The symphysis end of each half of the body is formed by a direct ossification of the corresponding part of Meckel's cartilage. The condyle and part of the vertical ramus are formed by ossification of cartilage *not* connected with Meckel's, and the junction of the two lateral halves of the body at the symphysis does not take place till the first year after birth.

In 1883, Bland-Sutton[18] published a paper giving a very excellent and concise résumé of the work which had already been done on the subject and also giving the results of his own observations. He says:

> The examination of numerous specimens of human maxillæ from the sixth week onward has convinced me that the lower jaw arises from six distinct centers of ossification. five of them answering exactly to those described by Spix, the sixth representing the mento-Meckelian center of Callender.
>
> So far as I have been able to observe, the nucleus marked F. in Figure 1 is the first to appear; from this center the larger part of the body of the bone is formed. At first it resembles a shallow trough lodging the cartilage.
>
> The nuclei for condyle, coronoid and angle follow so rapidly that it is difficult to determine their order. About the same time, osseous granules may be seen in the perichondrium surrounding the distal end of Meckel's cartilage, gradually invading its substance.
>
> As soon as the various centers make their appearance, a thin network of osseous tissue quickly connects them. When this occurs a thin shelf of bone will be found immediately above Meckel's cartilage and the inferior dental nerve. This latter osseous streak lies on the inner side of the developing bone, quite distinct from the other centers, and represents the splenial. Now is the very best time to observe the various nuclei, particularly if the bone is rendered transparent by means of alcohol and oil of cloves. Its appearance is very striking. The bone presents the familiar shape of the fetal jaw, but its texture reminds one of a spider's web, the various centers showing like flies entangled in the mesh. (Fig. 1.)
>
> The order of events may be arranged in stages for the sake of clearness thus:
>
> 1. Meckel's cartilage appears.
> 2. Dentary is seen below.
> 3. Centers for condyle, coronoid, angle and mento-Meckelian.
> 4. Network of osseous tissue connects them together.

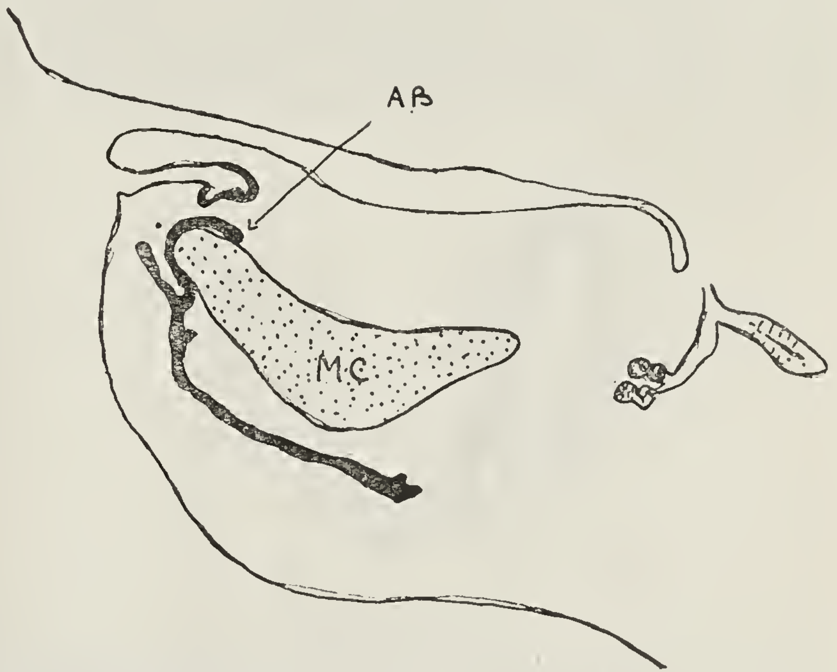

Fig. 7.—Sagittal section of head. M. C., Meckel's cartilage; A. B., alveolar border.

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[13] Osteogenia fœtuum, cap. ix.

[14] Hildebrandt's Anatomie, ii, 113.

[15] Anatomie, vol. i, p. 127.

[16] Cleland and Mackay: Human Anatomy, 1896, p. 250.

[17] Osteology, seventh edition, p. 121.

[18] Development of the Inferior Maxilla; Trans. Odontological Society.

5. Splenial appears as ledge of bone supporting teeth.
6. Disappearance of Meckel's cartilage from jaw, and fusion of splenial.

The splenial element is interesting on account of its relation to the developing teeth. On its first appearance it stands out at right angles to the dentary, serving to separate the teeth germs from Meckel's cartilage. If, at the fourth month of intrauterine life, the tissues on the inner side of the jaws be carefully dissected away, the splenial will be observed forming a distinct ledge of bone, supporting on its superior surface the dental follicles like flasks on a shelf; immediately beneath it runs Meckel's cartilage and the nerve. As the cartilage atrophies, the splenial extends downward to fuse with the dentary immediately below the nerve; in this way the mylohyoid branch gets shut off from the main portion of the inferior dental nerve. After the fourth month it extends vertically to form the inner wall of the maxilla, all trace of its originally separate condition being thus completely lost, the bone then assuming the condition which it presents at birth and with which we are all so familiar.

Let me now offer evidence of the compound nature of this bone of a different character. In the year 1814, the celebrated French anatomist, Serres, in a paper read before the Académie des Sciences, Paris, propounded certain laws bearing on ossification. Among them was one termed the "Loi de Conjugaison," by which he showed the various foramina in bones to result from the opposition of two or more distinct bones or distinct centers of ossification. To this law there were many exceptions; among the more unstable were certain foramina in the temporal bone and the inferior dental foramina.

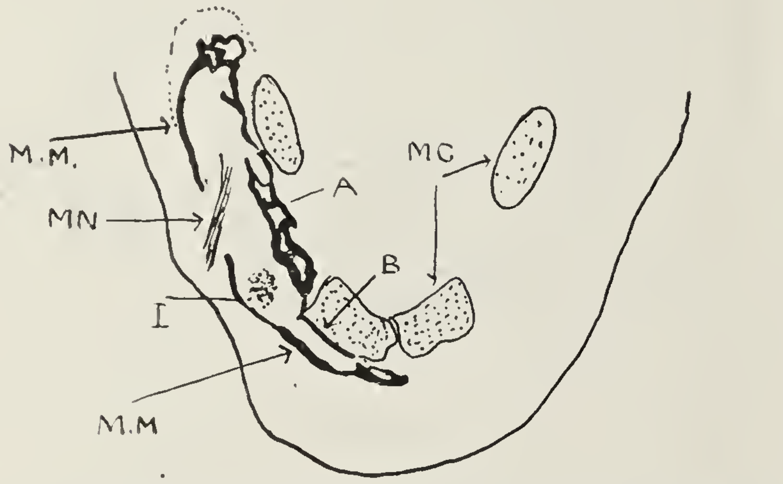

Fig. 8.—Horizontal section of 42 mm. embryo showing the growth of the inner alveolar border. M. M., primitive membrane bone; M. N., mental nerve; I., canine tooth; A., inner alveolar border; B., inner segment of that border; M. C., Meckel's cartilage.

When I first took up the subject of nerve foramina, Serres' researches were quite unknown to me, and I took as my guide this rule: "Whenever a nerve passes through a bone it marks the confluence of two or more ossific centers." Among the earliest bones to yield under this method of analysis were the temporal and the inferior maxilla; later I became acquainted with Serres' paper, the greater part of which is published as a footnote in the French traduction of Meckel's "Anatomie Comparée, vol. iv. Much to my satisfaction, I found that my method had yielded far more satisfactory results and had banished two of the apparently most obvious exceptions to the law, and it is most interesting to trace out the intricate pathways by which many nerves quit the cranial cavity in order to avoid piercing an ossific center.

Applied to the lower jaw, the rule stands thus: The nerves concerned are the inferior dental, mental and mylohyoid. The inferior dental enters by the foramen of the same name, formed by the coalescence of the coronoid, condyloid, dentary, angular and splenial elements; the nerve then travels in a tunnel formed on the outer side of the dentary and on the inner side of the splenial. The mental branch passes out through a fenestrum formed by dentary and mento-Meckelian ossification.

The mylohyoid runs in the groove which once lodged Meckel's cartilage, the sulcus, also corresponding to the junction of splenial with dentary. As the inferior dental passes along the canal, it sends up twigs to the teeth, and these twigs occupy foramina or spaces between the splenial and dentary. The relation of nerves thus lends additional help in unraveling the mystery.

Mr. Sutton, from this point, proceeds to the comparative side of the question, quoting the condition in the dogfish, the sturgeon, the *ganoid amia*, the cod, amphibia and reptiles. He finally gives a table of homologies thus:

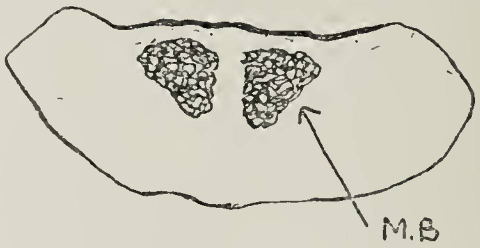

Fig 9.—(Harvard collection, 819, Q., 233.) Coronal section of 19 mm. embryo; M. B., membrane bone.

HOMO.	FISH.
Mento-Meckelian.	Mento-Meckelian.
Angle.	Angular.
Condyle.	Articular.
Coronoid.	Surangular.
Splenial.	Splenial.
Dentary.	Dentary.

I have quoted Mr. Sutton's paper as fully as possible, because it is practically the most recent work on the subject and for reasons which I may explain later.

My own observations on the subject commenced several years ago. In cutting a section of the neck of a three months' fetus for examination of the developing larynx from above downward, the appearance of the developing jaw was such that it was evident that the last word had not been said on its ossification. Having made observations of one or two facts, namely, that Meckel's cartilage did ossify and that the so-called dentary center extended right up to the middle line (symphysis), I had to rest content, having no material available by which I might test the accuracy of statements made with regard to other centers of ossification in the lower jaw. Latterly, however, I have come into possession of fresh material, for some of which I have to thank Dr. Keith of the London Hospital, for much other material, several old pupils, and for many valuable sections, made especially for this research, Prof. C. S. Minot of Harvard University, who has taken the greatest possible interest and trouble over the matter. Many of the figures illustrating this paper are from sections supplied by him, and I very gladly take this opportunity of acknowledging his great kindness and at the same time the usefulness of the Harvard embryologic collection, which apparently is at the disposal of any responsible worker.

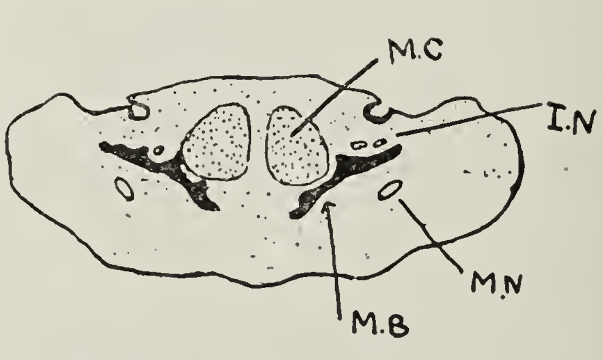

Fig. 10.—(Harvard collection, 819, P., 323.) Coronal section of 19 mm. embryo; M. C., Meckel's cartilage; M. B., membrane bone; M. N., mental nerve; I. N. incisive branch of mental nerve.

PERSONAL OBSERVATIONS.

In spite of the fact that I have come into possession of much new material, I am bound to say that I am not in a position to state exactly at what time ossification really begins, but I have cut embryos of from 12 to 15 mm. in length which may be reckoned as five and one-half weeks, and have seen no bone; ossification, however, is well advanced in embryos of from 19 to 21 mm. in length, so one may say that it occurs perhaps in the 17 mm. embryos. That, however, is not very important. It is rather to state the nature of the ossification and the number of centers of ossification which arise that this research has been undertaken.

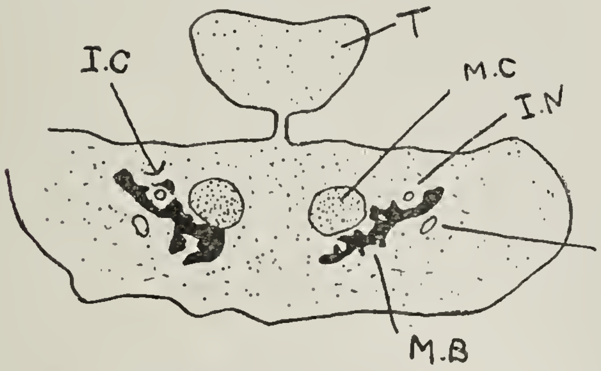

Fig. 11.—Coronal section of 19 mm. embryo; in front of mental foramen: incisor canal is just forming: M. B., membrane bone; M. N., mental nerve; I. N., incisive nerve; T. tongue; M. C. Meckel's cartilage.

We have seen the variety in the various accounts given in the text-books, and it remains for me to show if these accounts are accurate. In order to test these statements, sections have been made in various planes of embryos ranging from 19 mm. in length to over 100 mm., all sections being serial.

As is well known, Meckel's cartilage forms a very prominent object during the early stage in the development and ossification of the jaw, and until bone actually appears is for all practical purposes the lower jaw itself. Soon, as we have already seen, it becomes covered by ossification in membrane on its outer side, and from that time forward its importance diminishes and it ultimately disappears, except proximally and distally; proximally forming at least the malleus, and distally becoming an integral part of the bony jaw, for the time being at all events.

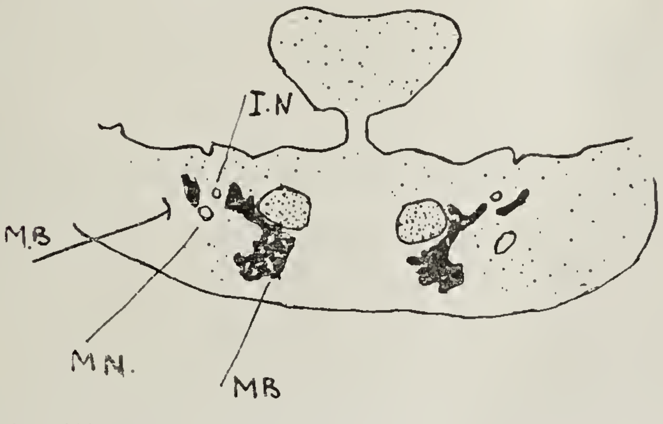

Fig. 12.—(Harvard collection, 819, P., 313.) Coronal section of 19 mm. embryo through mental foramen; M. N., mental nerve; I. N., incisive nerve.

As accounts given of Meckel's cartilage in man convey but little accurate information, and seeing that is such an important element in the formation of the jaw, it may not be out of place to make some remarks concerning it. It is somewhat late in appearance, for, although one can make out its anlage in precartilaginous conditions in the 12 to 13 mm. embryo, it does not become cartilaginous until after the femur does. This is not what one would expect, seeing that it is such an archaic structure.

When formed, the two cartilages (when seen in horizontal sections) form a horseshoe, incomplete in front, at first being separated by an appreciable interval; soon, however, they meet in the middle line, and later usually overlap one another there. Each cartilage is thickened in the vertical sense on each side of the future symphysis (see scheme of cartilage, Figs. 2 and 3). If we trace the cartilages backward from this anterior thickening, we find that they form a large bend, with the convexity outward, and still further backward form another bend, with the concavity outward, before ending in the malleus. The latter bend is found in front of the Eustachian tube. In its concavity lies the inferior dental nerve, and against its convexity the lingual nerve (Fig. 4).

FATE OF MECKEL'S CARTILAGE.

The posterior or proximal end becomes converted into the cartilaginous malleus, the anterior or distal end from about the level of the mental nerve becomes incorporated in the jaw and undergoes ossification. The remainder disappears completely. It is generally stated that a part, that stretching between the lingula of the lower jaw and the malleus, becomes the internal lateral ligament of the jaw, but that, I think, is more than doubtful, as one can see the ligament quite well developed at the same time that the cartilage is also well developed, the latter lying in a groove on the inner side of the former. In the transverse horizontal section of the head of a 42 mm. fetus, the two structures appear to be quite independent of one another. So much for Meckel's cartilage for the present; it may be referred to later.

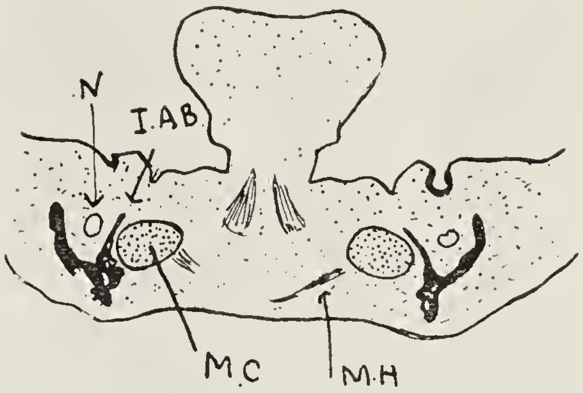

Fig. 13.—(Harvard collection, 819, O., 305.) Coronal section of 19 mm. embryo behind mental foramen to show inner alveolar border, I. A. B.; I. D. N., inferior dental nerve; M. C., Meckel's cartilage; M. H., mylo-hyoid muscle; N., inferior dental nerve.

We may now examine the appearance presented by the membrane bone, and that may be best done by examination of horizontal sections primarily, then of corneal ones corrected from time to time by sections cut sagittally.

HORIZONTAL SECTIONS.

These sections were cut by Prof. Minot from an embryo measuring in length 21.8 mm. and were stained with alum cochineal and alum hematoxylin—the latter only being effective. They yielded most interesting results.

In one section (Fig. 4) one can see Meckel's cartilage M. C. sweeping backward and outward; in its anterior concavity is the lingual nerve L. N., and in the concavity of the outwardly directed posterior end of the cartilage is the inferior dental nerve, I. D. N. Behind the lingual nerve is the Eustachian tube. All these, but especially

Meckel's cartilage and the inferior dental nerve and its terminal branches, are important landmarks. Figure 5 is cut a little higher up than Figure 4. It shows the anterior end of Meckel's cartilage, M. C., in front of which is membrane bone, to the outer side of which is a nerve—the mental, M. N. This is succeeded by another strip of membrane bone, M. B., giving an appearance as if there were here two centers of ossification. These two patches of bone are continuous below the mental nerve, as in Figure 4, and appear as one strip thicker near the middle line than elsewhere.

From what one can see in Figures 4 and 5 and in the scheme (Fig. 6), it appears that ossification has commenced in front of the anterior expanded end of Meckel's cartilage and the incisive branch of the inferior dental nerve, and has extended backward under the mental nerve, M. N., as a strip of bone rapidly diminishing in thickness, and consequently looking more faintly stained than that near the middle line. It is in close relation with the antero-external aspect of the inferior dental nerve and its incisive branch. No trace of any bone is to be seen on the inner side of these nerves at this time. In other words, there is not at this time developed an internal alveolar border. This, however, very rapidly appears, and its method of appearance is of great importance, as it involves the question of the separate origin of that part of the bone. Some authors, whose observations have certainly not been based on serial sections, e. g., Spix, Cruveilhier, Renault and Rambaud and Sutton, describe a separate ossific center for the splenial, as Sutton calls it. We will be able to see, however, that this inner alveolar border does not commence in that way, but arises by ingrowth from the main mass just behind the mental nerve in the form of an obliquely directed shelf, which comes to a point behind the "lingula." This shelf insinuates itself between the inferior dental nerve and Meckel's cartilage, coming to a point behind, as already said, and overhanging there Meckel's cartilage. At no time is it completely separate from the main mass, and it is, therefore, not an independent element —in other words, there is no splenial center.

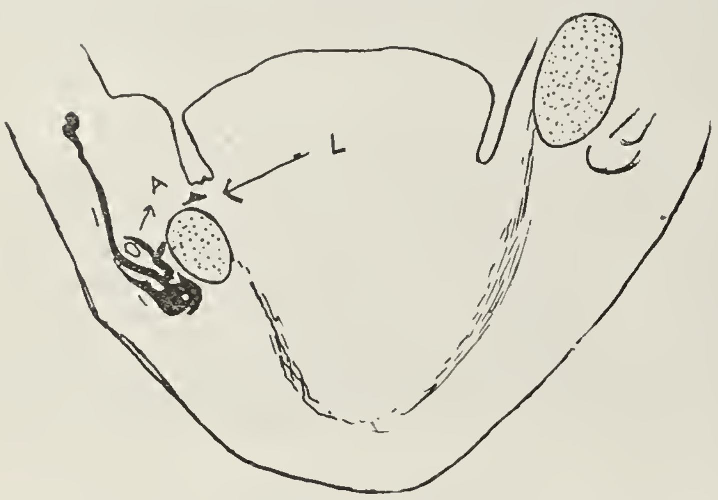

Fig. 14.—Showing formation of inferior dental canal at posterior end by a piece. A, growing outward from inner alveolar process. L. is the lingula.

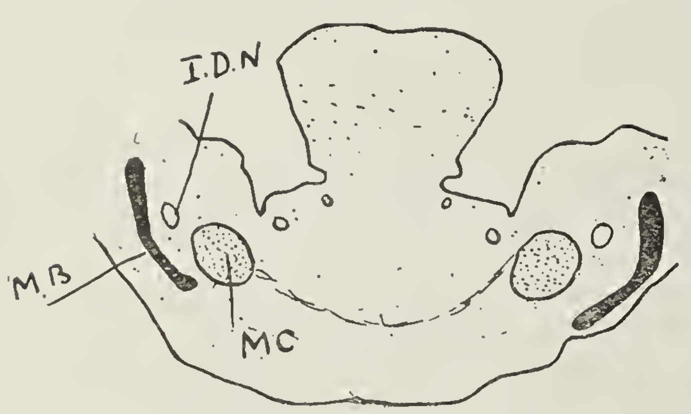

Fig. 15.—(Harvard collection, 819, N., 287.) Coronal section of 19 mm. embryo. I. D. N., inferior dental nerve; M. C., Meckel's cartilage; M. B., membrane bone.

At first, there is no inner alveolar border behind the incisive nerve, but there grows backward over Meckel's cartilage and under the incisive nerve near its origin from the inferior dental nerve, a shelf. In Figure 7 (my own collection), this shelf, A. B., can be seen growing backward over Meckel's cartilage, M. C., and under a tooth germ (second incisor). The inner alveolar border, then, arises from the main mass in two ingrowths, first, one under the inferior dental nerve, which enlarges in the backward direction and ends ultimately at the lingula, the other growing under the outer end of the incisive branch of the inferior dental nerve and extending inward toward the middle line.

In Figure 8 (my own collection), a horizontal section of the head of a 42 mm. embryo, M. M. represents primitive membrane bone forming the outer alveolar border. M. N. is the mental nerve. I. is the canine tooth. A. is the posterior segment of the inner alveolar border much reticulated and, therefore, in an advanced state of ossification, whereas B is the anterior segment of that border existing only as a thin lamella and developing somewhat later. It will be to our advantage to examine a series of coronal sections of a 19 mm. embryo cut by Prof. Minot and corrected by others of a later date cut by him and by myself. If such be examined from before backward, very instructive views are obtained both of the manner of growth of the formative bony center and its subsequent extensions.

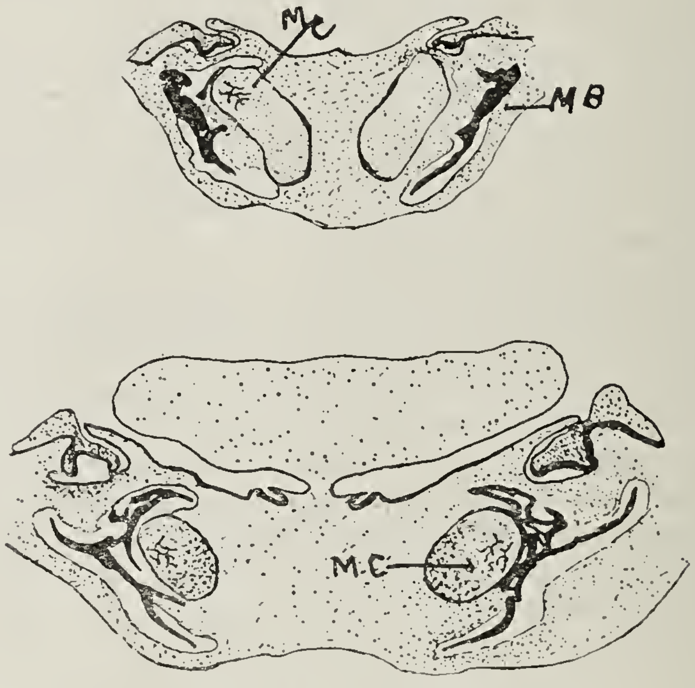

Fig. 16.—(a) Meckel's cartilage ossifying; M. B., membrane bone. (b) Shows upper and lower shelves, which ensheath Meckel's cartilage.

In Figure 9, one can see on each side of the middle line a mass of membrane bone which lies in front of the anterior expanded end of Meckel's cartilage and extends to the middle line, not, as Sutton thinks, stopping short at the mental nerve. He says that all that part of the mandible anterior to the mental foramen is ossified from Meckel's cartilage. This section, and others, notably one of the third month, cut horizontally, show that the membrane bone reaches to the middle line

(Figs. 9 and 8), and that Meckel's cartilage does not ossify as yet up to the middle line.

In Figure 10, we have still no inner alveolar border, the two cartilages of Meckel are altering their shape. M. C. is Meckel's cartilage. M. B. is membrane bone outside it. M. N. the mental nerve, and I. N. the incisive branch of that nerve.

In Figure 11, which is just in front of the mental foramen, one sees Meckel's cartilage more widely separated and more circular in form; on the outer side of them one sees the membrane bone M. B. jutting upward and outward between the mental and incisive nerves, M. N. and I. N. In the left half of the section, one can see the incisive nerve being enclosed in a canal—the incisive canal I. C. There is no inner alveolar border in this section. In Figure 12 the jaw is cut through at the mental foramen. The membrane bone here seems to be in two parts and one might think that there were two centers of ossification, but in the subsequent sections we will find that is not the case—M. B. is membrane bone, M. N. the mental nerve, and I. N. the incisive nerve. The two nerves here mark the mental foramen.

In Figure 13 the jaw is cut behind the mental foramen and one now sees an alveolar border passing up between the inferior dental nerve N. and Meckel's cartilage M. C., it is evidently a shelf and an outgrowth from the main mass. This inner alveolar border comes to a point behind, hence when cut coronally that point appears detached (Fig. 14, my own collection) and simulates a separate splenial.

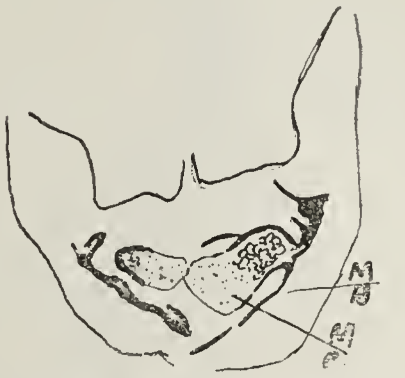

Fig. 17.—Coronal section at third month, showing ensheathing of Meckel's cartilage by membrane bone. M. C., Meckel's cartilage; M. B., membrane bone.

Still further back (Fig. 15) the inner alveolar border has disappeared and the jaw is once more unilamellar, having to its inner side Meckel's cartilage, M. C., and the inferior dental nerve, I. D. N. Still further back one may see the condyle in a procartilaginous condition, but no drawing is given of this, the coronoid process is also evident, but quite thin and it can be seen to be an ossification of that fibrous blastema which lies like a wedge between the masseter and temporal muscles at this early stage of life; it is perhaps more in connection with the temporal muscle than the masseter that it is developed.

So far, then, we have seen a jaw consisting of Meckel's cartilage and a membrane bone, which stretches to the middle line in front, and behind the mental nerve gives off a shelf—the internal alveolar border. We have seen that the coronoid process, and for that matter too, the angle, are thin, and that the condyle is not yet ossified. Very soon this membrane bone increases in amount, it has already done so in front and where ossification first took place, Figure 6; it now thickens and becomes reticulated in the region of the angle, the top of the coronoid process and in that part of the inner alveolar border which is developed behind the nerve. It is now that those false impressions may arise from the employment of crude methods such as that of Sutton, who, removing one-half of the jaw from a fetus, immersed it in alcohol and cleared it with balsam and saw centers for "dentary," "condyle," and "coronoid," as well as a separate "splenial" center. Serial sections will show the falsity of conclusions drawn from the employment of such a method.

FURTHER CHANGES IN THE MEMBRANE BONE—THE FORMATION OF THE ROOF OF THE INFERIOR DENTAL CANAL.

This commences to be formed quite early in fetal life, in the neighborhood, first, of the mental nerve, then of the incisive branch of the inferior dental, and, considerably later, during the third month of fetal life it appears near the lingula. In each case, save that of the roof of the mental canal, it appears in the form of a spicule running from the inner alveolar wall to the outer. In Figure 11, Harvard collection, the incisive nerve can be seen lying in a canal or tunnel formed by a spicule of bone arching over it from what will become inner alveolar border to that which is the outer alveolar border. In Figure 14 (my own collection) there can be seen at A a spicule of bone which is growing outward over the inferior dental nerve to the outer bony lamella, and so covering over the nerve in the neighborhood of the permanent inferior dental foramen.

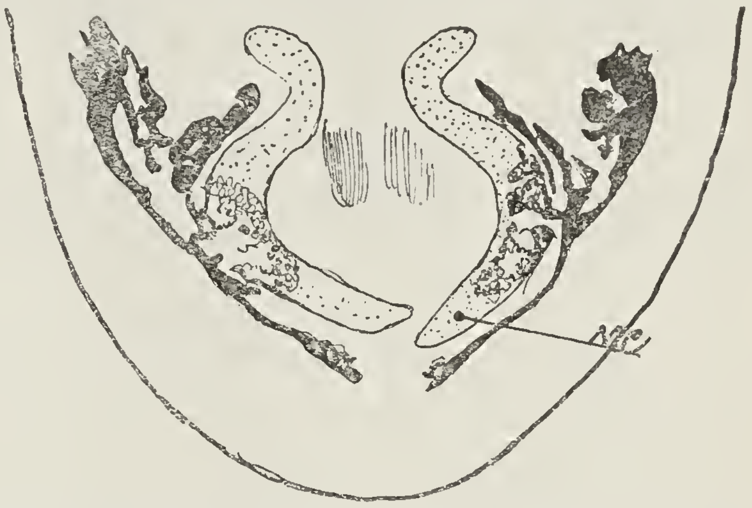

Fig. 18.—Horizontal section of jaw at third month, showing outward bend of Meckel's cartilage, M. C., and that cartilage undergoing ossification.

The inferior dental foramen is not, by the way, as Sutton would have us believe, formed at the junction of the coronoid angular, dentary, condyloid and splenial centers, for these centers are, for the most part, imaginary, certainly in the case of the coronoid, angular and splenial, and the condyle is so peculiarly formed as to be out of the question here. Sutton, too, would have us believe that the mental foramen is formed at the junction of his mento-Meckelian center, developed from Meckel's cartilage with the membrane bone which he calls dentary. We have seen that there is no such mento-Meckelian center such as Sutton describes and that the mental foramen is originally a groove on the top of the membrane bone which grows from before backward underneath the mental nerve.

In support of his theory with reference to the splenial center, Sutton quotes the mylohyoid nerve and states that it is shut off from the inferior dental by fusion of the "splenial" with the dentary. As a matter of fact, the mylohyoid nerve has reached its place before the inner alveolar border has grown to any extent backward.

FURTHER CHANGES IN THE MEMBRANE BONE.

These changes, so far as we are concerned here, involve its relation to Meckel's cartilage. Sections cut either coronally or horizontally show that Meckel's cartilage becomes invested with a covering of membrane bone, partly by ossification taking place in its sheath, partly by projecting shelves growing from the inner alveolar border and the undivided membrane bone below that. Then, in Figure 16—a, b—(my own collection), Meckel's cartilage can be seen to lie in a bony groove whose upper wall is from the inner alveolar border and the lower one from the main mass.

In Figure 17, ossification can be seen in the sheath of Meckel's cartilage. By the meeting of the upper and lower shelves and the fusion of the ossified sheath of Meckel's cartilage, the cartilage becomes included in front of the mental nerve within the jaw; behind the nerve it lies in a groove formed by similar shelves, which, however, never meet.

The septa between the tooth sockets are developed comparatively late in fetal life, that one behind the canine tooth appearing before the others. It can be very well seen in a four months' fetus. During this time, changes have been taking place in Meckel's cartilage itself.

OSSIFICATION OF MECKEL'S CARTILAGE.

About the tenth week of fetal life, ossification commences in Meckel's cartilage at a spot on its outer side corresponding with the site of the mental foramen, or even a little internal to this, and nearer the upper than the lower border of the cartilage. This ossification extends gradually inward, but does not completely involve anterior end of Meckel's cartilage until the time of birth even, as evidenced by the presence of cartilaginous masses which are well known in this situation (Figures 16, 17, 18).

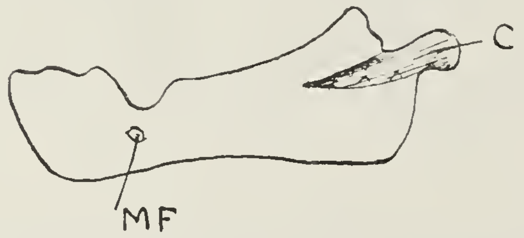

Fig. 19.—Scheme of left half of jaw, showing plug of cartilage. C., and mental foramen, M. F.

APPEARANCE OF ADDITIONAL CARTILAGES IN THE JAWS.

These are described in various places in the jaw. I have not myself seen all that have been described, but that is no reason for believing that they do not exist, the only question being their constancy. One, at least, of these cartilaginous masses is constant and it is of peculiar form, existing in the form of a plug, which enlarges to form the condyle proximally and tapers away distally to a point, having traversed the neck and root of the coronoid process of the jaw. This is shown in Figure 19, C being this plug of cartilage. It appears during the second and third months and very soon becomes calcified. It is enveloped everywhere except at the condyle by membrane bone and it becomes transformed into bone itself almost as soon as formed.

In Figure 20 (my own collection) one sees this cartilage undergoing ossification and being surrounded by a sheath of membrane bone; at the condyle B there is a part of cartilage as yet unossified and this is covered by a cap of fibrous tissue which, according to Hertwig, is permanent. This plug of cartilage has never any connection with Meckel's cartilage.

Recently, Dr. Low of Aberdeen,[19] in an excellent demonstration of the jaw ossification, showed a patch of cartilage along the anterior border of the coronoid process, but I do not know if that be constant. I, myself, have never met with it, but that may be because the material I have cut is too young.[20] Other patches are said to occur at the angle and at the outer alveolar border in the neighborhood of the incisor and canine teeth (Kollman).

CONCLUSIONS.

Having now examined various sections of the jaw and those of different ages, one may draw the following conclusions:

First.—The jaw in its ossification is not so complex as some would have us think, but it is for all that complex, involving (a) Meckel's cartilage at its anterior extremity, (b) the membrane on the outer side of Meckel's cartilage; (c) at least one accessory cartilage which is found in the condyle, neck and base of the coronoid process of the jaw. These statements apply to each half of the jaw.

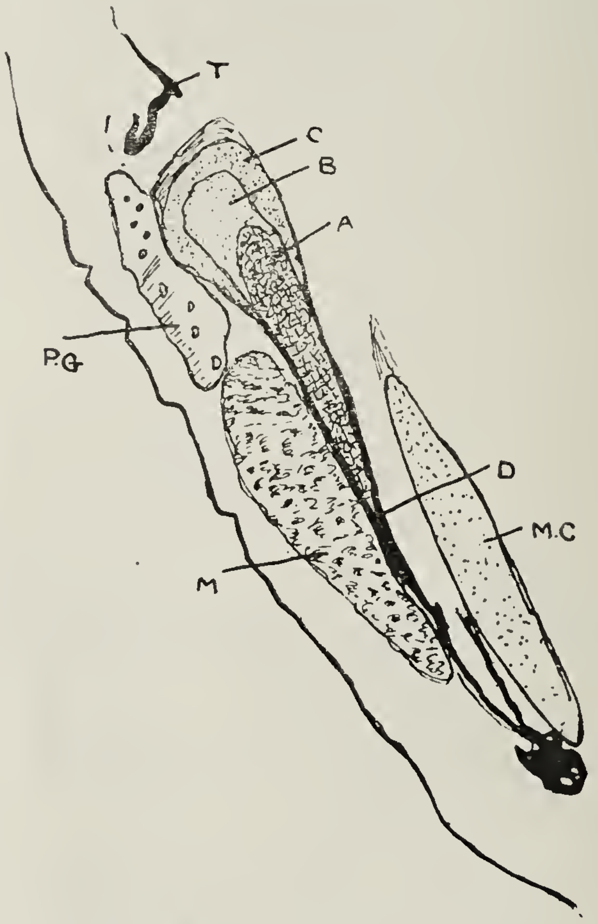

Fig. 20.—Horizontal section of three months head, through condyle and neck of jaw. D., ensheathing membrane bone; A., cartilage bone; P. G., parotid gland; M., masseter; M. C., Meckel's cartilage.

Second.—In order of sequence, ossification occurs first in the membrane between the mental nerve and the middle line and extends backward under the mental nerve. Next, ossification commences in Meckel's cartilage about the tenth week of fetal life in the region of the mental foramen and gradually extends inward. That part of the jaw then between the mental foramen and the symphysis is compound in origin, being partly cartilaginous, partly membranous, not entirely cartilaginous, as Sutton says. Finally, ossification takes place in the accessory mass of cartilage in the condyle neck and root of the coronoid process at the third month.

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[19] Proceedings of Anat. Soc. of Great Britain and Ireland, May, 1905.

[20] Since this was written I have seen a specimen showing the cartilaginous strip along the anterior border of the coronoid process.

Third.—There are no separate centers in membrane for either the coronoid process or for the angle or the so-called splenial, all these parts being outgrowths, as it were, from the main mass.

Fourth.—The inner alveolar border is developed in two parts by ingrowth from the main mass and at two different periods. That part behind the mental foramen appearing first and elongating from before backward, that part in front of the foramen appearing later and growing from behind forward.

Fifth.—The canal for the nerves is completed by the growth of spicules from one alveolar border to the other over the top of the nerves, the mental nerve being first so covered, then the incisive, and much later the inferior dental near the permanent inferior dental foramen.

Sixth.—The sockets for the teeth become bony comparatively late, that for the canine appearing first.

Seventh.—Meckel's cartilage becomes incorporated in the jaw anteriorly by the development of upper and lower shelves, which gradually close over it; behind the mental foramen these shelves do not meet, and Meckel's cartilage is consequently not included in the jaw, but gradually atrophies.

Eighth.—I do not think that Meckel's cartilage atrophies to form the internal lateral ligament of the jaw. This ligament at the fourth month can be seen quite distinctly in an ordinary dissection to be independent of Meckel's cartilage.

All the figures except 2, 6 and 7 are camera lucida drawings.

THE ANTI-MICROBIC ACTION OF IODIN.*

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CHICAGO.

(Concluded from page 606.)

STAPHYLOCOCCUS EXPERIMENTS.

The tables in Group 4 show the results of the experiments with cultures of *Staphylococcus pyogenes aureus:*

CONSIDERATION OF EXPERIMENTS WITH STAPHYLOCOCCUS.

1/1000 for *fifteen* minutes shows marked inhibitory effect. A and C show no growth throughout. On the second day B and D show fractional growth which increases gradually on the third and fourth days, when it equals less than ½ control growths.

1/1000 for *thirty* minutes gives a marked inhibitory effect. The first day there is no growth. On the second day A equals 1/6 control growth, B shows a point of growth, C is negative, and D gives 3/7 of control growth. On the third and fourth days B and C show simply a large point, while A and D give a gradual increase, equaling less than ½ control growth.

1/1000 for *sixty* minutes shows a marked inhibitory effect. On the first day there is no growth. On the second day A gives no growth, B and C give points, D equals control growth. On third and fourth days A shows no growth, B and C give no further development, D equals control growth.

1/500 for *fifteen* minutes shows an inhibitory effect. On the first day A, C, and D are without growth, B equals ½ control growth. On the second day the growth on experimental tubes equals 1/6 control growth. This growth increases slowly on the third and fourth days, when it equals 1/3 control growth.

1/500 for *thirty* minutes shows an inhibitory effect. A, C, and D show no growth the first day, while B equals 1/3 control growth. On the second day A, B, and C show less than ¼ control growth, D equals a point. On the third and fourth days D gives no further development, while A, B, and C show a gradual increase, which is less than ⅜ of control growth on the fourth day.

1/500 for *sixty* minutes exhibits an inhibitory effect. On the first day A, C, and D give no growth, B, equals ¼ control growth. On the second day A and B equal ¼ control growth, C shows a point and D shows no growth. On the third and fourth days A and B show rather rapid increase in growth, equaling ⅝ control growth on the fourth day. C shows a less rapid increase, equaling ¼ control growth. D shows points.

1/300 for *fifteen* minutes exhibits a marked inhibitory effect. On the first day there is no growth. On the second day A, C, and D give no growth, B equals 1/6 control growth. On the third and fourth days A and C show points, while B and D show slowly increasing growth, equaling about 1/3 control growth.

1/300 for *thirty* minutes shows a marked inhibitory effect. On the first and second days there is no growth. C and D show no growth throughout. On the third and fourth days A and B show a slightly increasing fractional growth, equaling about 1/7 control growth.

GROUP 4.—ACTION OF SOLUTIONS ON STAPHYLOCOCCUS PYOGENES AUREUS (FOUR-DAY-OLD CULTURES).

TABLE 52.—IODIN 1-1,000. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	.5	0	.5	0	.5
2	0	1.5	.5	.7	0	1	.3	1
3	0	2.2	1	1.2	0	2	.6	1.5
4	0	3.5	1.2	2.5	0	3	1	3

TABLE 53.—IODIN 1-1,000. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	.6	0	1	0	.5
2	.3	2	?	1.5	0	2	1	2.5
3	.5	3	?	2.5	?	3	1.2	3.5
4	1	3.5	?	3	?	3.5	2.2	4

TABLE 54.—IODIN 1-1,000. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	1	0	.5	0	.3
2	0	1.5	?	2	?	1	1	1
3	0	2.5	?	2.5	?	2	2	1.5
4	0	3	?	3	?	2.5	2.5	2.5

TABLE 55.—IODIN 1-500. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	.5	1	0	1.5	0	1.5
2	.2	3	1	2	.1	3	.1	3
3	.5	3.5	2.2	3	.5	4.5	.5	4
4	1	4	2.5	4	1	5	1.2	4.5

TABLE 56.—IODIN 1-500. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	2	.3	1	0	2	0	2
2	.1	3	.7	2	.5	3	?	3
3	.2	3.5	2	3	1	4.5	?	4
4	.5	4	2.5	4	1.5	5	?	5

TABLE 57.—IODIN 1-500. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	.6	.2	1	0	1.5	0	2
2	.5	2	.5	2	?	2.5	0	3
3	2	3.5	1	3	.2	4	?	4
4	3	4	2.2	4	1.2	5	?	5

TABLE 58.—IODIN 1-300. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	.5	0	1	0	1	0	.5
2	0	1.3	.3	2	0	1.5	0	1
3	?	3	1.2	3	?	2.5	.2	2.5
4	?	4	1.6	4	?	3.5	.3	3

TABLE 59.—IODIN 1-300. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	.3	0	1	0	.2
2	0	1.5	0	1.5	0	1.5	0	1.2
3	.3	3	.2	2.5	0	2	0	2
4	.7	3.5	.6	3.5	0	3	0	3

TABLE 60.—IODIN 1-300. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	.7	0	.5	0	.5	0	1
2	0	1	0	1	0	1	0	2
3	.1	2.5	0	2	.1	2.7	.1	3
4	.3	4	0	3	.5	3.7	.7	4

TABLE 61.—IODIN 1-200. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	.3	0	.3	0	1
2	0	2	0	1.5	0	1.5	0	2
3	0	3	0	3	0	2.5	0	3
4	0	4	0	4	0	3	0	4

TABLE 62.—IODIN 1-200. EXPOSURE 10 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	.5	0	1	0	.5	0	.1
2	0	2	0	2	0	3	0	1.5
3	0	3	0	2.5	0	4	0	3
4	0	4	0	3	0	4.2	0	3.5

TABLE 63.—IODIN 1-200. EXPOSURE 5 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	.5	0	1	0	1
2	0	2	0	1	0	1.5	0	2
3	0	3	0	2.5	0	3	0	3.5
4	0	4	0	3.5	0	4	0	4

TABLE 64.—IODIN 1-200. EXPOSURE 4 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	0	1	0	1.5	0	.5
2	0	2.5	0	2	0	2.5	0	1.5
3	0	3.5	?	3	.1	4.5	0	3
4	0	4.5	?	4	.5	5	0	4

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* Work done as Fellow in Surgery at the Senn Laboratory, Rush Medical College.

1/300 for *sixty* minutes shows a marked inhibitory effect. On the first and second days there is no growth. On the third and fourth days A, C, and D show a small fractional growth which increases slightly, equaling 1/7 control growth on the fourth day. B shows no growth throughout.

1/200 for *fifteen* minutes shows no growth.

1/200 for *ten* minutes shows no growth.

1/200 for *five* minutes shows no growth.

1/200 for *four* minutes exhibits a very marked inhibitory effect, A and D showing no growth. On the third day B shows points of growth and C a small fractional growth. On the fourth day there is a slight increase in both B and C. B showing more points of growth, while C equals 1/10 of control growth.

SUMMARY OF EVIDENCE ON STAPHYLOCOCCUS.

The death of the *Staphylococcus pyogenes aureus* occurs after an exposure of five minutes to a 1/200 solution of iodin. A consideration of the inhibitory action shows that this effect begins after an exposure to a 1/1,000 solution for fifteen minutes, where it is quite marked. This effect, however, increases but slightly for the longer exposure to this strength and also for all exposures to the 1/500 solution. Irregularity in action is observed. On using the 1/300 solution the inhibitive effect shows a great augmentation over preceding strength, which increases irregularly for time of exposure. When we expose for less than five minutes to a 1/200 solution (the death point) marked inhibition, but not death, of micro-organism is observed.

STREPTOCOCCUS EXPERIMENTS.

The tables in Group 5 show the experiments with streptococcus cultures.

GROUP 5.—ACTION OF SOLUTIONS ON STREPTOCOCCUS PYOGENES (THREE-DAY-OLD CULTURES).

Table 65.—Iodin. 1-1,000. Exposure 15 M.*

Day.	A	A′	B	B′	C	C′	D	D′
1	?	2	.3	2	?	2	?	1.7
2	?	3	.3	2.5	?	2.5	.1	2.5
3	?	3.2	.5	3	.2	3	.3	3
4	.6	3.5	.5	3.2	.3	3.3	.5	3.2

Table 66.—Iodin 1-1,000. Exposure 30 Min.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	0	2	0	2	0	1.5
2	0	2.5	0	2.2	0	3	0	2.2
3	0	3.5	0	3	0	3.5	0	3
4	0	4	0	3.5	0	4	0	3.5

Table 67.—Iodin 1-500. Exposure 10 Min.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	0	1	0	2	0	2
2	0	2.5	0	2.5	0	3	0	3
3	0	3	0	3.5	0	4	0	3.5
4	0	4	0	4	0	5	0	4

Table 68.—Iodin 1-500. Exposure 5 Min.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	.5	0	1	0	1.5
2	0	1.5	0	1	0	2	0	2.2
3	0	3	0	2	0	3	0	3.5
4	0	3.5	0	3	0	3.5	0	4

Table 69.—Iodin 1-500. Exposure 4 Min.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1.5	0	1	0	1	0	1
2	0	2	0	1.5	0	1.3	0	1.7
3	0	3	0	2.5	0	2	0	2.5
4	0	4	0	3.5	0	3	0	3

Table 70.—Iodin 1-500. Exposure 3 Min.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	.7	0	1.5	0	1	0	.5
2	0	2	0	2.5	0	2	0	1.5
3	0	3	0	3	0	3.2	0	3
4	0	4	0	3.5	0	3.5	0	4

Table 71.—Iodin 1-500. Exposure 2 Min.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	1	0	1.2	0	1.5
2	0	2	0	2	0	2	0	2.5
3	0	3	0	3	0	3	0	3.5
4	0	3.5	0	4	0	3.5	0	4

Table 72.—Iodin 1-500. Exposure 1 Min.

Day.	A	A′	B	B′	C	C′	D	D′
1	0	1	0	1.5	0	1	0	1
2	0	2	0	2.5	.5	2	0	2
3	0	3	0	3.5	1	3.2	0	3
4	0	4	0	4	2	3.5	0	3.5

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* In the exp. tubes the growth was extremely thin and film-like, showing in A, B, C and D microscopically, poorly staining small streptococci, in comparison with the controls.

CONSIDERATION OF EXPERIMENTS WITH STREPTOCOCCUS.

1/1000 for *fifteen* minutes shows an inhibitory effect. On the first day A, C, and D show points of growth, B 1/6 of control growth. On the second. third and fourth days there is a very slight, irregular increase in growth on experimental tubes. This growth equals about 1/6 control growth.

1/1000 for *thirty* minutes shows no growth.

1/500 for *ten* minutes shows no growth.

1/500 for *five*, *four*, *three*, and *two* minutes shows no growth.

1/500 for *one* minute exhibits marked inhibitory effect. A, B and D are free from growth throughout. On the second day C shows a fractional growth which increases rather rapidly on the third and fourth days, equaling 4/7 of the control growth at the end.

SUMMARY OF EVIDENCE ON STREPTOCOCCUS.

An exposure for two minutes to a 1/500 solution of iodin causes the death of *Streptococcus pyogenes.* The same result is obtained by using a 1/1000 solution for thirty minutes. A consideration of the inhibitory effect shows that this power is exhibited very markedly by a 1/1000 solution for fifteen minutes. Likewise, on exposing organism to a 1/500 solution for one minute, we find that an inhibitory power of medium degree is shown by one tube, while the others show death of organism. Therefore, it is evident that in the case of streptococcus pyogenes the sphere of inhibition is small because the relative points at which inhibition and death occur are almost identical.

BLASTOMYCOSIS EXPERIMENTS.

The experiments with blastomycosis cultures are detailed in Group 6.

CONSIDERATION OF EXPERIMENTS WITH BLASTOMYCOSIS.

1/1000 for *fifteen* minutes shows no effect.

1/1000 for *thirty* minutes shows no effect.

1/1000 for *sixty* minutes shows on the fourth day of real growth or second day of apparent growth a considerable inhibitory effect which, however, does not extend to the following day.

1/500 for *fifteen* minutes shows no growth.

1/500 for *ten*, *five*, and *four* minutes shows no growth.

1/500 for *three* minutes shows no growth on A, C, and D throughout. B is free from growth up to the fourth day of the actual growth or third day of real growth. At this point a very slight growth is noticed which increases very slowly to the tenth day, when it equals ¼ control growth.

1/500 for *two and one-half* minutes shows an inhibitory effect of markedly varying degree on the different tubes. C gives no growth throughout, D gives none up to the eighth day, when a unit of growth appears which increases progressively on the ninth and tenth days, equaling, on the tenth day, 1/3 control growth. A shows a marked inhibitory effect up to the seventh day, when it gives a rapid increase in growth. On the remaining days the experimental and control tubes are practically identical in growth. Likewise, B shows a marked inhibitory effect up to the fifth day, when experimental tube begins to increase rapidly, equaling control tube on the eighth, ninth and tenth days.

SUMMARY OF EVIDENCE ON BLASTOMYCOSIS.

Blastomyces is killed by an exposure of four minutes to a 1/500 solution of iodin. Here, more markedly than in preceding series, is the inhibitory effect of solutions employed shown to be of little consequence. In fact, in this series, it may be almost entirely disregarded, for it is shown only transitorily for one day by a 1/1000 solution for sixty minutes. In other words, there is practically no sphere of inhibition, the first effect shown being destruction of fungus. The exposures for three and two and one-half minutes simply bear out preceding statements, showing as they do either absolute death or markedly irregular inhibitory effect.

ACTINOMYCOSIS EXPERIMENTS.

The results of the experiments with cultures of actinomycosis are shown in the tables in Group 7.

CONSIDERATION OF EXPERIMENTS WITH ACTINOMYCOSIS.

1/1000 for *fifteen* minutes shows no inhibitory effect, especially on the second, third and fourth days. A and C are negative to the fifth day, when points appear. Likewise, on the fifth day B equals 3/7 control growth and D gives points. From the fifth day on A and C show no further development, B increases rapidly to 2/3 control growth, and D slowly to 1/6 control growth.

1/1000 for *thirty* minutes shows a marked inhibitory effect. On the second, third and fourth days there is no growth. On the fifth day points appear on A, C, and D, which, to the end, increase very slightly. On the fifth day points of growth appear on B, which, on the remaining days, increases slowly, equaling at the end 1/12 of control growth.

GROUP 6.—ACTION OF SOLUTIONS ON BLASTOMYCOSIS (TEN-DAY-OLD CULTURES).

TABLE 73.—IODIN 1-1,000. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
3	?	?	?	?	?	?	?	?
4	1	1	1.5	2	1	1	1.5	2
5	1.2	1.5	3	3	1.2	2	2	2.5
6	1.5	2.2	3.5	3.5	1.2	3	2.5	3.5
7	2.7	3.5	4	4	2	4	3.5	4.5
8	4.2	4.2	5	5	4	5	5	5
9	4.7	4.5	5.5	5.5	4.2	5	5.5	5.2
10	5.2	5	6	6	5	5.5	6	6

TABLE 74.—IODIN 1-1,000. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
3	?	?	?	?	?	?	?	?
4	1	1	1.2	2	1	1	1.5	2
5	2	1.5	2.5	3	1.2	2	2	2.5
6	2.5	2.2	3	3.5	1.7	3	2.2	3.5
7	3	3.5	4	4	3	4	3	4.5
8	4	4.2	4.5	5	4.5	5	4	5
9	4.5	4.5	5	5.5	5	5	4.7	5.2
10	4.7	5	5.5	6	6	5.5	5.5	6

TABLE 75.—IODIN 1-1,000. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
3	?	?	?	?	?	?	?	?
4	.6	1	.6	2	.5	1	1	2
5	1.5	1.5	2	3	1	2	2.5	2.5
6	2	2.2	2.7	3.5	1.5	3	3	3.5
7	2.5	3.5	4	4	2.5	4	4	4.5
8	4	4.2	5	5	4	5	5	5
9	4.5	4.5	5.5	5.5	5	5	5.5	5.2
10	5.2	5	6	6	6	5.5	6.5	6

TABLE 76.—IODIN 1-500. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	.1	0	.1	0	.2	0	.2
4	0	.5	0	.5	0	.7	0	.7
5	0	2.2	0	1.2	0	1.5	0	2
6	0	3.5	0	3	0	2.5	0	3
7	0	4.5	0	4.5	0	3.5	0	4
8	0	5	0	5	0	4.5	0	4.5
9	0	5.5	0	5.5	0	5	0	5
10	0	6	0	6	0	5.5	0	5.5

TABLE 77.—IODIN 1-500. EXPOSURE 10 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	.5	0	.6	0	.5	0	.7
4	0	1	0	2	0	1.2	0	1.5
5	0	2.7	0	3	0	2.5	0	2.7
6	0	3.5	0	4	0	3	0	4
7	0	4	0	4.5	0	4	0	4.5
8	0	4.5	0	5	0	4.5	0	5
9	0	5.5	0	5.6	0	5	0	5.5
10	0	6	0	6	0	5.5	0	6

TABLE 78.—IODIN 1-500. EXPOSURE 5 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	1	0	1	0	1	0	1
4	0	1.7	0	2	0	2	0	1.5
5	0	3	0	3	0	3.5	0	2.5
6	0	3.5	0	4	0	4	0	2.7
7	0	4	0	4.5	0	4.5	0	3
8	0	5	0	5.5	0	5.5	0	4
9	0	5.5	0	6	0	6	0	4.5
10	0	6	0	6.5	0	6.5	0	5

TABLE 79.—IODIN 1-500. EXPOSURE 4 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	.5	0	?	0	.3	0	.3
4	0	1	0	.1	0	1	0	1.3
5	0	3	0	1.5	0	2.5	0	2.5
6	0	4	0	2	0	3.5	0	3.5
7	0	4.5	0	3	0	4.5	0	4.5
8	0	5	0	4	0	5	0	5
9	0	5.5	0	4.5	0	5.5	0	5.5
10	0	6	0	5	0	6	0	6

TABLE 80.—IODIN 1-500. EXPOSURE 3 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	.5	0	.1	0	.1	0	.5
4	0	1.5	?	1	0	1.5	0	2.5
5	0	2.5	?	2	0	2	0	3.5
6	0	3.5	?	3	0	3	0	4
7	0	4.5	?	4	0	4	0	5
8	0	5	.2	4.5	0	4.5	0	6
9	0	5.5	.7	5	0	5.5	0	6.5
10	0	6	1.2	5.5	0	6	0	7

TABLE 81.—IODIN 1-500. EXPOSURE 2½ MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	1	?	.5	0	1	0	1.2
4	?	2	.2	1.5	0	1.5	0	2.5
5	.2	3	1.2	2.5	0	2	0	3.5
6	1	4	2.5	3.5	0	2.5	0	4
7	3	5	4.5	5	0	3.5	0	4.5
8	5	5.5	5.5	5.5	0	4	1	5.5
9	5.2	6	5.7	5.7	0	4.5	1.5	6.5
10	5.5	7	6	6	0	5	2.5	7

GROUP 7.—ACTION OF SOLUTIONS ON ACTINOMYCOSIS BOVIS (SIX-DAY-OLD CULTURES).

TABLE 82.—IODIN 1-1,000. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	?	?	0	?	0	?
3	0	2	.7	2	0	2.5	?	1.5
4	0	2.5	1	2.5	0	3	?	2.5
5	?	3	1.5	3.5	?	4	?	3.5
6	?	4	3	4.5	?	4.5	?	4.5
7	?	4.5	3.5	5	?	5	.5	5
8	?	5	3.7	5.5	?	5.5	.6	5.5
9	?	5.5	4	6	?	6	1	6

TABLE 83.—IODIN 1-1,000. EXPOSURE 30 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	1.5	0	2	0	2	0	1
4	0	2	0	2.5	0	2.5	0	2
5	?	2.5	?	3	0	3.5	?	3
6	?	3	?	4	0	4.5	?	4
7	?	4	?	4.5	?	5	?	4.5
8	?	4.5	.2	5	?	5.5	?	5
9	?	5	.5	6	?	6	?	5.5

TABLE 84.—IODIN 1-1,000. EXPOSURE 60 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	1.5	0	2	0	2	0	1.5
4	0	2.5	0	3	0	2.5	0	2
5	0	3.5	0	3.5	?	3	?	2.5
6	0	4	?	4	?	4.5	?	3.5
7	0	4.5	?	5	?	5	?	4
8	0	5	?	5.3	?	5.5	.3	4.5
9	0	5.5	?	5.5	?	6	.5	5

TABLE 85.—IODIN 1-500. EXPOSURE 15 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	.2	0	.5	0	.5	0	1
4	0	.5	0	2	0	1	0	2
5	0	1	0	2.5	0	2	0	2.2
6	0	2	0	3.5	0	3.5	0	2.5
7	0	4	0	5	0	4	0	4
8	0	5	0	6	0	5	0	5
9	0	5.5	0	6	0	6	0	5

TABLE 86.—IODIN 1-500. EXPOSURE 10 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	2	?	1.5	0	1.5	?	1
4	0	3	.2	2.5	0	2.5	?	1.5
5	0	3.5	.6	3.5	0	4	?	2.5
6	0	4.5	1	4.5	0	5	?	4
7	0	5	1.3	5.5	0	5.5	?	5
8	0	5.5	1.7	6	0	5.7	.3	5.5
9	0	6	2	7	0	6	.5	5.7

TABLE 87.—IODIN 1-300. EXPOSURE 10 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	1	0	1.5	0	2	0	.6
4	0	1.5	0	2	0	2.5	0	1.5
5	0	2.5	0	3	0	3.5	0	2
6	0	3	0	4	0	4.5	0	3
7	0	4	0	4.5	0	4.7	0	4
8	0	4.5	0	5	0	5	0	5
9	0	5	0	6	0	5.5	0	5.5

TABLE 88.—IODIN 1-300. EXPOSURE 5 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	.5	0	1.5	0	1	0	1
4	0	1.5	0	2.5	0	2	0	2
5	0	2.5	0	3.5	0	2.5	?	3
6	?	3	0	4	0	3.5	?	3.5
7	?	3.5	0	5	0	4	?	4
8	?	5	0	5.5	0	4.5	?	4.5
9	.2	5.5	0	6	0	5	?	5

TABLE 89.—IODIN 1-200. EXPOSURE 5 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	2	0	1.5	0	2.5	0	1.5
4	0	3	0	2.5	0	3.5	0	2.5
5	0	3.5	0	3.5	0	4	0	3.5
6	0	4	0	4	0	4.5	0	4.5
7	0	5	0	4.5	0	5	0	5
8	0	5.5	0	5	0	6	0	5.5
9	0	6	0	5.5	0	6.5	0	6

TABLE 90.—IODIN 1-200. EXPOSURE 2 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	1.5	0	1	0	2	0	1
4	0	2.5	0	2	0	2.5	0	1.5
5	0	3.5	0	3	0	4	0	2.5
6	0	4.5	0	4	0	4.5	0	3.5
7	0	5.5	0	5	0	5	0	4
8	0	6	0	5.5	0	6	0	4.5
9	0	6.5	0	6	0	6.2	0	5

TABLE 91.—IODIN 1-200. EXPOSURE 1 MIN.

Day.	A	A′	B	B′	C	C′	D	D′
2	0	?	0	?	0	?	0	?
3	0	1	0	1.5	0	.5	0	1
4	0	2	0	3	0	1	0	1.5
5	0	3	0	3.5	0	2	0	2.5
6	0	4	0	4.5	0	3	0	3.5
7	0	4.5	0	5	0	4	0	4
8	0	5	0	5.5	0	5	0	4.5
9	0	5.5	0	6	0	6	0	5

1/1000 for *sixty* minutes gives a marked inhibitory effect. On the second, third and fourth days there is no growth. A is free from growth throughout. On the fifth and sixth days points appear on B, C and D. On the following days B shows no increase in growth, C gives a few more points, and D, on the eighth and ninth days gives a fractional growth, equaling 1/10 control growth at the end.

1/500 for *fifteen* minutes gives no growth.

1/500 for *ten* minutes shows an irregular effect. A and C are free from growth throughout. On the third day points of growth appear on B and D, which increase slowly to the ninth day, when B equals 2/7 of control growth and D 1/12 control growth.

1/300 for *ten* minutes gives no growth.

1/300 for *five* minutes shows a marked inhibitory effect. B and C show no growth throughout. On the sixth day points of growth appear on A. On the following days a very slight increase in growth is present, equaling, at the end, 1/16 of control growth. On the fifth day points appear on D, which increase but slightly on the remaining days.

1/200 for *five* minutes shows no growth.

1/200 for *two* minutes shows no growth.

1/200 for *one* minute shows no growth.

SUMMARY OF EVIDENCE ON ACTINOMYCOSIS.

The evidence shows that *Actinomyces bovis* is destroyed by either of several strengths solution of iodin acting for varying periods of time. Thus, death occurs after an exposure to a 1/500 solution for fifteen minutes; to a 1/300 solution for ten minutes; to a 1/200 solution for one minute. Considering the inhibitive effect of the solutions on the micro-organism, we find that this power begins to appear quite perceptibly on exposing to a 1/1000 solution for fifteen minutes. This effect is increased in proportion as the time of exposure is lengthened. On exposing to solutions of greater strength for a shorter period than is necessary to cause death, i. e., 1/500 solution for ten minutes, 1/300 solution for five minutes, the inhibitory effect becomes, to a medium degree, greater and greater, although time of exposure is markedly decreased. Therefore, in this series, we may consider that iodin has a medium range of inhibition before causing death.

GENERAL SUMMARY.

In summing up the antimicrobic power possessed by iodin in solution, it is well for clearness to adhere to the two divisions previously made. These were: (1) The death point of the micro-organisms as expressed by the strength of solution employed and the time of exposure to same; (2) the inhibitory effect of solutions as expressed by retardation and limitation of growth. Taking for consideration the first division, the evidence shows that absolute destruction of the several micro-organisms occurs when they are exposed to the solutions as given in Table 92.

Micro-organism.	Strength of solution.	Time of exposure.
Streptococcus pyogenes	1/1000	30 minutes
	1/500	2 minutes
Blastomycosis	1/500	4 minutes
Actinomycosis bovis	1/500	15 minutes
	1/300	10 minutes
	1/200	1 minute
Staphylococcus pyogenes aureus.....	1/200	5 minutes
Bacillus tuberculosis	1/200	60 minutes
	1/100	7 minutes
Bacillus anthracis plus spores	1/200	60 minutes
	1/100	10 minutes
Bacillus prodigiosus	1/100	10 minutes

A considerable range in efficiency of solutions is shown to exist between the *Streptococcus pyogenes* and the *Bacillus prodigiosus.* On the *Streptococcus pyogenes* the effect of the iodin is almost, if not altogether, a specific. The same, to a lesser degree, may be said of its action on *Blastomyces.* As per the arrangement of the table, the *Staphylococcus pyogenes aureus* is seen to occupy, in its relation to resisting power, a middle position. In regard to this same power of resistance, a wide space intervenes between the *Staphlycoccus aureus* and the bacilli group, of which the non-pathogenic prodigiosus is the most hearty. However, the employment of the strongest solution necessary (1 per cent. for ten minutes) is eminently practicable in direct application to wound surfaces without bad effects resulting. The fact that a micro-organism is or is not pathogenic has no weight in determining its power of resistance.

Taking for consideration the second division, it is readily seen that the degree of inhibition depends both singly and jointly on the strength of solution employed and the duration of exposure to the same. This inhibitory cycle is well shown by the bacilli group where there is a gradual and progressive increase in the inhibitory power over a wide range as the solutions become stronger and stronger and the time of exposure is increased in each strength. On this group iodin has a marked range of inhibition before producing death. The inhibitory sphere in *Staphylococcus pyogenes aureus* is irregular in character and much smaller because of the lesser strength of solution causing death. Likewise, for the same cause, *Actinomyces* presents a still more restricted sphere, although steadily progressive in character. On both *Streptococcus pyogenes* and *Blastomyces* the range of inhibition is so minute, because the death and inhibitory points are practically the same, that it may be disregarded.

CONCLUSIONS.

1. In a solution of iodin, varying from a 0.2 per cent. to a 1 per cent., we have a germicidal agent of very marked potency.

2. Its germicidal power is far superior to that of bichlorid of mercury, the. acknowledged leader of all other antiseptics. This fact was shown by experiments made with a 1/1000 solution of bichlorid of mercury on *Streptococcus pyogenes,* using the same method employed with iodin solution. It was found that an exposure of fifteen minutes, although showing considerable inhibitory power, especially on the first day, permitted a good growth of streptococci to appear. An exposure of thirty minutes gave no growth. The superiority of iodin is readily evidenced by recalling the fact that a comparatively weak solution of iodin, i. e., 0.2 per cent., gave death after two minutes' exposure.

3. It approaches nearly to the ideal antiseptic in that:

(a) It is easily prepared and is stable.

(b) It is non-toxic and non-irritating in strength effective, being only one-fourth as toxic as bichlorid of mercury.

(c) It does not coagulate albumin or form inert compounds with tissues.

(d) It is effective in a very brief time.

(e) The stain it produces soon disappears.

(f) Lastly, and most important, it possesses a remarkable penetrating power.

4. In conclusion, it is well to state that an 0.5 per cent. solution is amply strong enough for all practical usage.

390 North Clark Street.

THE UNITED STATES PHARMACOPEIA.

THE ADVANCE IN PHARMACY INDICATED IN THE EIGHTH DECENNIAL REVISION.*

C. S. N. HALLBERG, Ph. G., M.D.

CHICAGO.

The Pharmacopeia was made public June 27, when unbound copies of the book were sent to medical and pharmaceutical journals, medical publishers, authors, and such other persons to whom avoidance of the two weeks' delay in securing bound copies of the volume would be especially appreciated.

THE NOMENCLATURE.

The Pharmacopeia, as the exponent of the science of drugs and medicine, must employ a terminology in harmony with the related sciences, hence the importance of the nomenclature. With reference to the nomenclature the convention adopted the following among the general principles to be followed in revising the Pharmacopeia:

> It is recommended that changes in the titles of articles at present official be made only for the purpose of insuring greater accuracy or safety in dispensing. In the case of newly admitted articles it is recommended that such titles be chosen as are in harmony with general usage and convenient for prescrib-

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* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

ing; but in the case of chemicals of a definite composition a scientific name should be given, at least a synonym.

It is recommended that every common name and English title of articles used in the present United States Pharmacopeia that is synonymous for both the medicinal and commercial drug be either discarded or modified so as to leave no doubt as to what is wanted.

With reference to the chemical nomenclature, that of the former revision has been retained notwithstanding the fact that the spelling adopted by the American Association for the Advancement of Science and chemical societies has met with some degree of favor. The deletion of the final *e* in the halogens and alkaloids, such as "bromine," "iodine" and "morphine" and "quinine," respectively, it was thought, would prove confusing; besides, the alkaloids would lose the distinction they have always enjoyed in being written with the final *e*, from the glucosids without it, i. e., aloin, santonin, etc. So also was the substitution of *f* for ph in the case of sulphur and sulphates (sulfates), regarded probably as too much of an innovation, especially when the spelling of "Pharmacopœia" was considered. The spirit of conservatism was so evident that the convention refused even to eliminate the *o* in the spelling of "Pharmacopœia," although the British is the only other Pharmacopeia which retains this ancient spelling.

Another innovation was narrowly averted when the figures for the elements of the International Committee on Atomic Weights of 1904 were adopted, based on hydrogen at 1 instead of oxygen at 16, which would have made H 1.008. The fear of innovation did not deter the committee, however, from making some timely corrections in chemical terms, such as changing the official titles for three well-known acids: carbolic, arsenous and chromic to phenol, arseni-trioxidum and chromi-trioxidum respectively; resorcinol for resorcin, potassii hydroxidum for potassa, sodii hydroxidum for soda, the *id* termination for salts of alkaloids, i. e.: cocainæ hydrochloridum for cocainæ hydrochloras, the contracted term "fluidextractum" for extractum-fluidum, and the less doubtful substitution of chloralum hydratum for chloral as being liable to confusion with chlor. hydr., when carelessly abbreviated.

PURITY AND STRENGTH OF PHARMACOPEIAL ARTICLES.

The limitations on the purity and strength of pharmacopeial articles have received much consideration, especially during the past decade, because of the extreme requirements, in some instances characterized as hypercritical by manufacturers. Having in mind, no doubt, the greatest protection to the public, the convention gave the following instruction:

The committee is instructed to revise as carefully as possible the limits of purity and strength of the pharmacopeial chemicals and preparations for which limiting tests are given. While no concession should be made toward a diminution of medicinal value, allowance should be made for unavoidable, innocuous impurities or variations due to the particular source or mode of preparation, or to the keeping qualities of the several articles. In the case of natural products, the limits of admissible impurities should be placed high enough to exclude any that would not be accepted by other countries.

To the present revision, therefore, has been added a descriptive definition for each chemical known as the "purity rubric," which defines and limits the gross amount of impurities in each article by stating, for example, potassii iodidum: "It should contain not less than 99 per cent. of pure potassium iodide ($KI = 164.76$)."

To make this article 100 per cent. pure would not only add vastly to the cost but in this particular salt would result in a product which would be stable. In the elaborate tests which follow, the amounts of alkali, nitrates and nitrites, chlorids and bromids are carefully limited within the total one per cent. permissible, while they absolutely exclude all noxious salts, such as barium, cyanid and heavy metals, lead, tin, zinc, etc. By this method, the highest practically attainable degree of purity is secured with the certainty that all noxious impurities are absent.

ASSAY PROCESS.

The standardization of drugs and their preparations also for certain principles has long been a desideratum. The medical profession has especially favored this idea because it represented an apparently decided advance in therapeutics. It was also in line with the entire spirit of the Pharmacopeia, and the ideals of pharmacy, viz.: to secure uniformity in strength and dosage. Its application, however, was an entirely different and much more difficult proposition than fixing the uniformity of chemical substances from the fact that the principles of but comparatively few drugs are as well defined as ordinary chemical substances, and their identity and determination, therefore, require much more careful and elaborate study. For this reason the committee was instructed:

The committee is instructed to append assay processes to as many of the potent drugs and preparations made therefrom as may be found possible, provided that the processes of assay are reasonably simple (both as to methods and apparatus required) and lead to fairly uniform results in different hands. As regards the products of such assays, tests of identity and purity should be added wherever feasible. Physiologic tests for determining strength should not be introduced by the committee.

After exhaustive study by a committee of specialists, some of whom have been engaged with the various large manufacturing pharmaceutical houses, assay processes were introduced for eighteen drugs and their preparations, and the following standards have been adopted for them:

Drugs and their preparations for which standards of active principles are required by the U. S. P. VIII.

Preparation.	Principle.	Minimum.
Aconitum	Aconitin	0.5 per cent.
Fluidextractum	Aconitin	0.4 in 100 c.c.
Tinctura	Aconitin	0.045 in 100 c.c.
Belladonnæ folia	Mydriatic alkaloids	0.35 per cent.
Emplastrum	Mydriatic alkaloids	0.38-0.42 per cent.
Extractum	Mydriatic alkaloids	1.4 per cent.
Tinctura	Mydriatic alkaloids	0.035 per cent.
Belladonnæ radix	Mydriatic alkaloids	0.5 per cent.
Fluidextractum	Mydriatic alkaloids	0.5 in 100 c.c.
Cinchona	Alkaloids	4 per cent. ether soluble.
Fluidextractum	Alkaloids anhydrous	4 in 100 c.c.
Coca	Alkaloids ether soluble	0.5 per cent.
Fluidextractum	Alkaloids ether soluble	0.5 per cent.
Colchici cormus	Colchicin	0.5 per cent.
Extractum	Colchicin	1.4 per cent.
Colchici semen	Colchicin	0.55 per cent
Fluidextractum	Colchicin	0.5 in 100 c.c.
Tinctura	Colchicin	0.05 in 100 c.c.
Conium	Conilin	0.5 per cent.
Fluidextractum	Coniin	0.45 in 100 c.c.
Guarana	Alkaloids	3.5 per cent.
Fluidextractum	Alkaloids	3.5 in 100 c.c.
Hydrastis	Hydrastin	2.5 per cent.
Fluidextractum	Hydrastin	2 in 100 c.c.
Tinctura	Hydrastin	0.4 in 100 c.c.
Hyoscyamus	Mydriatic alkaloids	0.08 per cent.
Extractum	Mydriatic alkaloids	0.3 per cent.
Fluidextractum	Mydriatic alkaloids	0.075 in 100 c.c.
Tinctura	Mydriatic alkaloids	0.007 in 100 c.c.
Ipecacuanha	Alkaloids	2 per cent.
Fluidextractum	Alkaloids	1.75 in 100 c.c.
Jalapa	Alcol soluble resin	8 per cent.
	Ether soluble resin	1.5 per cent.
Nux vomica	Strychnin	1.25 per cent.
Extractum	Strychnin	5 per cent.
Fluidextractum	Strychnin	1 in 100 c.c.
Tinctura	Strychnin	0.1 in 100 c.c.

Opium pulvis and deodorata	Morphin cryst	12 to 12.5 per cent.
Extractum	Morphin cryst	20 per cent.
Tinctura and deodorized tinctura	Morphin cryst	1.2 to 1.25 in 100 c.c.
Physostigma	Ether soluble alkaloids	0.15 per cent.
Extractum	Ether soluble alkaloids	2 per cent.
Tinctura	Ether soluble alkaloids	0.014 in 100 c.c.
Pilocarpus	Alkaloids	0.5 per cent
Fluidextractum	Alkaloids	0.4 in 100 c.c.
Stramonium	Mydriatic alkaloids	0.35 per cent.
Extractum	Mydriatic alkaloids	1.4 per cent.
Fluidextractum	Mydriatic alkaloids	0.35 in 100 c.c.
Tinctura	Mydriatic alkaloids	0.03 in 100 c.c.

The introduction of several principles of volatile oils, some artificial or synthetized, led to the fixing of standards for a number of the natural volatile oils, which are required to be of the following strengths:

Oil.	Principle.	Strength.
Oleum amygdalæ amaræ	Benzaldehyd	85 per cent. w't.
	Hydrocyanic acid	2.4 per cent. w't.
Oleum cajupti	Cineol	55 per cent. vol.
Oleum caryophilli	Eugenol	80 per cent. vol.
Oleum cinnamomi	Cinnamic aldehyd	75 per cent. vol.
Oleum eucalypti	Cineol	50 per cent. vol.
Oleum limonis	Citral	4 per cent. w't.
Oleum menthæ piperitæ	Menthyl acetate	8 per cent. w't.
	Total menthol	50 per cent. w't.
Oleum pimentæ	Eugenol	65 per cent. vol.
Oleum rosmarini	Bornyl acetate	5 per cent. w't.
	Total borneol	15 per cent. w't.
Oleum santali	Santalol	90 per cent. w't.
Oleum thymi	Phenols	20 per cent. vol.

In addition to this class of principles, already official menthol, thymol and methyl salicylate, the following have also been introduced:

Benzaldehydum: An aldehyd obtained from the volatile oil of bitter almond or produced artificially, containing 85 per cent. pure benzaldehyd.

Cinnaldehydum: An aldehyd obtained from oil of cinnamon or prepared synthetically, containing not less than 95 per cent. pure cinnamic aldehyd.

Eugenol: An unsaturated aromatic phenol obtained from oil of cloves and other sources.

Safrolum: The methylene ether of pyrocatechol, found in oil of sassafras, camphor oil and other volatile oils.

The difficulty presented in work of this branch of organic chemistry may be realized from the fact that of these eighteen drugs not one glucosidal drug is included, they being, with one exception, (jalap) alkaloidal. While to devise assay processes which would be practicable and which, in the hands of the average skilled pharmacist, would show fairly uniform results, was exceedingly difficult with some of these, notably the mydriatic group, with glucosidal drugs these difficulties were unsurmountable. For this reason, there are no assay processes nor standards for the principles of digitalis, ergot, strophanthus and several more of this class, much as it was desired to include them. By far the largest number of drugs are glucosidal in character and yet, with a few exceptions, they are but little known. There are many drugs indigenous to North America, not to mention Central and South America, whose principles, if studied systematically, would furnish valuable therapeutic agents, perhaps equally as valuable as the coal-tar and other synthetic chemicals. This field may well be called a *terra incognita* which lies fallow for a medical Vespuccio or Vasco de Gama, but more likely which will be chartered and explored by the *omnium gatherum* Teutons when they have exhausted the possimilities of the Benzene ring and its congeners.

Owing to the lack of chemical assay methods for standardizing some of these drugs, certain manufacturers have adopted so-called physiologic methods for determining the strength and potency. Since no method based on pharmaco-dynamic effects could be applied by the average retail pharmacist for whom the U. S. Pharmacopeia is, first of all, designed, and since any requirement for an article which could not be verified by him would, it was contended, violate this fundamental principle of the Pharmacopeia, it was recommended "that physiologic tests should not be introduced."

Owing to the importance of the subject, however, and with the aid of a special committee composed of Major Walter Reed, surgeon U. S. A., Prof. Theobald Smith, Thomas C. Craig, surgeon U. S. A., H. A. Hare, E. M. Houghton, J. J. Kinyoun, William H. Park, Herbert D. Pease, and M. J. Rosenau, surgeon U. S. Public Health and Marine-Hospital Service, the following standard was adopted:

Serum Antidiphthericum—Antidiphtheric serum. Diphtheria antitoxin.

A fluid separated from the coagulated blood of a horse *Equus caballus* (Linnè), immunized through the inoculation of diphtheria toxin. It should be kept in sealed glass containers. in a dark place, at temperatures between 4.5 and 15 C. (40 and 59 F.).

A yellowish or yellowish brown, transparent or slightly turbid liquid, odorless or having a slight odor, due to the presence of the antiseptic used as a preservative.

Specific gravity: 1.025 to 1.040 at 25 C. (77 F.).

Antidiphtheric serum gradually loses its power, the loss in one year varying between 10 and 30 per cent. Each container should be furnished with a label or statement, giving the strength of the antidiphtheric serum, expressed in antitoxic units, the name and percentage by volume of the antiseptic used for the preservation of the liquid (if such be used), the date when the antidiphtheric serum was last tested, and the date beyond which it will not have the strength, indicated on the label or statement.

The standard of strength expressed in units of antitoxic power should be that approved or established by the United States Public Health and Marine-Hospital Service.

Average dose, 3,000 units.

Immunizing dose for well persons, 500 units.

The admission of the synthetics, owing to the complex status of many of them, was a difficult problem to solve. The attitude of the convention was not sharply outlined in the following instruction to the committee:

The Committee of Revision is authorized to admit into the Pharmacopeia any product of nature of known origin, also any synthethized product of definite composition which is in common use by the medical profession, the identity, purity or strength of which can be determined. No compound or mixture shall be introduced if the composition or mode of manufacture thereof be kept secret, or if it be controlled by unlimited proprietary or patent rights.

Realizing the desire on the part of the medical profession to have, at least, made official as many of this class of articles as have proved of therapeutic value and have assumed a permanent place in the materia medica, the committee compromised by admitting such products for which the patent on the process or product, or both, expired or will expire during the present decade (1910), provided that, by such expiration, the trade name would also become free.

With this as a guide, the legal status of the most extensively employed synthetics was investigated, and those which would be free during the stated period were admitted. Some omissions will be noted, for example, ichthyol, which is not covered by any patent, the name alone being registered, and the article, therefore, is in the category of so-called patent medicines, except that its composition is well known.

Except in the case of antipyrin, which became free several years ago, the trade names of these articles have not been admitted, but instead more or less euphonious contractions of the chemical names have been adopted for their title, together with the chemical structural names, as follows:

Acetphenetidium—Acetphenetidin: $C_{10}H_{13}NO_2 = 177.79$.

A phenol derivative [Acetparaphenetidin $C_6H_4(OC_7H_5).NH.CH_3.CO1:4$] the product of the acetylization of para-amido phenol.

Average dose, 0.500 gm., 500 milligrams (7½ grains).

Æthylis Carbamas—Ethyl Carbamate: $C_3H_7NO_2 = 88.42$.

An ester of carbamic acid [$CO(OC_2H_6)NH_2$] obtained by the reaction of ethyl alcohol on urea (carbamide) or one of its salts. It should be kept in well-stoppered bottles.

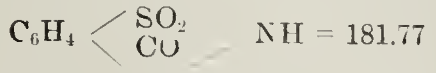
Average dose, 1 gm. (15 grains).

Antipyrina—Antipyrin: $C_{11}H_{12}N_2O = 186.75$.

Phenyldimethylpyrazolon [$C_3HN_2O(CH_3)_2.C_6H_5$], obtained by the condensation of phenylhydrazin with aceto-acetic ether, and methylation of the product.

Average dose, 0.25 gm., 250 milligrams (4 grains).

Benzosulphinidum—Benzosulphinid Saccharin.



$$C_6H_4 < \begin{matrix} SO_2 \\ CO \end{matrix} \quad NH = 181.77$$

The anhydrid of ortho-sulphamide-benzoic acid (benzoyl sulphonicimide).

Average dose, 0.200 gm., 200 milligrams (3 grains).

Chloralformamidum—Chloralformamid: $C_3H_4Cl_3NO_2 = 190.96$.

A crystalline solid [$CCl_3.CH(OH)NH.COH$], made by the direct union of formamide with anhydrous chloral. It should be kept in amber-colored, well-stoppered vials.

Average dose, 1 gm. (15 grains).

Guaiacolis Carbonas—Guaiacol Carbonate: $(C_7H_7O)_2CO_3 = 272.05$.

A guaiacol derivative [$(C_6H_4(OCH_3)O)_2.CO$], obtained by the action of carbonyl chlorid on sodium-guaiacolate.

Average dose, 1 gm. (15 grains).

Hexamethylenamina—Hexamethylenamin: $C_6H_{12}N_4 = 139.18$.

A condensation product [hexamethylene-tetramin, $(CH_2)_6N_4$], obtained by the action of ammonia on formaldehyd. It should be kept in well-stoppered bottles.

Average dose, 0.250 gm., 250 milligrams (4 grains).

Homatropinæ Hydrobromidum—Homatropin hydrobromid: $C_{16}H_{21}NO_3.HBr = 353.49$.

The hydrobromid [$HBr.C_{16}H_{21}NO_3$] of an aklaloid obtained by the condensation of tropin and mandelic acid. It should be kept in well-stopered vials, protected from light.

Average dose, 0.0005 gm., 0.5 milligram (1/128 grain).

Iodolum—Iodol: $C_4I_4.NH = 566.17$.

Tetraiodopyrrol, a derivative of the base pyrrol, obtained by the direct action of iodin on the base in the presence of alcohol. Iodol should be preserved in amber-colored bottle, protected from light.

Average dose, 0.250 gm., 250 milligrams (4 grains).

Methylthioninæ Hydrochloridum—Methylthionin Hydrochlorid. Methylen Blue: $C_{16}H_{18}N_3SCl = 317.36$.

Tetramethylthionin hydrochlorid, obtained by the action of hydrogen sulphid on an oxidation product of paramidodimethylanilin.

Average dose, 0.250 gm., 250 milligrams (4 grains).

Sulphonethylmethanum—Sulphonethylmethane: $C_8H_{18}S_2O_4 = 240.46$.

Di-ethyl-sulphone-methyl-ethyl-methane [$(CH_3)(C_2H_5)C(SO_2C_2H_5)_2$], a product of the oxidation of the mercaptol obtained by the condensation of methylethylketone with ethyl mercaptan. It should be preserved in well-stoppered vials.

Average dose, 1 gm. (15 grains).

Sulphonmethanum — Sulphonmethane: $C_7H_{16}S_2O_4 = 226.55$.

Diethylsulphonedimethylmethane [$(CH_3)_2C(SO_2C_2H_5)_2$], the product of the oxidation of the mercaptol obtained by the condensation of acetone with ethylmercaptan. It should be preserved in well-stoppered vials.

Average dose, 1 gm. (15 grains).

Thymolis Iodidum—Thymol Iodid: $C_{20}H_{24}O_2I_2 = 545.76$.

Dithymol-diiodid [$(C_6H_2.CH_3.C_3H_7.OI)_2$], obtained by the condensation of two molecules of thymol and the introduction of two atoms of iodin into the phenolic groups of thymol; it contains 45 per cent. of iodin. Thymol iodid should be kept in amber-colored vials, protected from the light.

Vanillinum—Vanillin: $C_8H_8O_3 = 150.92$.

Methylprotocatechuic aldehyd [$C_6H_3OH.OCH_3COH\ 4:3:1$], occurring naturally in vanilla or made artificially from several orthodihydroxybenzene derivatives.

Average dose, 0.030 gm., 30 milligrams (½ grain).

Special Articles

IMMUNITY.

CHAPTER XXIV.

BACILLUS ENTERITIDIS IN MEAT POISONING.

More or less extensive epidemics of poisoning by meats have long been known. Whereas, it was formerly thought that the intoxication was due to ptomains which were formed as an incident to putrid decomposition of meat, it is now well established that most epidemics of this character are caused by meats which are infected with bacteria which are pathogenic even when entirely freed from decomposing proteids.

The "Enteritidis Group."

Botulism has already been described as a special form of meat poisoning in which nervous symptoms predominate, and it has also been emphasized that paratyphoid fever may have its source in infected meat. Before these conditions were recognized, however, Gärtner in 1888 had the opportunity of studying an epidemic caused by the meat of a cow which had been slaughtered in extremity. The symptoms differed from those of botulism or paratyphoid, as described below. He obtained from the muscle and spleen of the cow, and from the spleen of a man who had been fatally poisoned by meat, an organism which has since been known as *Bacillus enteritidis* (Gärtner). The same bacillus, or organisms which resemble it closely, have been obtained repeatedly during similar epidemics, both from the suspected meat and from the organs in fatal cases (intestines, blood, spleen, etc.). Drigalski, from a comparative study of several strains which had been obtained from different sources, concluded that all are members of a closely related group of organisms, the group of *Bacillus enteritidis*. His conclusions were based on cultural properties and agglutination tests.

The typical organism is a short rod, often ovoid in shape; it possesses four to twelve long flagellæ and has moderate motility. It is not stained by Gram's method. It ferments dextrose and certain other sugars, lactose, galactose, maltose, cane sugars, etc., with gas formation. Variations among individual strains need not be discussed here.

Pathogenicity.

According to v. Ermengem, and also Drigalski, the pathogenicity of the organism depends on its elaboration of a soluble but heat resistant toxin. Bouillon cultures twelve days old, in which the bacteria have been killed by heat, also similar cultures from which the bacteria have been removed by filtration, are toxic for mice and guinea-pigs (Drigalski). It is noteworthy, however, that relatively large quantities of the bouillon were necessary to kill guinea-pigs (4.0 c.c.), which is in contrast to the toxins of diphtheria and tetanus. The rapidity with which symptoms develop following the ingestion of infected meat is a further indication of the existence of this soluble toxin.

Symptoms.

Symptoms occasionally develop so quickly as to suggest some strong metallic poisoning. Within a few hours vomiting, violent diarrhea and colicky pains set in, followed by more or less collapse, weakness, headache and not uncommonly by erythematous, urticarial or herpetic eruptions. Fever is absent or inconspicuous. The mortality is not high, from 2 to 5 per cent., although convalescence is said to be slow. Nephritis and catarrhal pneumonia have been noted as sequelæ. Autopsy shows the anatomic changes of an acute gastroenteritis, sometimes of hemorrhagic character, with swollen Peyer's patches; the large intestine is not greatly involved. The spleen may be swollen and the kidneys degenerated. The anatomic findings are not specific.

Source of Infection.

It has been shown conclusively in numerous instances that the meat infection takes place *intra vitam*, that is, that the cattle or horses (Drigalski) were sick with an intestinal or general infection with *Bacillus enteritidis* before they were slaughtered. "In a very large number of cases it can be demonstrated that the animals from which the meat was taken had been slaughtered in extremity and had died rapidly, and indeed, that they had (in certain instances), died before they could be slaughtered. Most often they suffer from septic inflammatory processes or from traumatic, puerperal or other sorts of septicemia, or from other ill defined pathologic conditions which are accompanied by symptoms of enteritis or intestinal or pulmonary inflammations." (v. Ermengem.) Subsequent infection of the meat by *Bacillus enteritidis*, i. e., after slaughtering, has not been noted.

Growth in the Meat.

The organism occurs in the blood, muscles, spleen, lungs, and probably in the other organs of the infected animals and of man. Poisoning most commonly arises when the meat has been kept for several days, which usually is the case by the time it is made into some form of sausage. In the meantime the bacilli have proliferated and additional toxin has been produced. In at least one instance a certain number of patients who ate the meat while it was fresh suffered moderate or no intoxication, whereas those who ate it several days later became violently ill. In an epidemic caused by horse meat Drigalski found that "only those persons suffered from intoxication who ate the meat after it had lain for eight days or more."

Toxin in Meat.

The micro-organism is very resistant to heat and the temperature which is attained in ordinary cooking may not be sufficient to kill all the bacteria which are the farthest from the surface. Even in the event that the meat has been thoroughly sterilized, the heat resistant toxin may be present in sufficient quantity to cause the intoxication. Not much is known concerning the distribution of *Bacillus enteritidis*. v. Ermengem suspects that it may be a cause of poisoning by oysters and fish, but this remains undetermined.

Agglutinins.

The blood acquires specific agglutinins during the course of infection. Even eight days after the beginning of symptoms agglutination may be obtained in dilutions varying from 1/200 to 1/4000. The agglutinins disappear very rapidly. Working with artificially prepared immune serum, Drigalski determined the existence of coagglutinins for typhoid and paratyphoid bacilli.

We should bear in mind the likelihood that meats poisoned with *Bacillus enteritidis*, as well as by paratyphoid bacilli, may be encountered in America as well as in foreign countries.

BACILLUS COLI COMMUNIS.

Bacillus coli communis, *Bacterium coli commune*, or the colon bacillus, is the type of a large group of organisms the members of which show individual differences but possess certain dominant features in common. The typical colon bacillus ferments various sugars, with the production of gas, is a strong acid producer and curdles milk. It is flagellated, has moderate motility and does not stain by Gram's method. One type or another is the normal inhabitant of the intestinal tract of many animals, and although the organisms are widely disseminated in nature their occurrence is related directly or indirectly to the distribution of feces.

Resistance.

Its optimum temperature for growth is 37 C., and above 46 C. it does not proliferate. It is killed at a temperature of from 60 to 61 C. in from five to fifteen minutes; it is not killed by such low temperatures as from 20 to 24 C. It resists absolute desiccation for periods varying from a few days to several months (different observers). Direct sunlight kills 99 per cent. of the germs in two hours (Billings and Peckham), and they are very susceptible to ordinary antiseptics. The normal serums of many animals are bactericidal for the colon bacillus.

Escherich, a noted authority on this organism, lays down the principle that that strain which may be cultivated from the feces of the nursing child should be considered as the typical *Bacterium coli commune*, maintaining that a constant type of organism is found under these conditions. It is said to occur here in relatively pure culture.

Distribution in the Intestines.

Within a very short time after birth the organism is found in the intestines of infants, and its method of entrance has been the subject of much discussion. In view of its wide distribution it is not difficult to conceive of many circumstances which favor its entrance. Having once reached the intestines, it finds there its optimum conditions for growth. The small intestines in man are rather free from colon bacilli and other organisms as well. This, perhaps, is due to some extent to the alkalinity of the medium and to the rather rapid flow of the intestinal contents. The colon bacillus reaches its maximum development in the large intestine, where, in fact, the whole bacterial flora of the intestines is most concentrated.

Normal Functions.

In view of the fact that the colon bacillus is a normal inhabitant of the intestines, the conception has occurred to many that it may be of distinct value to the economy, either because of the action it has on certain foods (splitting of carbohydrates), or because in some obscure way it influences favorably the assimilation of foods, or in that it antagonizes other bacteria of distinct pathogenic powers which also exist normally in the intestines or reach them through accident. This is not the place to consider these questions in detail, and they are on none too definite a basis. It may be stated, however, that the colon bacillus and another closely related organism, *Bacillus lactis aerogenes*, distinctly antagonize the action of certain proteolytic bacteria which appear to be associated with the putrid decomposition of milk and other proteid-containing foods. Bacteria of the later type exist in the intestines. Unsterilized milk has a natural resistance to putrid decomposition and sterilized milk, which contains the colon bacillus or *Bacillus lactis aerogenes*, has a similar resistance. These two bacteria flourish in the presence of carbohydrates, which they decompose with the liberal formation of acids, and through these acids they "limit intestinal putrefaction and influence (favorably) pathologic processes which are caused or maintained by the existing 'alkaline fermentation'" (Escherich and Pfaundler). That the organisms in question antagonize the action of putrefactive bacteria has been shown in test-tube experiments (Hirschler).

Pathogenicity.

Since the time that Emmerich upheld the colon bacillus (or a colon-like microbe) as the cause of Asiatic cholera (1885), opinion as to the pathogenic powers of the organism have undergone many fluctuations. Following Koch's demonstration of the vibrio of cholera as the etiologic factor in cholera, the colon bacillus was, so to say, repressed as a pathologic agent. Later, and especially in France, great significance was again attached to it. The condition still shows a great deal of chaos, although on account of more refined technic and the elimination of other organisms, as the dysentery and paratyphoid bacilli and *Bacillus enteritidis*, from the colon group proper, we are, perhaps, on the way to a more satisfactory understanding of the pathogenicity of this organism. Although certain authors hold at the present time that the colon bacilli which normally inhabit the intestines are devoid of virulence, such a radical position is open to question. Avirulent strains have often been encountered, however.

Virulence for Animals.

As harmless as the colon bacillus appears to be when confined in the intact intestines, its virulence for animals, although low, has been demonstrated in many instances. A bouillon culture of the average bacillus which has grown from one to two days, and when freshly cultivated from the stools, causes the death of a 300 to 400 gram guinea-pig in two or three days, when given intraperitoneally in a dose of from 2 to 3 c.c. Subcutaneous inoculations commonly cause abscesses and may lead to death. Pathologic processes have not been set up by feeding cultures to animals. Inflammations have been caused in the bladder and in the bile passages by the injection of cultures. It is stated (Escherich) that whether the cultures are introduced into the skin, peritoneum or vessels, the symptoms of severe gastroenteritis are produced, not unlike Asiatic cholera. This fact may have influenced Emmerich in considering the orgainsm as the cause of cholera. The general symptoms are those of an acute febrile intoxication.

The organism is most pathogenic when freshly cultivated, and soon loses its virulence after repeated transplantations. As in the case of some other organisms, virulence may be reestablished by "passage" through suitable animals.

Virulence for Man.

The cultivation of the colon bacillus from the blood and organs of man at autopsy has not the significance which was once attached to it. It has been recognized that the colon bacillus in particular, and less commonly other intestinal organisms, may enter the circulation a short time before death, at a time when resistance is very low, and may obtain the general distribution which is so often encountered at autopsy; this is the so-called "agonal invasion," which may occur without much regard to the primary cause of death. The conditions which favor agonal invasion remain to a large extent obscure. Distinct defects of the intestinal mucosa probably are not essential, although this view has its representatives. In states of low vitality in which resistance to infection is decreased (disappearance of complement!), the organisms find conditions favorable to proliferation when they have once reached the circulation. In spite of the low virulence of the colon bacillus it commonly has a certain amount of toxicity and it may often be of significance even as an agonal infection.

Postmortem invasion of adjacent structures, as the gall bladder and liver through the biliary passages, and of the peritoneum through the intestinal wall, also occurs.

True Infections.

It has been shown that the colon bacillus occasionally causes the following conditions: Suppurative cholecystitis which may extend to the liver, peritonitis, septicemia, meningitis, cystitis, pyelitis and ascending suppurative nephritis, and abscesses in various organs, including suppurative processes in the middle ear. In one or more instances it has been thought that it caused vegetative endocarditis. Probably colon infections of the gall bladder do not occur in the absence of biliary stasis. Ordinarily cases of peritonitis in which the colon bacillus is encountered also show the presence of other pathogenic organisms, as streptococci or staphylococci; this is always the case in perforation peritonitis. Doubtless wrong conclusions have been drawn in many instances from the fact that the colon bacillus readily overgrows many other bacteria in ordinary culture media.

Cystitis.

Escherich attributes great importance to this organism as the cause of cystitis, especially in children, and states that it is probably the most common cause in all cases of cystitis. In 58 of 60 cases of cystitis in children the colon bacillus was found either alone or in mixed cultures. He also considers it the most common cause of pyelitis and ascending suppurative nephritis. An increased agglutinating power of the patient's serum for the organism cultivated from the urine is noted in these cases.

Diarrheas.

Great interest attaches to the colon bacillus in relation to enterocolitis and dysenteric diseases. Escherich speaks of an *enteritis follicularis*, or *colitis contagiosa*, or colicolitis, epidemics of which have been noted at different times. A number of these epidemics occurred before the identification of the dysentery bacillus, and certain of them may have been true dysenteric infections. Nevertheless, dysentery bacilli are not found in all cases of enterocolitis, and the probability that genuine cases of colon enteritis occur can not as yet be neglected entirely.

A specific colon toxin has not been obtained.

Immunization with the colon bacillus causes the formation of bactericidal amboceptors and agglutinins.

Agglutination.

Not all strains of the colon bacillus are identical in their agglutinogenic receptors. A serum which agglutinates one colon strain does not necessarily agglutinate all strains. The reaction, according to Paltauf and others, is largely an individual one. The serum of a patient who is suffering from a colon infection will agglutinate the particular strain causing the disease, but may not affect other strains. Hence, for diagnostic purposes, the test must be performed with the culture which has been obtained from the patient. Pfaundler says in reference to colicolitis that if other colon infections can be excluded, and if the serum of the patient gives the agglutination reaction in a dilution of 1 to 50 with the bacillus which has been cultivated from the stools, colon infection is indicated (Paltauf).

FOURTH OF JULY INJURIES AND TETANUS.

For the third consecutive year The Journal publishes statistics regarding injuries received during the Fourth of July celebration, with special reference to tetanus resulting from these injuries. The total number of cases this year is 104, surprisingly near to the number of cases in 1904, which was 105. In 1903 there were 415 cases. It is interesting likewise to compare the totals of accidents resulting from blank cartridges in the same years, which are in a like proportion. In 1903 there were 1,672 injuries from blank cartridges; in 1904, 1,005, and this year, 809. Regarding totals of accidents and their causes, we shall have further comment later in this paper.

The figures this year are from the same source as heretofore and treated in the same manner, so that any comparisons between the figures of this and either of the preceding years may be on a presumably like basis. The list of tetanus cases is as follows:

TABLE 1.

	NAME.	AGE.	CAUSE OF WOUND.	SITE OF WOUND.	DURATION IN DAYS.	RESULT
	ALABAMA.					
1.	Lattimer	10	bl. ctg	hand	17	D
	CALIFORNIA.					
1.	Eagle	14	bl ctg	hand	6	D
2.	Erway	21	bl. ctg	hand	10	D
3.	Spurgeon	11	bl. ctg	chest	7	D
4.	Iridlocotta	6	fireworks		9	D
	COLORADO.					
1.	Smith	16	cannon	leg		
	CONNECTICUT.					
1.	Monitz	13	gunshot	finger	11	D
2.	Beaulien	19	cannon			
3.	Rabinowitz		bl. ctg	hand		
	DELAWARE.					
1.	Eggner	14	bl. ctg	hand	12	D
	ILLINOIS.					
1.	Homny	9	bl. ctg		8	D
2.	Zeck	13	bl. ctg	finger	7	D
3	Boyer	12	bl ctg	groin	20	D
4.	Mason	16	fireworks		6	D
5.	Concartino	19	gunshot		7	D
6.	Lyon	22	bl. ctg	hand	9	D
7.	Schreta	28	gunshot		12	D
8	Murray	14	gunshot	hand	9	D
9.	Sumner	boy	bl. ctg	hand		D
10.	Leviston	11	gunshot		8	D
11.	Justice	9	bl. ctg	hand	13	D
12.	Olson	11	bl. ctg	leg	8	D
13.	Kirschner		fireworks	leg	20	D
14.	Stevens	17	bl. ctg		24	D
15.	Mawer		bl. ctg			D
16.	Colby	man	*giant cr'k	hand amp.	7	D
17.	Drennan	54	giant cr'k	eye, hand	8	D
18.	Campbell	12	bl ctg	hand		
19.	Zeck	13	fireworks		16	D
20.	Downey	adult	giant cr'k	hand	16	D

* Reported by one paper as blood poisoning.

	NAME.	AGE.	CAUSE OF WOUND.	SITE OF WOUND.	DURATION IN DAYS.	RESULT
	INDIANA.					
1	Connelly, Lester	8	bl. ctg		14	D
2	Crieger	14	bl. ctg	hand	9	D
3.	Sauer	14	bl. ctg	hand	16	D
	IOWA.					
1.	Nisson	20	bl ctg	hand	15	D
2.	Iverson	10	bl. ctg		9	D
3.	Wentland	adult	giant cr'k		22	D
	MAINE.					
1.	Hatch	16	bl. ctg	hand	11	D

	NAME.	AGE.	CAUSE OF WOUND.	SITE OF WOUND.	DURATION IN DAYS.	RESULT.
	MARYLAND.					
1.	Bowen	12	bl. ctg		10	D
	MASSACHUSSETTS.					
1	Lebida		cannon.	finger		
2.	Roy	boy.	bl ctg	hand	8	D
3.	Challman	10	powder.	hand	10	D
4.	Mitchell	12	bl. ctg		7	D
5	Bailey	12	fireworks	hand	12	D
6	Norris	16	bl. ctg	hand	14	D
7.	Morrell		bl. ctg	hand	8	D
	MICHIGAN.					
1.	Bartels	12	bl. ctg	finger.	9	D
2.	Tobias	10	bl. ctg	hand		
3	Sueath	11	bl ctg	hand		
4.	Wingett	11	bl. ctg		12	D
5.	Van Antwerp	14	bl. ctg	finger	9	D
6.	Robinson	11	giant cr'k	leg	18	R
7.	Bashore	11	bl. ctg		10	D
8.	Szewitski	12	powder.	hand	5	D
9.	Mangns	10	bl. ctg	leg	14	D
	MINNESOTA.					
1.	Ensland		giant cr'k		12	D
2.	Kruk	27	giant cr'k	hand	11	D
	MISSOURI.					
1.	Gibeant	8.	bl ctg	hand	11	D
2.	Dilley	12	fireworks.	leg	11	D
3.	Truesdale	15	bl ctg	hand	7	D
	MONTANA.					
1.	Smith	adult	giant cr'k	hand	25	D
	NEBRASKA.					
1.	McCarville	12	bl. ctg	hand	13	D
2.	Robla	11	bl. ctg	hand		D
3.	Robinson	man	bl ctg	finger.	10	D
	NEW JERSEY.					
1.	Taylor	11	bl. ctg	hand	11	D
2.	Johnson		bl ctg	hand		
3.	Jorzak	18	bl ctg	hand		
	NEW YORK.					
1.	Casey	12	giant cr'k	leg	4	D
2.	Kohler	8	bl ctg	hand	8	D
3.	Crowley	15	bl ctg	hand	10	D
4.	Biegel		giant cr'k		12	D
5.	Mnstico	9	bl. ctg	finger.	8	D
6.	Flood	9	bl. ctg	hand		
	OHIO.					
1.	Meyer	16	bl. ctg	hand	6	D
2.	Geiger	13	bl ctg	hand		
3.	Palmer	10	giant cr'k	hand	7	D
4.	Tellkamp	12	bl ctg	leg	10	D
5.	Robinson	14	torp	hand		
	OKLAHOMA.					
1.	Cronkett	14	cap	finger.	10	D
	PENNSYLVANIA.					
1.	Overpeck	19	bl. ctg	hand	8	D
2.	Yothers	13	cannon			
3.	Sherman		bl. ctg		12	D
4.	Payne		powder		14	D
5.	Lengel	78	fireworks	ear		D.
6.	Ternent	15	giant cr'k	hand	14	D
7.	Bochus	14	bl. ctg	leg	8	D
8.	Nail	17	bl. ctg	hand	19	D
9.	Hartman	boy	bl. ctg	hand	24	D
10.	Parlovix		bl. ctg			D
11.	Caloney	14	bl. ctg	hand	22	D
12.	Dangherty	3	giant cr'k	arm, leg	8	D
	UTAH.					
1.	Jacob	10	giant cr'k		20	D
	WISCONSIN.					
1.	Anderson	13	bl. ctg	hand	11	D
2.	Schmick	10	bl. ctg	hand		
3.	Jolly	14	bl. ctg	finger	16	D
4.	Mooney		bl. ctg	hand	6	D
5.	Bussian	10	bl. ctg	leg	8	D
6.	Nolan	11	bl. ctg	hand	4	D
7.	Holk	15	giant cr'k	face.	12	D
8.	Ennis	8	giant cr'k		12	D
9.	Vanderloo	22	bl. ctg	hand	11	D
10.	Shipped		bl. ctg		16	D
11.	Aohert	boy	fireworks.			
12.	Colby		giant cr'k			
13.	Sniegorski	8	bl. ctg		12	D

Tetanus cases occurred in 23 different states, or in 2 more than last year, but in 7 less than in 1903. The eight states having the highest number of cases are Illinois 20, Wisconsin 13, Pennsylvania 12, Michigan 9, Massachusetts 7, New York 6, Ohio 5, and California 4. Six states had 3 cases each, one state had 2, and eight states had 1 each. Wisconsin had more cases this year than in either of the previous years. Connecticut, Illinois, Iowa, Massachusetts and Michigan show an increase over last year. Illinois had 5 more cases than last year. Table 2 shows a comparison of the number of cases in each state for the three years.

TABLE 2.

	1903.	1904.	1905.
Alabama	....	....	1
Arizona	....	....	....
California	2	4	4
Colorado	4	....	1
Connecticut	3	....	3
Delaware	....	....	1
Dist. of Columbia	1	....	....
Florida	....	....	....
Idaho	1	....	....
Illinois	49	15	20
Indian Territory	1	....	....
Indiana	11	6	3
Iowa	14	2	3
Kansas	11	1	....
Kentucky	4	2	....
Maine	2	4	1
Maryland	1	....	1
Massachusetts	16	5	7
Michigan	29	7	9
Minnesota	15	2	2
Missouri	29	1	3
Montana	2	1	1
Nebraska	4	3	3
New Hampshire	2	....	....
New Jersey	8	9	3
New York	36	9	6
North Dakota	....	....	....
Ohio	67	9	5
Oklahoma	....	....	1
Oregon	2	....	....
Pennsylvania	82	17	12
Rhode Island	3	....	....
South Dakota	....	....	....
Tennessee	....	....	....
Texas	....	....	....
Utah	....	1	1
Vermont	3	2	....
Washington	2	1	....
West Virginia	3	....	....
Wisconsin	10	4	13
Wyoming	....	....	....
Total	415	105	104
No states having cases	30	21	23

It appears that most of the restrictions by city ordinances against fireworks during the past few years have been against the toy pistol. This probably accounts for the decrease in the number of cases from this cause the last year and possibly for the enormous decrease from 1903. Table 3 shows a comparison between the causes of tetanus cases this year and the two previous years.

TABLE 3.—CAUSES OF TETANUS CASES.

	Blank cartridge.	Giant cracker.	Cannon.	Firearms.	Powder, etc.
1905	65	17	4	5	13
1904	74	18	5	1	7
1903	363	17	5	3	27

While the number of cases from blank cartridges is decreasing each year, cases from the other causes remain about the same or on the increase.

Besides the lockjaw cases directly due to 4th of July accidents, 32 cases were reported this year due to other injuries, as penetrating wounds from nails, splinters, from crushing injuries in falls or otherwise, compared with 55 such cases last year and 15 in 1903.

DEATHS AND INJURIES ASIDE FROM TETANUS.

In Table 4 will be found a summary of all injuries, including tetanus, as well as of all causes. This is arranged, as heretofore, by states, so that comparisons may be made. Beneath the totals at the bottom of this table we have inserted for comparison the totals for 1903 and 1904. Table 5 is arranged to show a more ready comparison by states of the total accidents and deaths for three years.

Pennsylvania, the birthplace of independence, is this year, as last, far in the lead with 721 casualties, followed by New York with 566 and Illinois with 542. Two years ago Massachusetts led with 637, but last year dropped to eighth place with only 193, and returned this year to fourth place with 467. The 1,007 total increase over last year is fairly well distributed among the states.

All accidents were carefully omitted which were not received in the discharge or handling of fireworks or other means of noise production on or about the Fourth of July. For instance, some soldiers in the course of their regular duty were killed by the explosion of a cannon while firing the morning salute on the morning of the Fourth. As this might have happened at any time and was in line with their regular duty, it could not well be considered as due to fireworks for Fourth of July celebration.

Besides 87 deaths from tetanus, there were 95 from other accidents, making a total of 182 deaths. There were 4,994 non-fatal injuries, or over a thousand more than the total for last year, which was 3,986, or for 1903, which was 3,983. Therefore, the total of dead and injured was 5,176, as compared with 4,169 for last year, or 4,449 for 1903. Yet for all this enormous number of injuries we find some cities congratulating themselves on the small number of accidents this year! Some of these reports are rather pathetic. After the expression regarding the "comparatively few accidents this year" follows a long list of names of those having eyes put out, fingers or hands torn off, of one young man to save whose life it was necessary to amputate both legs, and of others having their faces lacerated or other disfigurements which the hapless celebrants will carry with them to the ends of their lives. And this was "better than former years!"

Of the 95 killed, aside from tetanus, through the use of fireworks, there were 37 persons killed by gunshot wounds, 13 of these being hit by stray bullets from the reckless use of loaded revolvers or rifles on the part of others; 23 persons, mostly young children, were burned to death by fire resulting from fireworks; 10 persons died from fright or shock as a result of the sudden loud noises near them. A baby was thrown into convulsions and died as the result of a large firecracker explosion near its car; 7 were killed by a cannon, a number by the bursting of these from an overcharge of powder; 4 were killed by giant crackers, 4 by powder explosions, 3 by misdirected sky rockets, 2 by falls in efforts to get away from firecrackers, 2 in runaways due to firecrackers being thrown beneath the horses, 2 by dynamite and 1 by the explosion of a railroad torpedo.

The non-fatal accidents were apparently more severe this year than last, 6 more were made totally blind, 45

Table 4.—Summary by States of July Fourth Casualties.

State.	Deaths.			Injuries.						Total Persons Dead or Injured.	Causes of Tetanus Cases.		Causes of All Cases Aside from Tetanus Cases.						
	From Tetanus.	From Other Causes.	Total.	Loss of Sight.	Loss of One Eye	Loss of Legs, Arms or Hands.	Loss of Fingers, One or More.	Other Injuries.	Total Non-fatal Injuries.		Blank Cartridge.	All Other Causes.	Blank Cartridge.	Fire Crackers.	Cannon.	Firearms.	Stray Bullet.	Canes and Caps.	Powder and Fireworks.
Alabama	1	....	1	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....
Arizona	....	....	....	....	....	....	....	4	4	4	....	....	....	1	....	....	....	....	3
Arkansas	....	....	....	....	....	....	....	3	3	3	....	....	2	....	....	....	....	....	1
California	4	3	7	....	6	4	2	123	135	142	3	1	18	37	16	7	5	6	49
Colorado	....	1	1	....	1	2	1	21	25	26	....	1	....	13	2	....	1	....	9
Connecticut	1	4	5	....	1	....	4	122	127	132	1	2	39	32	15	6	....	3	34
Delaware	1	1	2	....	....	1	1	10	12	14	1	....	3	5	....	2	....	....	3
District of Columbia	....	....	....	....	....	....	1	23	24	24	....	....	1	9	1	4	....	....	9
Florida	....	....	....	....	....	....	....	2	2	2	....	....	1	....	1	....	....	....	....
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Idaho	....	....	....	....	1	....	....	2	3	3	....	....	....	3	....	....	....	....	....
Illinois	19	16	35	2	11	9	27	458	507	542	10	10	94	198	64	32	22	18	94
Indian Territory	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Indiana	3	4	7	2	3	4	7	194	210	217	3	....	29	80	27	8	5	3	62
Iowa	3	6	9	2	10	3	33	271	319	328	2	1	23	172	37	8	4	16	65
Kansas	....	2	2	....	1	2	4	47	54	56	....	....	7	22	9	4	....	6	8
Kentucky	....	....	....	....	1	....	....	16	17	17	....	....	....	....	2	1	1	1	13
Louisiana	....	1	1	....	....	....	....	2	2	3	....	....	....	....	....	2	....	....	1
Maine	1	....	1	....	....	1	1	26	28	29	1	....	3	4	2	2	....	....	17
Maryland	1	....	1	....	....	....	1	11	12	13	1	....	....	6	....	....	....	....	6
Massachusetts	6	3	9	....	5	1	12	440	458	467	4	3	98	139	39	20	9	7	148
Michigan	6	3	9	....	9	5	21	244	279	288	7	2	42	107	33	11	1	21	64
Minnesota	2	1	3	....	5	2	4	160	171	174	....	2	25	84	10	5	1	6	41
Mississippi	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Missouri	3	2	5	1	8	3	10	191	213	218	2	1	71	45	15	9	6	4	65
Montana	1	1	2	....	....	....	2	36	38	40	....	1	....	14	1	....	....	1	23
Nebraska	3	1	4	....	2	....	1	36	39	43	3	....	12	14	3	1	1	2	7
Nevada	....	....	....	....	....	....	....	2	2	2	....	....	....	....	....	....	....	....	2
New Hampshire	....	....	....	1	....	....	1	7	9	9	....	....	....	6	1	....	....	....	2
New Jersey	1	....	1	4	5	10	15	315	349	350	3	....	73	110	31	22	9	7	95
New Mexico	....	....	....	....	....	1	1	3	5	5	....	....	....	2	....	1	....	....	2
New York	5	14	19	6	10	14	16	501	547	566	4	2	69	169	44	42	38	8	190
North Carolina	....	....	....	....	....	....	....	1	1	1	....	....	1	....	....	....	....	....	....
North Dakota	....	....	....	....	1	1	2	25	29	29	....	....	....	21	3	....	....	1	4
Ohio	3	9	12	1	5	1	18	292	317	329	3	2	47	111	39	14	10	17	86
Oklahoma	1	1	2	....	1	....	....	4	5	7	....	1	1	4	....	....	....	....	1
Oregon	....	....	....	....	....	....	2	7	9	9	....	....	....	7	....	....	....	....	2
Pennsylvania	11	15	26	3	9	11	16	656	695	721	7	5	54	222	46	38	25	19	305
Rhode Island	....	1	1	....	....	....	1	9	10	11	....	....	1	5	2	....	....	1	2
South Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
South Dakota	....	....	....	....	....	....	....	15	15	15	....	....	2	5	....	....	....	1	7
Tennessee	....	1	1	....	....	....	....	4	4	5	....	....	2	1	....	1	....	....	1
Texas	....	....	....	....	....	....	....	4	4	4	....	....	1	....	....	1	....	....	2
Utah	1	1	2	....	....	....	3	20	23	25	....	1	2	11	....	2	....	2	7
Vermont	....	....	....	....	1	1	....	8	10	10	....	....	1	5	1	....	....	2	1
Virginia	....	....	....	....	....	....	....	5	5	5	....	....	1	1	1	....	....	....	2
Washington	....	2	2	2	....	....	....	11	13	15	....	....	2	7	....	2	....	1	3
West Virginia	....	....	....	....	1	....	2	31	34	34	....	....	4	16	2	3	1	1	7
Wisconsin	10	1	11	1	8	4	12	194	219	230	9	4	15	81	27	18	....	17	59
Wyoming	....	1	1	....	1	....	....	6	7	8	....	....	....	6	....	....	....	....	2
1905 totals	87	95	182	25	106	80	221	4562	4994	5176	65	39	744	1775	474	265	139	171	1504
1904 totals	91	92	183	19	61	61	208	3637	3986	4169	74	25	931	1268	508	406	†	‡	1056
1903 totals	406	60	466	10	75	54	174	3670	3983	4449	363	29	1309	1152	397	236	†	‡	731

† Figures for accidents caused by stray bullets included with "gunshot" wounds in 1903 and 1904.
‡ Figures for accidents caused by canes and caps included with "powder and fireworks" in 1903 and 1904.

more lost one eye, 19 more lost a leg, arm or hand, and 13 more lost one or more fingers. The most prolific source of severe accidents, causing blindness, loss of hand, arm or other lacerated wounds was the giant cracker. Almost invariably the injury resulted from the picking up of the cracker or retaining it in the hand on the supposition that "it had gone." From a number of sources comes the observation that, while the spark continued to burn the central pith, *the outer part of the fuse ceased to burn.* Thus the spark had disappeared, giving the impression that it had gone out until an explosion resulting in the tearing or loss of an eye, finger, hand or arm, gave ample proof to the contrary. This is further shown by the experience of one lad who picked up the cracker and put it under water to make sure the spark was out, but still it exploded, tearing his hand badly.

Following the giant cracker, the toy cannon still nearly holds its old place as a means of destruction. Stray bullets are entered in a column by themselves where heretofore they were entered in the column with "gunshot" wounds. This will show how many people are injured through the careless use of firearms on the part of others, and show in what states laws against firearms are less strictly enforced. As before stated, 13 people were killed outright through this recklessness, and 126 others more or less seriously injured.

Table 5.—Total Deaths and Accidents by States During Three Years.

	1903.	1904.	1905.
Alabama	2	7	1
Arizona	1	....	4
Arkansas	....	....	3
California	100	138	142
Colorado	39	44	26
Connecticut	162	133	132
Delaware	1	5	14
Dist. of Columbia	2	10	24
Florida	1	2	2
Georgia	....	....	....
Idaho	4	4	3
Illinois	366	423	542
Indian Territory	1	....	....
Indiana	160	211	217
Iowa	168	137	328
Kansas	63	88	56
Kentucky	30	72	17
Louisiana	....	2	3
Maine	31	32	29
Maryland	21	22	13
Massachusetts	637	193	467
Michigan	144	157	288
Minnesota	157	102	174
Mississippi	....	....	....
Missouri	147	84	218
Montana	5	17	40
Nebraska	46	63	43
New Hampshire	37	23	9
New Jersey	228	204	350
New Mexico	....	4	5
New York	522	549	566
Nevada	....	1	2
North Carolina	....	....	1
North Dakota	10	8	29
Ohio	443	327	329
Oklahoma	....	3	7
Oregon	16	13	9
Pennsylvania	533	744	721
Rhode Island	64	30	11
South Carolina	....	....	....
South Dakota	4	10	15
Tennessee	4	1	5
Texas	2	2	4
Utah	23	22	25
Vermont	45	14	10
Virginia	....	11	5
Washington	21	25	15
West Virginia	19	16	34
Wisconsin	190	215	230
Wyoming	1	2	8
Total	4,449	4,169	5,176

We have added a column for the canes and caps. Even these canes, which at first were heralded as a safe means of noise making, are not as harmless as at first supposed. The noise element is certainly a success, but the exploding cap often causes penetrating wounds of the ankles or legs—usually the most unprotected part of those who use them, the boys with knee pants. Then, overcharging the cane caused it to explode in many instances, the particles of iron doing considerable damage. One case of tetanus this year resulted from such an injury.

As to preventative measures, we learn from many sources that great pains were taken this year to be prepared to give antitoxin in all injuries of a penetrating nature. Health departments in some of our large cities distributed a supply of antitoxin to the various hospitals and dispensaries that it might be ready if needed. Local medical organizations met before the Fourth, discussed the treatment of tetanus, and passed resolutions in favor of legislation regulating or restricting the use of fireworks. Cities passed ordinances, some only against the toy pistol, others prohibiting the sale of firecrackers above a certain size. Others prohibited the use of fireworks on any other day than the Fourth, while one city, Baltimore, placed the ban on the use of fireworks of all descriptions. The results in Baltimore are certainly gratifying, there being only 6 accidents reported from that city, and these of a minor nature.

This year, however, many cities did not stop with the passing of ordinances; arrests for their violation were numerous, and therein is a hopeful sign. Only a few years ago an arrest for making a noise on the anniversary of the nation's independence would have been looked on as against the spirit of patriotism and declared an outrage. Nothing better shows the change in public sentiment than the fact that this year a great many arrests were made and by public approval. Undoubtedly the publication of the facts, showing the enormous cost in life and limb of this manner of celebrating the Fourth of July, has helped to bring about this change in sentiment. The vigorous action of medical organizations throughout the land has added impetus, and the press has taken the matter up to a remarkable degree and has made good use of our published data on the subject.

The work should go on, however, until properly enforced laws shall put an end to the annual slaughter and maiming of so many of our children and young people. It is certainly high time there was an end to it. To place a sharp-pointed knife or a bottle of poison in the hands of a babe would certainly be as sane an act as to place in the hands of children or others inexperienced in the dangers and handling of them, such destructive implements as blank cartridge pistols, cannon, powder and giant crackers have proved themselves to be.

We urge it on the members of the medical profession, and on the press of our country, to continue with us in this crusade for a safe and sane celebration of our nation's birthday. The work of the past few years has had its results. May the movement have accelerated speed!

Clinical Reports

SUBCUTANEOUS EMPHYSEMA IN A CASE OF BRONCHOPNEUMONIA.

FRED S. SPEARMAN, M.D., C.M.
WHITING, IOWA.

Instances in which this condition is as widespread over the body as in the following case are not of frequent occurrence; another interesting point in this case was the rapid initial development of the emphysema. Nothnagel regards subcutaneous emphysema as a very grave complication in bronchopneumonia.

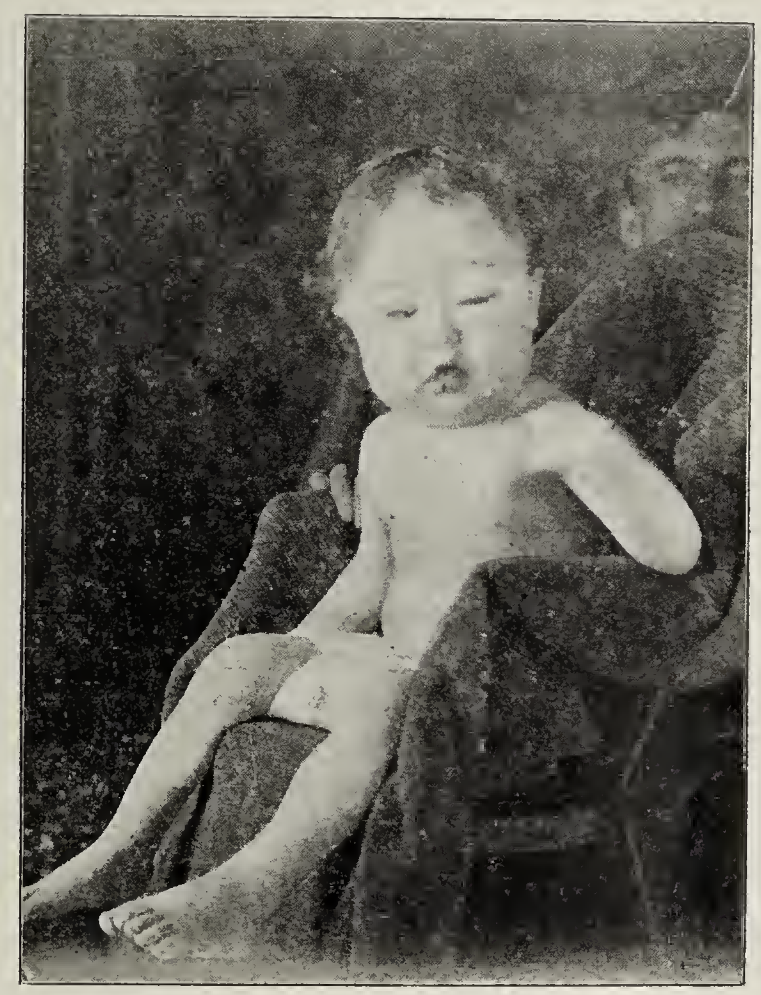
Patient.—J. B., aged 16 months, with the exception of a slight cold last winter, had always been healthy.

Family History—Both parents are living and in good health. An older brother and sister were recovering from the whooping cough. Father's mother died of phthisis.

Present Illness.—I first saw the patient on June 4. The parents informed me that she had been suffering from whooping cough for about five weeks, but a day or two before I was called she developed a high fever with vomiting, and the cough altered in character.

Examination.—This showed fine crepitant râles, general throughout both lungs, respirations about 70 to the minute, pulse 160, temperature 102.6 in the axilla. Cough was hard and tight, expiration grunting, and nervous symptoms marked, such as clutching at the bed clothes and restlessness. The face was of a dusky hue; in short, all the symptoms of a severe bronchopneumonia were present.

Course of the Disease.—For the next three days there was little change in the general condition. The râles, however, became more liquid as secretion developed. There was considerable meteorism, and the rectum would become partially prolapsed when the child coughed.



On the afternoon of June 8 a slight swelling appeared on the left side of the neck, low down. That same evening, during a severe coughing spell, the swelling suddenly increased in size and spread in a few moments' time up the side of the face and on to the left temple and upper eye lid, completely closing the eye. By the following morning the upper part of the chest before and behind was involved, and the day after the entire scalp and right side of the face so that the right eye was also closed. During the ensuing three days the tumefaction extended over the remaining portion of the chest, as far down posteriorly as the sacrum, and down both arms.

Over the portions where the swelling was most marked the skin was tense and shiny, the swelling was elastic and nonresistant to pressure, crackled under the finger and was tender. The crackling resembled the sound made by squeezing a rag saturated with soap suds. I diagnosed the condition as subcutaneous emphysema resulting from a ruptured bronchus.

Whether it was a mere coincidence or not, with the appearance of the emphysema the general condition greatly improved, the nervous symptoms disappeared so that the child rested easily, grunting expiration soon nearly ceased, expectoration became profuse and easy, and the face showed a much better color. Pulse and temperature were also lowered, the latter dropping by lysis until, by June 17, it had reached normal. It occurred to me that possibly the escape of the air into the tissues had a favorable effect by relieving intrapulmonary pressure. By June 27 the emphysema had entirely disappeared, being last noticed on top of the head, and when I last saw the little girl, July 4, she had apparently recovered her usual health.

Treatment.—This was along the lines commonly employed in bronchopneumonia. The emunctories were kept active by means of frequent sponging with tepid water, calomel and enemata for the bowels, and plenty of water to drink. Diet consisted of milk and light broths. The chest was kept protected by a cotton batting jacket. A saline mixture containing iodid and citrate of potash with aromatic spirits of ammonia was administered to promote bronchial secretion and keep it free. The child vomited very easily, the attacks of coughing frequently producing emesis, so that it was rarely necessary to employ emetic measures in order to get rid of mucus.

The photograph was taken after the emphysema had commenced to subside, but shows clearly the puffy appearance of the eyelids, and also in part the swelling over the upper chest in front and behind.

CARBOLIC ACID BURN.

EFFECTUAL, ALTHOUGH LATE, USE OF ALCOHOL.

T. J. SWISHER, M.D.

RAWLINS, WYO.

A young lady employed in a drug store started home from work in the evening, taking with her a number of small parcels to deliver to patrons of the store who lived in her neighborhood. Among these parcels was an ounce bottle filled with 95 per cent. carbolic acid. In some way the bottle was broken, pouring the contents over both hands. As it was dark, she did not at first know what the bottle had contained, and only after the hands began to burn did she take the trouble to wipe off the excess of acid with her handkerchief. After reaching home, she applied a dressing of vaselin and it was not until over an hour after the burn occurred that I saw her. At this time the white eschar covered the entire palmar surfaces of both hands as well as the palmar and interdigital surfaces of all the fingers. Sensation over this surface was entirely absent and the fingers could not be voluntarily flexed. The hands were at once cleansed of the vaselin and put into an alcohol bath, with constant rubbing. Aften ten minutes the color began to return, a tingling sensation developed and the fingers could be voluntarily flexed. The alcohol bath was continued for twenty minutes and all evidence of the burn had then disappeared except a slight tingling and stiffness of the fingers which persisted for several hours, but which almost entirely disappeared by the following day. Aside from a little cracking of the skin over the finger tips and an unpleasant dryness which persisted for a week, the recovery was complete and immediate.

To me the interesting feature of the case was the length of the interval between the receipt of the burn and the application of the alcohol.

Believing this to be a topic worthy of discussion, I would like to hear from others with special reference to the length of time that may elapse before alcohol loses its power as a local antidote for this acid.

Diazo Reaction in Tropical Diseases.—A. Austregesilo of Rio Janeiro has been studying this subject since 1900. He found the diazo reaction almost constantly present in bubonic plague. Certain drugs modify the reaction, and as the disease progresses to a fatal termination the reaction generally fails. Antiplague serum does not affect it. In yellow fever and in malaria the tests were invariably negative. In beri-beri the reaction was always negative, as well as in leprosy, in scurvy and ankylostomiasis. In typhoid fever and in tuberculosis his findings were the same as those reported by others elsewhere. In smallpox the reaction was always present. His report is published in the *Revista Med.-Cir. do Brazil*, xiii, No. 3.

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FOURTH OF JULY CASUALTIES.

In this issue appears an annual summary of the accidents due to the idiotic methods of celebrating our national anniversary. The list, which no one can claim to be absolutely complete, is yet sufficiently appalling. There must be hundreds of minor injuries and many of a more severe character occurring on Fourth of July that never receive any public notice, and even deaths directly or indirectly due to such accidents undoubtedly escape publication or are miscredited to other causes. If we could have the full total of what we owe of human life and human suffering to this cause fully revealed, the facts would be still more formidable.

Nevertheless, the figures this year are full of encouragement. While the total of non-fatal injuries is greater than those of two years preceding, the total of deaths is still on the decrease, especially as compared with the figures of 1903. The difference is still more striking when we consider only those caused by tetanus, the most terrible death-causing factor. The toy pistol which has been so important a factor in the tetanus mortality in past years seems to be in the process of legal suppression, and what has been done in this particular case is possible with other of the important causes, a fact which is a very encouraging indication for the future. We can credit also to the direct use of antitoxin as a prophylactic, especially in some of our larger cities like St. Louis, a certain proportion of the prevention of Fourth of July tetanus. The use of this antitoxin is likely to increase and we may be hopeful of still better results in the future. The giant cracker is also a less fruitful cause of lockjaw, a fact probably due in part to the laws against its use. While the total deaths from tetanus, as well as from all causes, is not so markedly less than that of 1904, though very strikingly so as compared with 1903, we do not believe that this indicates that we have reached the normal limit of the result of effort for its decrease. The only satisfactory outcome will be reached when Fourth of July accidents are abolished as a cause of death or serious injury.

When we take the total of all injuries into account. the figures are. at first sight, less encouraging, as they exceed those of both of the previous years. This may be due. in part, to better reporting of minor injuries. owing to the interest that has been aroused of late years in the subject, and we think this is likely to be the fact. If so. it is an encouraging symptom rather than otherwise. One thing is certain. it is our duty as a profession to keep up the agitation. The public is not yet half educated as to the importance of the matter. If it were, our municipal and other authorities would be less tardy in their promulgation of proper regulations and less lax in their enforcement—two causes which are responsible for a large part, if not nearly all, of the evil as it exists. If we do our full duty, the time will come, and we believe is not so far distant, when the records of our national holiday will not be like those of a little war.

THE FUSO-SPIRILLAR SYMBIOSIS.

Recent medical literature contains numerous reports of the presence of fusiform bacilli commonly associated with long spirilla on various inflammatory and necrotic processes. In 1893, Rauchfus observed this symbiosis in ulceromembranous angina. In 1896, Vincent, who has made many reports of these organisms, described their presence in hospital gangrene and also in a form of ulcerative angina, since then often spoken of as Vincent's angina. Bernheim noted the presence of the same bacteria in stomatitis. Since then numerous corroborative observations have appeared from various parts of the world, thus indicating that these organisms are distributed widely. Indeed, the fusiform bacillus appears to be a normal inhabitant of the buccal cavity, and it is assumed by Vincent and others that it assumes a pathogenic rôle under special conditions only, more particularly lowered general vitality from all causes and other microbic lesions. Spirilla have been found in healthy mouths also and on normal tonsils, and they are regarded by many as the same organism as Miller's *Spirochæta denticola*. The first list of the different lesions in which these organisms have been demonstrated is constantly growing. Sometimes the fusiform bacillus only is present, but equally as often, if not oftener, both the microbes are present; hence, the term fuso-spirillar symbiosis, which is used by Vincent in a recent article on the subject.[1]

In addition to angina and stomatitis, frequently of an ulcero-membranous character, and noma, the organisms under consideration have been found in fetid oral abscesses, in hospital gangrene, in appendicitis (Vincent observed them in 11 of 19 cases), in gangrenous ulcers of the penis, bronchiectasis, periostitis and fetid abscess of the leg, and in cerebral abscess. It is important to bear in mind that other organisms, especially pyogenic cocci, are always present also. Although the interrelations of these various bacterial forms have not been worked out as yet, many of the lesions mentioned, particularly those associated with necrosis, have such manifest peculiarities that it does not seem likely that the fuso-spirillar symbiosis is wholly devoid of pathogenic significance. Thus, in the microscopic sections of the tissues involved. filamentous organisms are found at the line of advancing necrosis in large numbers. Experimentally the infection of materials from ulceromembranous angina, etc., is followed by localized gangrene and abscesses, but here it is manifestly impossible to determine the exact part played by the various bacteria present. This question can be settled only by continued work with pure cultures. Ellermann, as well as Weaver and Tunnicliff,[2] have obtained small abscesses with pure cultures of the bacillus. So far, it has not been possible to isolate the spirillum in pure cultures, although Weaver and Tunnicliff obtained evidences of the proliferation in mixed cultures with the fusiform bacillus and other bacteria. The fusiform bacillus, however, can be isolated in pure culture. Veillon and Zuber, in 1898, were the first to grow a fusiform bacillus which they found in a case of appendicitis. In 1904, Ellermann grew it from ulceromenbranous angina and gangrenous stomatitis, and more recently Weaver and Tunnicliff obtained pure cultures from angina, stomatitis and diphtheria. The bacillus in all cases was an obligate anaërobe that grew at the body temperature only. Further study may show that what is here spoken of as a "fusiform bacillus" in reality represents several varieties, although the descriptions of Ellermann and of Weaver and Tunnicliff appear to tally quite closely.

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[1] Ann. de Dermat., 1905, vi, 5. Abstracted in The Journal, July 29, 1905, p. 359.

It is important that the lesions, especially of the mouth and throat, in which the fuso-spirillar symbiosis occurs, should be recognized and studied carefully by clinicians in order that, if possible, a more perfect differentiation may be secured and clinical relations of the processes better understood. In order to recognize the lesions definitely, it is necessary to study carefully cover-slip preparations and to make anaërobic cultures. The usual method followed in the bacteriologic examination of the throat in suspected diphtheria does not suffice, and cases of membranous angina in which the diphtheria bacillus is absent merit particular attention. Deposits about the necks of the teeth, often associated with bleeding gums, in children, especially in institutions, also require special attention. On the whole, it is clear that the time is now at hand when progress in the knowledge of many lesions of the mouth and throat and of fetid and gangrenous processes elsewhere requires the use of anaërobic cultural methods, as well as the aërobic hitherto so largely employed alone.

THE ULTRAMICROSCOPIC, FILTERABLE VIRUS OF HOG CHOLERA.

Hog cholera is a very destructive disease and consequently of great economic importance. It is proving to be an important disease from the purely scientific point, as well because of recent significant discoveries in regard to its etiology. It is on this latter account that a gist of certain recent investigations, particularly by the Bureau of Animal Industry at Washington,[1] under the direction of D. E. Salmon, is presented.

When the hog cholera bacillus (*B. choleræ suis*) was discovered, twenty years ago, it was believed that the etiology of this disease was solved. Facts were continually encountered, however, that did not harmonize with the generally accepted view that the disease is caused by the bacillus. A form of acute hog cholera in southwestern Iowa, in particular, presented high contagiousness, the blood of infected animals being virulent on subcutaneous injection into healthy, non-immune animals, and on recovery a definite immunity—facts that are not observed in experimental infections with the hog cholera bacillus which, it must be borne in mind, is pathogenic to hogs and other animals on experimental inoculation, as well as very frequently present in animals sick with spontaneous hog cholera. De Schweinitz and Dorset found that the actual cause of this form of hog cholera passed through the finest porcelain filters, and that it consequently belongs in the class of so-called filterable or ultramicroscopic viruses, the number of which appears to be increasing slowly. These observations have been confirmed and enlarged by Boxmeyer[2] of Detroit and by Dorset, Bolton, and McBryde.[1] The latter investigators ascribe the new departure of the study of hog cholera to the skepticism felt by the late De Schwenitz as to its generally accepted bacillary origin.

The mysterious virus thus demonstrated is known as yet only by the effects it causes on injection into susceptible hogs, because all efforts have failed to reveal by staining or culture any visible microbe in the virulent filtrates. This virus is not a toxin, because the disease caused by filtered blood serum is transmissible through succeeding animals, a fact that shows that the causative agent possesses the power to multiply. In this respect the filterable virus of hog cholera resembles the virus of foot-and-mouth disease, as well as other diseases of this peculiar group, the only representative of which that occurs in the human being, so far as is now known, being yellow fever.

While the filterable virus must be regarded as the prime cause of the disease studied, the part played by the hog cholera bacillus can not be neglected. In the first place the Washington investigators are not willing to deny that the bacillus, under certain circumstances, may cause an independent disease; on the other hand, however, it seems quite certain that the filterable virus so reduces the natural resistance of the hog that the hog cholera bacillus is able to invade the infected animals and thus probably materially influence the result. Whether the bacillus is a normal inhabitant of hogs is not established definitely, but certain facts point in that direction. The actual demonstration that such is the case would materially encourage the view that the bacillus is a secondary invader. On account of the great probability that the relations between the ultramicroscopic virus of hog cholera and the bacillus of hog cholera are those of primary and secondary infecting agents, there is furnished an interesting analogy of what undoubtedly is the case in certain human diseases, especially severe forms of scarlet fever and smallpox, namely, that the primary cause, the actual contagious element, in the case of smallpox especially being capable of wide aerial dissemination, so lowers the general resistance that the otherwise harmless streptococci in the throat are able to invade the tissues and lead to the general streptococcus infection so commonly the case in fatal forms of these diseases. It may be permitted, too, to indulge in the speculation that similar complex conditions as in hog cholera may exist in other human diseases, such as whooping cough, for example, as well perhaps as in others, the etiology of which is now regarded as established.

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[2] Journal of Infectious Diseases, 1904, ii, 446. The literature is given fully in this article.

[1] De Schweinitz and Dorset: Bureau of Animal Industry, Circular 41, 1903. Dorset, Bolton, McBryde: Bureau of Animal Industry, 1905, Bulletin 72.

[2] Jour. of Infect. Dis., 1905, ii, p. 359.

The demonstration that filterable virus is the essential cause of outbreaks of so-called hog cholera naturally leads at once to new attempts at more effective therapy than heretofore available. Experiments with promising results have been made already by Boxmeyer and McClintock.[3] and the outlook seems favorable for ultimate success.

REMOVAL OF OVARIES FOR CARCINOMA OF THE BREAST.

The relations which exist between the breasts and the internal sexual organs, the uterus and ovaries, while apparent to every observant practitioner, so far as their *modus operandi* is concerned, are as obscure as ever. Aside from the gross changes in the breasts incident to childbearing, more subtle ones are present in many women at each menstrual period. The idea that such a physiologic condition might have a bearing on pathologic processes, and particularly on new growths in the breast, was first, we believe, suggested by the English surgeon, Beatson. Reasoning from analogy that if an ovarian injury in a cow would cause suppression of the milk, ovariotomy in a woman might also affect the mammary glands, he suggested castration in inoperable cases of mammary carcinoma. While the logic of Beatson's reasoning may not appeal to every one, his belief led him to carry into effect the natural deduction to be drawn from it, viz., removal of the ovaries in cases of hopeless mammary carcinoma. Some of the results obtained by Beatson and other surgeons in Great Britain have certainly been striking. While absolute cures have rarely been effected, the operation seems to have produced striking amelioration in a considerable number of cases.

Michels has called attention to the fact[1] that this work has been almost overlooked outside of the British Isles. He cites some remarkable cases to show the marked palliative effect which the operation may have. In at least two cases, quite large areas of carcinomatous infiltration of the breast or chest wall disappeared and had not returned in one case five and in the other eight years after the ovariotomy. Results like these were, however, exceptional, in most instances there was both local and general improvement, but in the long run the growth returned. The local improvement usually took the form of a decrease in pain, and accompanying this in a fair percentage of the cases a reduction in size of the tumor took place. In some instances, ulcerated areas took on a healthy appearance and completely healed up.

There is some dispute as to the indications for this operation. Many British surgeons advise operating even after the menopause, or at least for a year or two after it. Michels is opposed to this, and thinks that this operation should be restricted to women between 40 and 47 years of age. In young women, he thinks the operation is advisable on account of the well-known virulence of carcinoma in them; after the menopause the operation is uncalled for, as Nature has practically done the same thing in a different way. If possible, it is advisable to remove the recurrence of the carcinoma at the same time that the ovariotomy is done.

It is fair to speculate on the way in which the removal of the ovaries influences mammary new growths, and several interesting points arise. If the effect is due to the suppression of an internal ovarian secretion which was stimulating the mammary neoplasm, we must assume that the tumor cells had inherited in a marked degree the possibility of being stimulated, notwithstanding the fact that they are far from being normal breast cells. One would naturally, we think, tend to compare the process described with the shrinkage of myomata, which often follows the menopause. It is well to bear in mind that, at the change of life, the breasts, as well as the other sexual organs, undergo atrophic changes. May it not be that the oöphorectomy simply brings on an artificial menopause and leads in this way to atrophy of the tumor? Here, again, we would have to assume that the tumor cells had inherited the characteristics of their parents, the normal breast cells. There is really nothing very far fetched in this assumption, however, for we know of tumor cells which are able to secrete substances like normal cells. Certain adenomata of the liver, for example, secrete bile. Like everything connected with the question of internal secretions, the subject is a fascinating one, but, like many subjects of a pathologic nature, it brings into the glare of the limelight our weaknesses in physiology. There are still many things to be learned regarding the connection between the breasts and the internal sexual organs.

THE RELATIONSHIP BETWEEN GENERAL PARALYSIS AND TABES DORSALIS.

The similarity which exists between general paralysis of the insane and tabes dorsalis has been noted and commented on since shortly after Westphal accurately described the latter disease. The concurrence of the two diseases is relatively so common, the relation of both conditions to syphilis is so frequent, and the pathology of the two diseases so similar that one is tempted to assume that they represent different phases of the same fundamental condition. It is the French school of physicians who have most ardently supported the view that unity between the two diseases exists, though some German observers, notably Schaffer, strongly support them. There are certainly many points in favor of such a view. According to Nageotte, two-thirds of the cases of general paralysis are accompanied by tabes; an individual may start with the latter disease, then mental symptoms may set in and the picture change to that of general paralysis; the brains of tabetics may show the anatomic changes of general paralysis; tabes may be masked by general paralysis. All these facts emphasize the intimate relationship which exists between the two diseases, and while many hold that the two conditions are separate, those who have had an opportunity to study both neurologic and psychiatric cases seem inclined to favor such a unity.

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[3] Jour. of Infect. Dis., 1905, p. 368.

[1] Münch. med. Wochft., vol. lii, No. 24, Ab. in Journal, p. 663.

The question has been restudied recently by Cotton, who has had the advantage of being able to select from a large number of patients some twelve of which could be carefully followed from the beginning to the end of their sickness. The cases which were studied were those which would be classed by some authors as taboparalysis. This term includes any case which presents symptoms of a combination of the two diseases, and, of course, includes three possible groups of cases, i. e., those in which the tabes preceded the paralysis, those in which the opposite condition occurred, and those in which the two diseases progressed side by side. All varieties of cases were studied by Cotton and most careful records were kept of the disturbances in sensation, the pupillary reaction, the various crises, bladder and rectal symptoms, and the condition of the deep reflexes. The result of the investigations lead Cotton to believe that the two diseases present many analogies in their etiology, symptomatology, and course, and that they occur so frequently together that it must be more than a mere coincidence. The clinical symptoms of the two diseases when combined is the same as when they exist apart, though there are differences in degree which depend on the predominant anatomic localization of the pathologic process. The absolute identity of the two diseases can not, of course, be settled until more is known of their pathogenesis.

This study of Cotton[1] does more than to draw attention to the similarity between two very common diseases. Reading between the lines, one gathers the impression that much of the disagreement which has existed and which still exists on this and kindred subjects is due, partly at least, to the separation of neurology from psychiatry. This, no doubt, produces experts in both of these subjects, but it narrows their field of vision. The subjects are so closely allied, and run so insensibly the one into the other that they should never have been divorced, and only were divorced by necessity. The stigma attaching to the insane has now been largely removed, and we hope that in the near future there will be in America, as there are now in Europe, more psychiatric clinics in which acute cases of insanity, especially, are seen and studied by the same man who sees and studies neurologic cases.

THE COUNTY SOCIETY AND THE ORGANIZATION MOVEMENT.

Since the reorganization plan was adopted in 1901—only four years ago—remarkable progress has been made in unifying the medical profession in the United States. The influence of the new spirit permeating the profession is being felt not only in the reorganized states, but even in the two or three states which have not adopted the new plan. Any one who will compare the conditions of to-day, in any part of the country, with conditions of five years ago will realize that a remarkable change for the better has taken place. "Unity, peace and concord," as Osler put it, as well as a spirit of scientific progress, are distinguishing features of the new era.

The recognition of the importance of the county society as a unit is the basic principle on which the work of organization has been and is being conducted. The most important unit in the scheme of organization is the county society; then come the state association, and the American Medical Association. The last is the least important of the three; the first—the county society—the most important. Every effort that has been made by the American Medical Association in developing organization has been made with the above principle in view—the importance of the county or local society.

Now the machinery all over the country is practically complete, and results must be looked for. These are many, but the most important is that of making the county society something more than a name—something more than a piece of machinery lying idle, rusting: it must be made a living force to dignify medicine as a profession, to increase public respect for, and to elevate the material, moral and intellectual status of, that profession. How can this be accomplished: how can the county society be made a power for good to those who belong to it, and to the community? In many and various ways. The first thing to be recognized, however, is that the average county society, if left to itself, will become dormant. There are many exceptions, but this is the rule. Another thing must also be appreciated: if a society can be made a living, active force for good in one community, a similar society can be kept up in another community where similar conditions exist.

It was the recognition of these facts which prompted the House of Delegates and the Board of Trustees to ask Dr. McCormack to continue his work for another year. As Chairman of the Committee on Organization, he has been devoting a large part of his time in the recent past to organization work, although no small part of his efforts was exerted in aiding the adoption of the uniform plan by the various constituent associations. Hereafter practically all of his efforts will be in the line of building up county societies. His experience has taught him what can be accomplished and how. He has seen the society in one county doing magnificent work, while in the same state, with exactly the same conditions, the society in another county was practically dead; and he has seen why, has shown the members of the dormant society why, with the result that it too has become a living force.

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[1] Am. Jour. of Insanity, LXI, No. 4.

In other words, as he has gone from county to county and from state to state, he has acquired an experience with the methods and conditions that can, with great benefit, be imparted to physicians of other communities. Methods of regulating and upholding fees, and of securing the indispensable post-graduate work in scientific medicine, are thus compared and classified and made available for use everywhere. He has learned from observation and from experience what has been done in some communities in stimulating the organization of the profession; what methods have been adopted for dealing with quackery and with the nostrum evil; what has been done to bring about better relations between the physician and the pharmacist, and, in fine, what has proved to be the most effective methods of dealing with all the business and scientific sides of medicine. Thus Dr. McCormack is working, not as the agent of The Journal, not to build up the American Medical Association, but to benefit the medical profession of the United States, individually and collectively.

But if the whole country is to be covered, individual counties can not be visited, and should not be except for special reasons. The societies of a councilor district should unite in a district meeting so that mutual benefit may accrue to many and not to one society alone. The councilor should take the initiative, but the officers of a county society who desire Dr. McCormack to come into their community should write to their councilor to invite him. It must be remembered that he will not go into any state or into any district of a state unless the profession of that state or district desires that he should do so. All expenses connected with this work are met by the American Medical Association.

A MISERABLE OUTRAGE.

The depths of venality to which the nostrum makers descend in order to gather in a few more dollars are beyond the belief of those possessing normal human sympathy. One of the worst recent instances of this sort of inhumanity is now to be found in some newspapers of the Southern states. Inserted as news, not as an advertisement (*vide,* for example, the Shreveport, La., *Times* of August 16, 1905) appears what is called "an interview with Dr. Hartman concerning the yellow plague." Dr. Hartman needs no introduction, being widely known to physicians as that citizen of Columbus, Ohio, who has amassed a colossal fortune by selling to a gullible public as a "medicine," under the name of peruna, low-grade whisky flavored with cheap bitters. Aided by two or three avaricious renegade physicians, he has enmeshed in his fraud thousands of clergymen, lawyers, politicians, etc., and, if what is reported is true, has undoubtedly created an appetite for intoxicants in unsuspecting men and women and in innocent children. In the present instance, the fraud on humanity is at least equal in perfidy to that of the traitor who sells out his country. A summary of this interview is being spread broadcast over a portion of the United States for the benefit of yellow fever sufferers. "In all such cases it is advisable for the person to take peruna." "Begin taking peruna at once in teaspoonful doses so as to harden and heal the mucous membrane against the possible invasion of the yellow fever poison."(!) "Peruna should be used during the whole course of the epidemic." "I feel sure that any person following this advice is in no danger of taking yellow fever." What could be worse? Shall such things be permitted to continue? Can nothing be done to protect a fear-stricken people from such damnable outrages on humanity? And what about newspapers that will join in a conspiracy of this kind to defraud their readers for a few paltry dollars?

YELLOW FEVER.

In New Orleans the epidemic is held in check, the rate of increase not rising, while for the week there is a slight falling off in the number of new cases. Unfortunately, the pest spreads outside the city, and in some places the situation is grave. As the disease spreads it is demonstrating the failure of the shotgun quarantines. With dramatic unconcern the disease has penetrated some of the quarantines that have been reported to be "airtight." In our last week's issue we were glad to publish a letter from a correspondent at Natchez, Miss., who maintained that our strictures against the barbarity and futility of the shotgun quarantine were unwarranted. Writing under date of August 15, our correspondent said: "We know that non-intercourse with infected areas will prevent the introduction of the disease into healthy towns, and propose to follow up the plan that has proved safe in other times. . . . But this city is certainly closed to the world for the present." Yet, twelve days later, Natchez admitted to the world that it had nine cases of genuine yellow fever, and three additional suspicious cases. Nothing could more clearly illustrate the great weakness of the non-intercourse quarantine, leaving out of account its brutality of administration in so many places. It lulls the people into a false sense of security, so that the really necessary prophylactic measures either are not taken at all or are executed in a half-hearted way that renders them worse than useless. With all its rigors and entailed human suffering, the shotgun quarantine always fails of its object to arrest every incomer. There is ever a loophole—a careless or avaricious or potatious guard, or a byway that escapes watch. The traveler of the better class, going openly, can not miss detention or deportation, but the criminal and the tramp, and at times the local celebrity of powerful connections, can always find an open door. Town after town in the infected area is demonstrating these truths. It is to be hoped that these widely-known and manifold failures of the rigid quarantine as the sole means of defense against an epidemic will bring about the next most useful lesson to be taught by the present calamity. The money and energy spent on irrational quarantines, with the necessary contribution of still larger sums, if devoted to general and permanent sanitation, the destruction of mosquitoes, the oiling and draining of swamps, marshes and ponds, the close screening of houses, cisterns and beds, and the proper, humane, screened isolation of every suspicious case of illness, would accomplish the good that is desired; and there are no other known means of arriving at this end. It is impossible to believe that the present lessons will be forgotten in the future.

SLEEP-DRUNKENNESS.

Consciousness or the waking state is the condition in which active communication with the external world exists through the intermediation of the senses. It may undergo various modifications, some of a normal character, as in sleep, others of a morbid character, such as coma. During sleep, there is reason to believe, certain subconscious processes, partly of perception, partly of ideation, continue, and of which there is at times recollection and at other times none. This statement is exemplified in connection with dreams. In the derangements of consciousness symptomatic of morbid states, such as that which occurs, for example, in the course of epilepsy or of uremia, there is, as a rule, no memory of events that have transpired during this time. The dividing line between the normal and the abnormal, however, is at times so tenuous and the question of recollection or not is involved in so much uncertainty that this factor can not be considered as a means of differentiation. Under the term sleep-drunkenness or somnolentia has been described a condition in which during apparent sleep individuals perform purposive acts, at times, of a most complex and hazardous character and of which, subsequently, they have a clear and distinct recollection. A striking instance of this disorder has recently been placed on record by Dr. E. W. Taylor.[1] An otherwise healthy man, aged 31, who for years had occasionally walked in his sleep, related that he was compelled by an irresistible impulse to leave his bed, remove a screen from a window and slide down a copper water spout to the ground, scraping his hands and feet in the act. On reaching the bottom he realized what had taken place and quietly returned to bed. He maintained that he had not lost consciousness and that he had a distinct recollection of everything that had transpired. On another occasion, in his nightshirt, he entered, through a window, the bedroom of another man. At still another time, he vaulted from a third-story window, being awakened while hanging from the sill. He had had many other experiences of a similar character. Awaking was unattended with vertigo or confusion. According to the patient's explanation, his actions were impelled by an overmastering fear from a frightful dream. He had never seriously injured anyone, but he stated that if he were forcibly prevented from making his escape from the threatened danger he would stop short of no degree of violence to attain the desired end. The condition in question has thus clearly important medicolegal bearings, as the matter of responsibility might readily be brought into question. The term somnolentia, as applied to the disorder, appears wholly inadequate, while sleep-drunkenness seems lacking in accuracy as a descriptive term. Dana considered the condition a kind of active nightmare, but it seems to be an active form of somnambulism.

VACCINATION DURING ERUPTIVE STAGE OF SMALLPOX.

In a recent issue of the *Lancet*,[1] Dr. J. Cooke Hibbert claims that vaccination or re-vaccination may be successfully performed during the eruptive stage of smallpox, and cites eleven cases in support of his contention, the vaccination in these cases having been performed on the first, third and thirteenth day. This is by no means an uncommon occurrence, as has been demonstrated frequently at the Chicago Isolation Hospital. Patients vaccinated on the second and third day of the eruption, or up to the eighth day, will, as a rule, have a typical take, but not after this time. In a paper by Dr. Heman Spalding,[2] published in The Journal several years ago, reference is made to an experimental vaccination of over one hundred smallpox patients after the eighth day of the eruption. In none of these cases was there a take. The case reported by Hibbert in which vaccination was successful on the thirteenth day is probably one of a spurious type, although it might have been a perfect vaccination. These findings only prove that the tissues are not impregnated with the immunizing substances of smallpox. The fact that vaccination or re-vaccination was successful in a case having a rash of doubtful character is not an argument against that case being one of smallpox, but in such a case a positive diagnosis will have been made before there is any evidence of the outcome of the attempt at vaccination. Hence, vaccination for diagnostic purposes during the eruptive stage of any exanthem is of no value whatever.

Medical News

CONNECTICUT.

Cedar Mountain Hospital.—The free bed fund for Cedar Mountain Hospital for Deserving Consumptives now amounts to more than $5,300.

Norman Kerr Lecture.—Dr. T. D. Crothers, Hartford, has accepted an invitation to deliver the first oration in the Norman Kerr memorial lectureship at London, Eng., October 10.

Personal.—Dr. Wyeth E. Ray, Hartford, has been appointed associate medical director of the Travelers' Insurance Company.——Dr. Elias B. Heady, Milford, was seriously injured August 12 in jumping from an unmanageable automobile.

Nominal Damages.—In the damage suit of Lorin A. Barnes, Torrington, against Dr. William H. Carmalt, New Haven, in which $25.000 damages was claimed for the alleged sewing up of a piece of gauze in the abdomen, in an operation, the Superior Court awarded the plaintiff nominal damages.

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[1] Boston Med. and Surg. Jour., April 6, 1905, p. 398.

[1] Lancet, London, May 20, 1905.

[2] The Journal A. M. A., Oct. 11, 1902, p. 906.

July Deaths.—During July 1,648 deaths were reported in the state, equivalent to an annual mortality of 20 per 1,000. Of this mortality 37.3 per cent. occurred in children under 5 years. The chief death causes were: Diarrhea, 466; nervous diseases, 159; accidents and violence, 135; consumption, 110; heart disease, 109, and pneumonia, 44. Infectious diseases caused 189 deaths, or 11.3 per cent. of the total mortality.

ILLINOIS.

Typhoid Epidemic.—Typhoid fever is said to be prevalent in and around Greenville.

Unlicensed Practitioner Departs.—David Johnson, Waukegan, who claimed to have "an interstate and international license," and was fined $100 and costs in March for practicing without a license, learning that a warrant had been issued for his arrest, fled from the city.

Chicago Deaths.—During the week ended August 26, 561 deaths were reported, equivalent to an annual mortality of 14.68 per 1,000. Of these 179 were under one year old and 230 under 5 years of age. Acute intestinal diseases caused 152 deaths; consumption, 49; violence, 34; pneumonia and heart disease, each 33; nervous diseases, 27; nephritis, 26, and cancer, 24. Typhoid fever caused 12 deaths.

Personal.—At the annual meeting of the medical staff of the City Hospital, Moline, Dr. Albert M. Beal was elected president; Dr. Albert R. Beal, vice-president, and Dr. August H. Arp, secretary.——Dr. Annie B. McCallum Alguire, Belvidere, was thrown from a buggy August 20, breaking a rib and sustaining other serious injuries.——Dr. Richard E. Shurtz, Champaign, who has been seriously ill with septicemia in Denver, is recovering.——Dr. Joseph T. White, Freeport, was operated on for appendicitis at the Wesley Hospital, Chicago, August 16, and returned home three days later.——Dr. James E. Stubbs, Chicago, who has been seriously ill with septicemia at Colorado Springs, has returned to Chicago and is improving.

MARYLAND.

Personal.—Dr. J. T. Payne has removed from Corbet to Sunnybrook, Baltimore County.——Dr. Howard Bratton of Elkton was recently thrown from his buggy and dragged some distance, being badly injured.

Open-Air Sanitarium in Blue Ridge Mountains.—Through the efforts of the Quarter Club, Baltimore, an open-air sanitarium for consumptives has been set in operation at Mount Airy, among the foothills of the Blue Ridge Mountains. It was opened July 28 and has now seven patients. It is on a high hill near the Baltimore & Ohio Railroad, and consists of a seven-room cottage, with ample porches, and six open-air shacks on the edge of a forest. The current expenses are borne by the Hospital for Consumptives of Maryland. It is to be open winter and summer, and only the most hopeful cases are to be admitted. Thus has begun unostentatiously a work which doubtless will become one of the most useful and important charities in Maryland.

Baltimore.

Removals.—Dr. H. Walker Hutchins has gone to North Liberty, Ind., to practice.——The State Board of Health has removed its offices to its old quarters in the burnt district.

Visitor from Australia.—Dr. M. U. O'Sullivan, F.R.C.S.I., senior surgeon in St. Vincent's and the Woman's hospitals, Melbourne, Australia, visited the Baltimore hospitals last week.

Typhoid Not Unusually Prevalent.—The mayor makes the statement that typhoid fever is not more prevalent here than usual at this season of the year, and that the 140 cases said to exist represent all the cases in institutions since July 1. Many of these are now well and on the street.

College Denies Indebtedness.—The answer of the Woman's Medical College to the bill filed on July 25 for the appointment of a receiver, denies that the institution is insolvent, says that the allegations of the petitioners are "recklessly and wantonly made and untrue," and avers that it has never been customary for the college to pay its lecturers for their services, and denies that it is indebted to them for such.

MINNESOTA.

Founds Hospital.—The executor of the estate of the late Mrs. Mary Elliott has conveyed from the estate property valued at $175,000 in trust for the founding of a University of Minnesota Hospital at Minneapolis, as a memorial to the late Dr. Adolphus F. Elliott.

Personal.—Dr. Jehiel W. Chamberlin, St. Paul, who sailed from Montreal for Europe July 6, sailed for home September 1.——Dr. George E. Benson, Minneapolis, has returned from Europe.——Dr. E. H. Beckman, medical inspector and assistant bacteriologist of the State Board of Health, has been elected city physician of Minneapolis.——Dr. David H. Lando, St. Paul, has been given honorable mention for a tnesis submitted at Vienna.——Dr. Frederic J. Plondke, St. Paul, is studying in Europe.

Murray County Medical Club.—Physicians of Murray County met at Slayton August 1, and organized a club to promote good-fellowship among the profession of Murray County and adjacent counties. The following officers were elected: President, Dr. Emil King, Fulda; vice-president, Dr. Walter E. Richardson, Slayton; secretary and treasurer, Dr. Leon A. Williams, Slayton; and censors and committee on medical ethics, Drs. Milton A. Trow, Avoca; George G. Balcom, Lake Wilson, and C. C. Walker, Currie.

NEW JERSEY.

Health Officers Elected.—Dr. Samuel D. Mayhew was elected health physician of Bridgeton August 24.——Dr. Duncan W. Blake was elected medical inspector of Gloucester City August 21.

Physicians Refuse Lodge Work.—All the physicians of Trenton have banded together in an effort to overcome lodge practice, and have signed an agreement not to accept contract lodge work in any form.

Milk Dealers Arrested.—Warrants have been served on two dealers at Egg Harbor to appear for adulterating food, as a result of the inspection by the State Board of Health a few weeks ago. Both men denied the charge, but will appear for trial before the Circuit Court.

Suicides Increase.—The annual report of the State Board of Health shows a material increase in the number of suicides during 1904. During the year there were 314, as compared with 265 for the previous year. The 1903 showing is at the rate of 15.70 per 100,000. Of the suicides 9 were residents of Trenton, 4 of whom took poison, 2 used firearms, 1 a knife and 1 threw himself from a height. Poison caused 153 suicides and 112 died by asphyxiation. The age most frequently selected was between 35 and 45 years. Of the number recorded 112 were born in America, 64 in Germany and 24 in Ireland.

NEW YORK.

Less Typhoid.—There is less typhoid fever in Buffalo than there was at the same time last year, but many cases of pertussis still exist.

Buffalo Personals.—Dr. Roswell Park, who with Dr. Edward McGuire, is making a short tour of Great Britain, later will attend the International Surgical Association at Brussels.——Drs. Matthew S. Mann and Herbert W. Williams are on a fishing trip in Canada.

Moving Day for Insane.—Fifty insane women, who are charity patients at Long Island State Hospital, were taken on August 22 to the Willard Parker State Hospital at Ovid, N. Y. They are the first of 400 charity patients housed in the building now to be turned into the King's County Hospital to be transferred. The others will soon be sent to the Rochester and Willard institutions.

Eddyite Cases.—The health department refused to issue a burial permit in the case of Thomas A. Chilcott, who died without medical attendance, but who was treated by Eddyites. On investigation it was shown that his case was hopeless, because he died from diabetes and diabetic gangrene. At the request of the Erie County Medical Society the district attorney is investigating the death of Mason Griffin, 2 years old, who was treated by Eddyite healers. It is charged that an irregular death certificate, signed by a doctor who had not been in attendance, was granted, and that the boy died as the result of pertussis, a contagious disease which should be reported to the health department. By order of the district attorney the body is to be exhumed and the medical examiners will hold an examination.

New York City.

Personal.—Drs. William T. Bull, William B. Coley and Walter F. Chappell returned from Europe on the *Kronprinz Wilhelm*, August 23.

Detained at Hoffman Island.—Nine cabin passengers and six of the crew of the steamship *Finance*, from Colon, have been held for further observation on account of high temperatures.

The Brooklyn Theaters Closed.—There has been some complaint that the health board has acted in a high-handed manner in closing the Brooklyn theaters and condemning them as insanitary and dangerous. A statement has been given out at the headquarters of the Health Department that owners have been twice notified since April that they would have to comply with the law and that the complaints are unjustifiable.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended August 19, 464 cases of tuberculosis, with 115 deaths; 252 cases of typhoid fever, with 25 deaths; 119 cases of measles, with 5 deaths; 117 cases of diphtheria, with 19 deaths; 41 cases of scarlet fever, with 3 deaths; 16 cases of cerebrospinal meningitis, with 16 deaths, and 14 cases of varicella.

Typhoid Fever on the Decline.—The figures presented day by day show a steady decline in the number of typhoid fever cases. Only 22 new cases were reported in Brooklyn from August 19 to August 23. In the same time there were 13 new cases reported in Manhattan and none in the other boroughs. Last year the climax was reached in the week ending August 27, when 82 cases were reported. The number of cases for the corresponding week this year was 252.

Richmond Waterless.—An opinion was filed on August 21 sustaining the constitutionality of the act passed by the New Jersey legislature prohibiting the diversion of potable water in New Jersey to other states. This decision will greatly disappoint Staten Island, which looked to New Jersey to supplement its painfully scant natural supply. In view of the recent scarcity of water in this locality the problem of securing a sufficient supply is serious and the necessity imperative.

PENNSYLVANIA.

Personal.—Dr. James M. Anders, Philadelphia, has returned from his trip to Alaska.

Sanitary Engineer Selected.—Dr. Samuel G. Dixon, state health commissioner, on August 25, appointed F. Herbert Snow, Boston, Mass., chief of the sanitary engineering division of the State Health Department, August 25.

Illegal Practitioner Arrested.—The United States postal authorities have started a crusade to rid Philadelphia of quacks and illegal practitioners who advertise illegal remedies and through the mails suggest illegal operations. Four persons were arrested on this charge August 21 and held, one in $1,000 and three in $800 bail each. The law makes it a criminal offense to suggest by letter where illegal medical advice may be obtained. Besides the four arrests thus far made, convicting evidence has been obtained against several other persons. Since the crusade began many of the malpractitioners have left the city.

Philadelphia Health Report.—The total number of deaths reported for the week ended August 26 aggregated 438. This is the same number as reported last week, and the week before. Such a coincidence has never been known by the local authorities. The health of the city remains good and there is a decrease in contagious diseases. The principal causes of death: Typhoid fever, 10; consumption, 41; pertussis, 5; diphtheria, 5; cancer, 12; apoplexy, 23; heart disease, 35; acute respiratory diseases, 25; enteritis (under 2 years), 59; enteritis (over 2 years), 13; Bright's disease, 39; general debility, 25; marasmus, 17, and injuries and accidents, 8.

No Temporary License.—It is not an uncommon practice for a physician to place in charge of his practice one who is not regularly licensed according to the act of assembly governing the practice of medicine in this state. Dr. Henry Beates asserts that the impression seems to prevail that such an appointment is not an infraction of the law. To show that such practice is illegal Dr. Beates has secured an official opinion from the attorney general concerning the subject, which is in part as follows:

> In my judgment this is not in accordance with the Medical Practice Act, which prevents one from opening an office and regularly establishing himself as a practitioner of medicine without having first qualified according to the statute. Duties of this character, requiring special qualifications and subject to government control as a part of the police power of the state, can not be assigned to unqualified persons. The mere fact that the assignment may last but a brief period does not alter the legal aspect of the case. The maxim of the law is *qui facit per alium facit per se*, and the agent in a matter of this sort must have the qualifications of the principal. I see nothing whatever in the law to prevent one qualified practitioner from calling on another qualified practitioner to take charge of his practice during his absence, but there is nothing whatever in the law which permits the substitution for a trained and duly qualified professional man of one who has not complied with the statute, and who, therefore, is not qualified to practice.

WISCONSIN.

Personal.—Dr. Wilbur T. Sarles, Sparta, sailed from Europe September 1.——Dr. Soren Sorenson, Racine, has been appointed head physician of the United Danish Societies of America.——Dr. Henry P. Rhode has been made health commissioner of Green Bay, vice Dr. Francis P. Thibido, who resigned after six years' service.——Dr. Henry L. Barnes, health officer of Ripon, has resigned.

Commissions on Prescriptions.—Dr. Edward A. Taylor, Racine, who was sued by a druggist for a drug bill of $70, which he refused to pay, claiming, it is alleged, that the druggist owed him $200 for business sent by him, was defeated on trial, the judge holding that contracts between physicians and druggists whereby the former receive commissions for sending prescriptions to the latter, are void and that such practices are contrary to public interest.

Must Make Reports.—The State Board of Health has issued a leaflet setting forth the law requiring reports of births, deaths and accidents. The following is a summary:

> The law provides that every attending physician practicing in this state shall report all births, deaths and accidents occurring under his jurisdiction within thirty days from the time of the occurrence.
>
> In cities *births* must be reported to the health officer.
>
> In cities *deaths* must be reported to the health officer.
>
> In cities *accidents* must be reported to the health officer.
>
> In towns and villages births must be reported to the village or town clerk; deaths must be reported to the village or town clerk; accidents must be reported to the village or town clerk. In all cases of death under your professional care you are required to certify to the health officer of cities and to the town or village clerk of towns or villages, the primary and secondary cause of death. The law requires that this shall be done before the burial permit can be issued.
>
> Fees for reporting births, deaths and accidents as above, 25 cents in each case, to be paid by the county in which they occur.

GENERAL.

Cholera in Manila.—A cable from Manila, dated August 25, states that there is an outbreak or cholera in Manila and that several natives and one American woman have died from the disease.

Tri-State Medical Society.—The seventeenth annual meeting of the Tri-State Medical Society of Alabama, Georgia and Tennessee will be held in Chattanooga, Tenn., September 26-28. The secretary is Dr. Raymond Wallace, Chattanooga, Tenn.

Health of Panama.—Acting Assistant Surgeon Mohr of the Public Health and Marine-Hospital Service reports that during July the deaths from all causes officially reported in the municipalities of Colon and Cristal was 72, excluding still births. Malarial fever has been very prevalent among the negroes and natives and is no doubt responsible for a large number of deaths. Recently large numbers of native Colombians have been brought to the Isthmus as contract laborers, and those who come from the interior of Colombia seem to be peculiarly susceptible to both malaria and yellow fever.

Health of Panama Canal Zone.—The June report of Col. F. C. Gorgas, chief sanitary officer, shows that while June, 1905, was not unusually salubrious in the city of Panama, there was nothing extraordinary in its death rate, either as compared with former Junes in the last 22 years or with other months in the last year. On the last of June over 10,000 laborers were on the government rolls. Of this number there were sick every day, on an average, 274, or 27 per thousand, a sick-rate which compares favorably with that of a similar body of laborers anywhere. Twenty-four persons died from all causes. This, if continued for the year, will give a death rate of 28.8 per thousand. In 1881, the first year of the French occupancy of the canal, the death-rate was 67 per thousand, with 11 deaths from yellow fever, a rate of 12 per thousand. During June, 1905, there were only 14 deaths from yellow fever, a rate of 3 per thousand. On the entire isthmus during the month, in a population of about 50,000 people, there were 61 cases of yellow fever with 18 deaths, a rate of about 25 per cent. Of these 61 cases, 30 were employes of the commission, of whom 4 died, a rate of about 14 per cent. Among this number were 15 Americans brought from the United States by the commission. Of these 15 one died. This difference in mortality is ascribed to the fact that the American is, on the average, in the prime of life, and in first rate condition, reports to the hospital as soon as he feels sick, and thus places himself in the best possible condition for recovery. Among the non-employes of the canal, there were 27 cases, of whom 13 died, nearly 50 per cent. These persons usually apply for treatment when they are beyond the possibility of deriving any benefit from it. One case of plague occurred at La Poca, the Pacific terminus of the canal, in the person of a negro laborer, a longshoreman who probably was infected through a cargo coming from some one of the infected ports to the south. A strict quarantine was at once established, and a rat crusade commenced. Only one infected rat was found and no other case occurred. The report also includes a detailed review of the sanitary measures carried out by the commission of the city of Panama in the way of street and yard cleaning, garbage collection, fumigating and yellow fever prophylaxis. The city has been divided into districts, each in charge of a physician who makes a house to house inspection in order that all yellow fever suspects may be isolated and screened at once. The organization of a brigade of rat-killers is also in progress.

THE YELLOW FEVER SITUATION.

CONDITION SEEMS BETTER, BUT GREAT ALARM STILL EXISTS—SYSTEMATIZED INSPECTION BEING ESTABLISHED.

Latest Reports.

Amelioration.—As we go to press fresh news comes from all parts of the stricken region. New Orleans reports that Dr. John Archinard, attached to the Emergency Hospital, believes he has found the germ of yellow fever—an organism resembling the malarial parasite.——Conditions in the city continuing to improve, Surgeon White contemplates the transfer of some of his force to the country, where the cases increase.——Leeville is the worst afflicted locality, but with outside help some improvement is seen.——Allegation comes that the cases at Gulfport, Miss., were deliberately concealed by a diagnosis of malaria to avoid quarantine difficulties. According to the story of the Gulfport woman, who fell ill of the disease on the way to New Orleans, and whose attack led to the discovery of the other cases, some patients in Gulfport had been under physicians' care for fourteen days before she left.——It is reported that Dr. Fitchette, health officer of Natchez, refuses to accept the diagnosis of the county health officer of the presence of yellow fever cases in that town. Surgeon Young, by special train, went from Jackson to Natchez to see the cases.——Alabama has quarantined against Natchez.——Texas has applied its quarantine to Memphis and to all of Mississippi.——Lunnenburg County, Virginia, reports a possible death from yellow fever.

The Record to August 30.—New deaths, August 29, 7; total deaths to date, 293; new cases, 80; total cases to date, 2,133; new subfoci, 9; total subfoci to date, 439.

Louisiana.

Record of Cases.—In New Orleans the epidemic record to August 27 was as follows:

New cases reported August 26	31
Deaths reported August 26	13
Total number of cases to August 26	1,755
Total deaths to August 26	260
Death rate of epidemic	14.8 per cent.
New foci of infection	12
Total subfoci to date	390

The reports for the week show a decreasing number of cases, but, toward the end of the week, a rise in the number of deaths. The epidemic in the city appears to be fully under control.——As showing the average health conditions of New Orleans the Board of Health has published the following figures:

Years.	Number of deaths.	Population.	—Death rate per 1,000 per annum.— White.	Colored.	Total.
1899	7.893	300.000	23.39	33.11	26.31
1900	7.424	300.000	20.56	34.44	24 74
1901	6.478	305.000	18.06	29.70	21.24
1902	6.572	310.000	17.91	30.18	21.20
1903	6.705	317.000	18 02	29.82	21.15
1904	6.819	325.000	17.66	30.19	20.98

Between 1879 and 1900 there were 407 deaths from yellow fever. The greatest number of deaths from that disease occurred in 1897, when 298 victims succumbed. There were no deaths from the pest in ten years of that period, and there were none in 1900-1903.——President Charles Janvier of the citizens' committee set a splendid example when arrested for failure to screen his cistern. He explained that he had oiled it, thinking that more effective. Naturally he was set free, but on hearing some adverse criticism he asked to be re-arraigned and fined, which was done.——An unfortunate controversy is being waged between some members of the profession on one side and the Louisiana Board of Health and New Orleans Board of Health on the other. There is talk that the executive officer of each board will be asked to resign. The subject of the controversy is the concealment of the early cases.——In an interview Dr. John Guiteras of Havana said that it was hardly to be expected that the infection could be stamped out before frost. It was under control, but had gone too far to exterminate. He predicted that this was the last epidemic of yellow fever that would ever appear in the United States. In a later interview he predicted that the disease would be stamped out before frost, as the situation has become distinctly better.——At a mass meeting on August 23, called by Dr. Leaeh of arsenic fame, 300 people denounced the press, the physicians and all health officials, and promised to continue doping with arsenic. This shows clearly that Dr. Leach's presence in New Orleans at this time is wholly harmful and that his desire for notoriety is decidedly uppermost among his motives.——One case discovered August 26 was a patient recently arrived from Gulfport, Miss. Following this up, the authorities found three existing but unreported cases at Gulfport.——The public schools will not open until October 2.——Leeville on August 23 reported 177 cases of yellow fever and 200 cases of dengue.——Arrangements have been made for a drastic campaign of extermination against the disease at the various infected points throughout the state.——On August 29 35 new cases of fever were discovered in Bayou Barataria, Jefferson parish. The tour of investigation had not then been completed. Deaths had occurred and there were neither physicians nor nurses. A relief party was organized at once with physicians, nurses, medicines and supplies to assume charge of the situation.

Other States.

Arkansas.—The State Board of Health on August 21 quarantined against the entire state of Louisiana.

Illinois.—At the end of one week of train inspection at Cairo it is reported that 1,000 passengers had been inspected and 2,000 health certificates issued, seven physicians being kept busy.——Inspectors of the United States Public Health and Marine-Hospital Service have been traveling on trains running from Louisiana and Mississipi to Cairo. On August 23 Dr. Egan, secretary of the Illinois Board of Health, ordered this stopped. Dr. Egan later amended the order to admit such federal inspectors as are yellow fever immunes.——Brownsville on August 23 reported a case of yellow fever from Shreveport, La., but this was later announced as a false report.

Indiana.—Jeffersonville on August 17 had a yellow fever scare regarding the towboat *Sprague*, which was thought to be infected, having had illness on board since it left New Orleans. The health authorities ordered the boat to proceed to its destination, Cincinnati, on pain of the crew's incarceration in the pest house.——The Crawfordsville case, when seen by Dr. A. M. Brighton of Indianapolis, proved to be acute malarial fever.——Dr. Nelson W. Brayton, of the Indianapolis health office and son of Dr. A. H. Brayton, is in New Orleans studying yellow fever.——Michigan City had a small scare in the shape of an acute illness of a woman recently arrived from Arkansas.——Evansville had a supposititious case of yellow fever, but the attending physician and health officer agreed in a diagnosis of typhoid.

Kentucky.—Paducah says that if the State Board of Health persists in refusing permission to quarantine, the City Council will pass a quarantine ordinance in defiance of the board. The town has a new board of health with Dr. S. H. Brothers as president. The dispatch adds: "The old board was against a quarantine."——Jaekson, Tenn., has a quarantine against Fulton, Ky., that is very annoying to the latter town.——Members of the board of health of Paducah have been charged by reliable eye-witnesses with selling certificates of health without embarrassing questions to all-comers at $1 each.——Dr. A. T. McCormaek, assistant secretary of the State Board of Health addressed the City Council of Paducah, arguing against a quarantine.——The state board issued an order forbidding the Illinois train inspectors to continue their practice of discharging on Kentucky soil all passengers not admissible to Illinois.——Louisville had a small scare over a suspicious case which proved not to be yellow fever.——The city council of Henderson refused to appropriate any money for the board of health to use in preparing the city for possible infection.——The latest word from Paducah is to the effect that every one there, the physicians and board of health excepted, desires a quarantine.

Michigan.—A case of yellow fever was reported at Crockery, Ottawa County, the patient being a man just arrived from New Orleans.

Mississippi.—The early cases of yellow fever at Mississippi City were so light that the physicians mistook them for malaria, so for nearly a month the focus was unrecognized. Of course Governor Vardaman threatened the "extreme penalty" for these physicians if neglect of duty on their part could be proved. Credit for discovery of the case is claimed for Dr. Sanders and others of a party of Alabama health authorities who were making an inspection tour of the Gulf coast of Mississippi. The stegomyia was also found in large numbers.——Most of the remainder of Mississippi has quarantined against its gulf coast towns.——Vicksburg has raised its absolute quarantine against Memphis.——Secretary Hunter of the Mississippi board of health has asked physicians to form local health associations in every county and to hold daily meetings for the discussion of suspicious cases.——Natchez, which "has been tightly bottled up with a shotgun quarantine ever since the infection of New Orleans was reported," on August 26, admitted that it had nine undoubted cases of yellow fever and three cases of suspicious illness. The news caused a panic and the pressure to escape from the city became tremendous. The Marine Hospital Service arranged for special through trains for the north for all who wished to leave and anticipated the departure within 24 hours of fully 2,000 persons.——Gulfport, on August 27, reported three new cases of yellow fever, having already during the week admitted the existence of three other cases.——Jackson, with neighboring towns and counties, has quarantined against Memphis, because a woman just arrived in New Orleans from Memphis, developed the disease.——Mississippi City has been placed under martial law by Governor Vardaman.

Missouri.—The case of yellow fever at Gregory, on the Mississippi River just below Keokuk, proved fatal. The patient was a Greek, said to have come to Gregory from Natchez, Miss. Boats touching at Gregory are not permitted to land in Keokuk.

Ohio.—It was attempted to create some excitement in Cincinnati last week over the approach up the Ohio River of the steamers *Sprague* and *J. B. Finley*, both reported to have yellow fever aboard.

Tennessee.—Search for the stegomyia at Chattanooga is reported to have demonstrated its absence at present.——Memphis reports local railway passenger business at a standstill, while through traffic keeps up pretty well.—On August 22 the Chattanooga quarantine was made still more stringent.

Texas.—A detention camp has been established on Red River for the protection of north Texas.——Orange asked that passenger traffic with Louisiana be forbidden. Here and elsewhere objection is made to the expense of detention camps, it being alleged that Louisiana at its borders should bear the detention expense of its outgoing citizens.——Galveston has been undergoing the most thorough cleaning that it has had in years, if ever.——At San Antonio $3,000 was subscribed by ward canvass and forwarded to the state health officer to aid in the quarantine work for which there is an utterly inadequate appropriation.

CANADA.

Tuberculosis Sanitarium for New Brunswick.—Physicians of New Brunswick are reported to be making an effort to obtain a sanitarium for consumptives. The St. John Medical Society has appointed a committee to collect information and to bring the subject properly before the people. It is hoped that the government will act in the matter at an early date.

FOREIGN.

Plague in the Argentine Republic.—A report from Buenos Ayres states that six cases of plague were discovered recently in Tucman.

Typhoid Fever in New Zealand.—It is reported that there have been a number of outbreaks of typhoid fever among the Maori settlements in North Island.

Typhus Fever in Ireland.—An alarming outbreak of typhus fever is reported from Donegal. Nine families have been attacked and one death is reported. The "contacts" have been isolated.

The Birth Rate in New South Wales.—According to the government statistician's report for June, 1,246 children were born in this province during the month. The excess of births over deaths was 785.

Jenner Memorial Tablet.—On August 9 the London County Council erected a tablet on the house in which Edward Jenner, the discoverer of vaccination, lived during 1803. The tablet is of green encaustic ware.

Yellow Fever in Brazil.—Acting Assistant-Surgeon Stewart reports that yellow fever is prevalent in Para. An Italian opera company there has lost so many members that it will probably be forced to disband.

Plague in Japan.—It is reported that, after a period of quiescence, plague has again made its appearance in Tokio and that the disease seems to be spreading in spite of the rigid quarantine which is enforced.

Asiatic Cholera in Prussia.—A report from Dantzig states that two Russians recently died in Culm, West Prussia, of a disease which was diagnosed as Asiatic cholera. The authorities declare that there is no danger of the disease spreading.

Medical Bequests by Physicians.—The Journal has chronicled lately a number of bequests by physicians for medical purposes. The latest is from Dr. Toporski of Posen, who left $200 to the local fund for conducting the campaign against tuberculosis.

Reduction of Rates on French Railroads for Members of Tuberculosis Congress.—It is officially announced that membership in the International Antituberculosis Congress, to be held at Paris, October 2-7, entitles one to a reduction of 50 per cent. on the railroads in France.

Second International Milk Congress.—This congress will convene at Berlin October 16-19, and will represent every phase of the milk question. There are to be six sections, one devoted exclusively to legislative measures in regard to the production, distribution, etc., of milk.

Public Disinfecting Plant for Tasmania.—The Tasmania local board of health held a conference June 28 to consider the question of erecting a public disinfecting plant in accordance with the suggestions of the health officer, Dr. Elkington. It is estimated that the capital cost of such a plant would be about $5,000.

Garre Goes to Breslau.—Karl Garré, professor of surgery at Königsberg, has accepted a call to the chair of surgery at Breslau left vacant by the death of Mikulicz. Garré was born Dec. 12, 1857, and is thus in his forty-ninth year. His works on surgery of the nerves, vessels, larynx and alimentary canal have been especially noteworthy.

Celebration of Lucae's Seventieth Birthday.—The present and former assistants of Prof. August Lucae of Berlin presented him with a *Festschrift* in honor of his seventieth birthday, August 24. The famous otologist also received many messages and telegrams of congratulations from friends and scientific bodies at home and abroad.

Smallpox in Chili.—It is reported that there is a severe outbreak of smallpox at Santiago. According to *Public Health Reports*, this is not anything unusual and is probably only a recrudescence of a disease which is always present there and is due doubtless to the cold weather which has been prevalent recently in South America.

Tests of Sight and Hearing for Government Employes.—The German department of public works has ordered that every employé throughout the department is to be tested for vision and hearing in the course of the next five years. Those found defective are to be transferred to posts of lesser responsibility or pensioned out of the service.

Physicians Must Write Legibly.—The authorities in the duchy of Hesse, Germany, have notified druggists throughout the country that when a physician's prescription is written illegibly—as frequently happens—the druggist is not to waste any time guessing at the writer's meaning, but to require from the physician a legible copy or indication of the contents.

Jubilee of the University of Melbourne.—The University of Melbourne attains its jubilee next year and preparations are already in progress to celebrate the event. It has been proposed to erect a pavilion on the cricket ground as a suitable memorial and a committee has been appointed to secure funds. It has been estimated that about $4,000 will be necessary, and of that amount about $2.000 has been promised.

Warning Against Massage and Hypodermics by Irregulars.—The Board of Public Health at Rome has issued a notice warning the public against the dangers of massage, hypodermic injections and operations of any kind by only partially qualified persons, such as nurses, midwives and others. It seems that such practices are becoming prevalent in these circles, and the public is warned of the possible danger in incompetent hands.

Prize for Work on Trachoma.—The Journal announced some time ago that the government of Hungary had offered a prize of about $500 for the best work offered in competition on the subject of trachoma. The prize was divided and half given to Professor Kuhnt of Königsberg for his essay on the subject of treatment of trachoma. The other half of the prize was not awarded, as no suitable articles on the pathology of the disease were received.

Suggestion for Prize for Remedy for Tuberculosis.—One of the members of the Brazilian parliament recently urged the adoption of a resolution endowing a prize of over a million dollars, to be awarded to anyone discovering a sovereign remedy for tuberculosis. It will be remembered that the French *Académie de Médecine* has an endowment representing an annual income of several thousand dollars, which is awaiting the discoverer of such a remedy.

The Brisbane Hospital.—The financial condition of the Brisbane Hospital is reported to have been very unsatisfactory for some time. At the end of June the executive committee found themselves without funds and in debt for a large sum for current expenses, besides the amount due the government as interest on a loan of $15,000. Finding themselves in this position the members of the committee decided to resign in a body, and the resignations were handed to the home secretary July 10.

New York's Board of Public Health from the German Point of View.—One of the meetings of the Berlin Medical Society this summer was given up to a description of the scope and workings of the New York Board of Health. The speaker was Prof. A. Wassermann, and he drew a very complimentary picture of the great work accomplished by the board, contrasting it with the apathy displayed by the city authorities of Berlin, who, he stated, are far behind the times in the matter of municipal protection of the public health.

A Medical Prince and the Wily Irregular.—A certain Grundlach of Munich recently published a pamphlet denouncing mercurial treatment of syphilis. He represented to Prince Ludwig Ferdinand of Bavaria, who is a registered and practicing physician there, that certain of the medical authorities, citing them by name, indorsed his views. On this representation the prince wrote a complimentary preface to the work. The local medical society at once interviewed the prince, who has since publicly retracted his statements, explaining that they were obtained under false pretenses.

Decline of Cholera in Russia.—The *St. Petersburg med. Wochft.* for August 5 states that it has been officially announced that not a single case of cholera has been known to occur in Russia since April. The suspicious cases at Lodz, Wilna, Tomsk and elsewhere proved to be some other disease on microscopic examination or on the evidence of the course of the disease or the postmortem findings. Sanitary precautions are still maintained along the frontier, but the local campaigns inaugurated at various points have been suspended and the physicians recalled to their posts.

Mortality Among Physicians.—The *Deutsche med. Wochft.* summarizes in a recent issue the article published in The Journal on "The Mortality of American Physicians." It cites in addition the average length of life among the physicians of France as 64.75 years. In the northern regions the average was only 58.3, while it reached nearly 71 in the Albi and Gaillac districts. An unusually large proportion of the medical men of France are now in the seventies. Only one French physician in the last two centuries lived to be over 100, and only 2.16 per cent. passed the ninety mark.

Quinin Prophylaxis of Malaria in Italy.—The *Riforma Medica* for July 22 states that at the last official conference of the Society for the Study of Malaria, Professor Celli related that the number of persons "prophylaxized" with quinin in the Roman district has increased from 1,175 to 30,000 in the last three years, while the number of cases of malaria treated in the hospitals has decreased from 6,000 to less than 3,000 during this time. In the Italian army the morbidity from malaria has dropped from 67 to 10 per cent., and among the railway employes from 69 to 33 per cent. The general mortality has fallen from 13,000 to 7,000 since the legislation was adopted providing free quinin for the people.

Chair of Protozoology in the University of London.—A chair of protozoology has been founded in the University of London. The secretary of state for the colonies offered the university a sum of $35,000 for the establishment of the chair. The *British Medical Journal* states that of this amount $1,000 is a contribution from the Rhodes trustees and that $25,000 represents a moiety of a grant originally made from the Tropical Diseases Research Fund to the Royal Society for the Promotion of Research Work, and surrendered by that society for the purpose of establishing this chair in the university. The university senate has decided to devote the whole amount to defraying the salary of a professor and to set aside a further sum of $1,000 a year for assistants and laboratory expenses.

Organization of the Profession in Germany.—The conflict between the sickness insurance companies and their medical officers over the demand of the latter for increased remuneration when the period of treatment was doubled in length, has been chronicled again and again in these columns. One of the few places where the physicians were supposed to have lost the battle was at Mülheim, where the companies imported enough "strike breakers" to answer their purpose and ignored their former medical officers completely. Time has shown, however, that the medical men willing to serve as strike breakers were below the standard of scientific acquirements required for the positions. One by one they have had to be dismissed and the terms of the former medical officers accepted, followed by their reinstatement.

Political Attitude of Physicians in Russia.—We learn that the editor of the Journal of the National Pirogoff Association, Dr. Popoff, has been held responsible for the revolutionary resolutions passed at the last conference and mentioned in The Journal at the time. The publication was suspended by the authorities and the editor placed under surveillance. The collaborators on the publication and more than fifty of the physicians of Moscow have since voluntarily proceeded to the authorities and announced that they share the views of the editor-in-chief, that they assume equal responsibility with him for the resolutions adopted and for the transactions and comments published in the journal. An all-Russian congress of odontology was recently held at St. Petersburg, and seventy of the members also publicly proclaimed their unqualified endorsement of the revolutionary resolutions passed by the Pirogoff congress.

Sanatoria for Lung Affections in Germany.—The rapid growth of the sanatorium movement in Germany is seen by the statistics recently published There were only three in 1892, and only 13 as late as 1897, while now there are 68 official and 27 private institutions of the kind. The Red Cross took the lead in the movement, but was soon seconded by the societies insuring against sickness. The latter devoted special attention to the curable cases of pulmonary affections, and 11 of these regional sickness insurance societies now have sanatoria of their own, as also a number of cities and communities, including Berlin, Leipsic, Saarbrucken and Wittich. The sanatorium movement was the logical consequence of the compulsory insurance of wage-earners against sickness. The education in hygiene acquired by those taking a course at a sanatorium and sown abroad by them afterward throughout their environment is one of the greatest benefits of the movement.

Infectious Diseases in Australia.—Though scarlet fever was considerably less prevalent in Sydney in 1904 than in 1903, the incidence continued high, and amounted to 2.4 per 1,000 of the estimated population. The recorded monthly number of attacks showed very little fluctuation until August, when it began to rise, reached a maximum of 188 in October, and thereafter fell to 136 in December; 530 males were attacked, as against 831 females. Between December 8 and 24 a localized outbreak of scarlet fever, numbering 23 cases, occurred in adjoining portions of the three contiguous boroughs of Ashfield, Burwood and Drummoyne. This was confined to the customers of a dairy situated in Drummoyne. The outbreak was less sudden in its manifestation than is usually the case with milk epidemics. Fourteen deaths occurred from scarlet fever, corresponding to a mortality of 0 02 per 1,000 of the estimated population of the metropolis. This death rate is the lowest recorded since the year 1900. The case fatality equaled 1.03 per cent. of notified cases, and is lower than that of any year since 1898. More attacks of diphtheria were notified than in any previous year. The number of reported cases was 738, which is equal to an attack rate of 1.43 per 1,000 of the estimated population.

Correspondence

Cats as a Factor in the Propagation of Infectious Diseases.

Worcester, Mass., Aug. 2, 1905.

To the Editor:—A research study is being made at Clark University in reference to the possible causal relation of cats as a factor in propagating infectious diseases, especially those of children.

I wish to make an appeal through your columns to the readers of The Journal who have observed any communication of disease from cats to human beings and to ask them kindly to put me in possession of such facts. This would aid materially in deciding to what extent the cat may be a source of danger in the transmission of communicable diseases.

C. A. Osborne, M.D.

Association News

Next Annual Session.

The next annual session of the American Medical Association will be held in Boston, Mass., June 5 to 8, 1906.

The Card Index and Directory.

Two weeks ago we printed in our advertising pages a blank for information for the Biographical Card Index and for the American Medical Directory. While many have filled out and returned this blank, the number who did so is comparatively few. We include the blank in our advertising pages this week —see page 31—and hope those who have not already done so will fill in the blank, and return it at once. The more coöperation we get in this work the less expense will be attached to it. The ultimate object is not a commercial one, but the good of the profession. It should be understood that the information asked for is primarily for the Biographical Card Index; only a portion will be used for the directory.

Marriages

Sandy B. Harrell, M.D., Nashville, Tenn., to Miss Eva Stockdell, at Atlanta, Ga.

Charles F. Voyles, M.D., Murdock, Ill., to Miss Hazel Wagner of Newman, Ill., August 16.

Charles Gordon Abell, M.D., to Miss Grace Fish, both of Enosburgh Falls, Vt., August 30.

Willard C. Selover, M.D., to Miss Minnie Carson Hill, both of Stanley, N. Y., August 16.

Willard Earl Quillian, M.D., Atlanta, Ga., to Miss Laurie May Cassilly of St. Louis, August 15.

John Steele Sweeney, M.D., Chicago, to Miss Grace Hamilton of Two Rivers, Wis., August 16.

Walter E. Murphy, M.D., Cincinnati, to Miss Mathilde Calhoun of Covington, Ky., August 22.

William N. Stein, M.D., Shanandoah, Pa., to Miss Maggie D. Martin of Blair Hill, Coatsbridge, Scotland, August 23.

Deaths

Jared E. Cone, M.D. State University of Iowa Medical Department, Iowa City, 1882, a member of the American Medical Association, Ohio State Medical Society, Ohio Pediatric Society, treasurer and former president of the Mahoning County Medical Society; coroner of Brule County, S. D., from 1883 to 1886; surgeon to the Mahoning Valley Hospital; one of the most prominent practitioners of Youngstown, Ohio, died at the Mahoning Valley Hospital August 24, from rheumatic endocarditis, after an illness of four weeks, aged 55.

Marcellus H. Felt, M.D. Dartmouth Medical School, Hanover, N. H., 1877, treasurer of the New Hampshire Medical Society for fifteen years and last year its president; a member of the Hillsboro Bridge school board for twenty years; representative in the legislature in 1893 and 1894; state senator in 1902; medical referee for the district, died at his home in Hillsboro Bridge, August 21, aged 60.

Charles H. Andrus, M.D. College of Physicians and Surgeons in the City of New York, 1845, surgeon of the One Hundred and Twenty-Eighth New York Volunteer Infantry, and brigade surgeon in the Civil War; coroner of Dutchess County, N. Y., in 1871; for many years a practitioner of Poughkeepsie, died at the home of his son in Enfield, Mass., August 12, aged 82.

Will Rininger, M.D. Marion-Sims College of Medicine, St. Louis, 1899, a member of the American Medical Association and the St. Louis Medical Society; assistant professor of nervous diseases and internal medicine in the Marion-Sims-Beaumont College of Medicine, St. Louis, and a young man of bright promise, was fatally burned by an explosion of benzine at his home, August 22, and died forty-five minutes later, aged 31.

Franklin Gillespie, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1889, of Oxford, Pa., a member of the American Medical Association, was struck by a train at Barnsley, Pa., while making a professional call, August 23, and died a few hours later, as he was being carried into his house, aged 45.

Robert W. Hinds, M.D. Vanderbilt University Medical Department, Nashville, Tenn., 1902, assistant city bacteriologist and chemist of Atlanta, Ga., and assistant secretary of the State Board of Health, died at his home in Atlanta August 18, from typhoid fever, after an illness of six weeks, aged 26.

William D. Nutter, M.D. University of Vermont Medical Department, Burlington, 1887, of Malden, Mass., and city physician from 1892 to 1895, died on Bustin's Island, Casco Bay, Maine, August 18, after an illness of nearly three years, from diabetes, aged 45.

James Henry Salisbury, M.D. Albany (N. Y.) Medical College, 1850, an early research worker on the germ theory of disease, died at his country home in Dobbs' Ferry, N. Y., August 28, from cerebral hemorrhage, after an illness of four years, aged 81.

John S. Morey, Jr., M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1877, some-time postmaster of Royersford, Pa., died at his home in that place August 18, after a long illness, from cerebral hemorrhage, aged 59.

Joseph Plumb Cochran, M.D. College of Physicians and Surgeons in the City of New York, 1877, a native of Oroomiah, Persia, who built the first hospital in Persia, died recently at his home in Oroomiah, from typhoid fever, aged 50.

Joseph Baldwin Amos, M.D. University of Maryland School of Medicine, Baltimore, 1854, one of the oldest practitioners of Pennsylvania, died at his home in Chanceford, York County, Pa., August 20, after a prolonged illness, aged 79.

John A. Morton, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1862, assistant surgeon of the Twenty-fourth Maine Volunteer Infantry during the Civil War, died at his home in Bethel, Maine, August 17, aged 71.

George B. Nichols, M.D. Castleton, (Vt.) Medical College, 1852, said to have been the oldest practitioner in Allegan County, Mich., died at his home in Martin, Mich., August 15, after an illness of several weeks, aged 72.

Edward Erskine, M.D. Michigan College of Medicine and Surgery, Detroit, 1891, a member of the American Medical Association, and an old resident of Rogers City, Mich., died at his home in that city, August 12.

Charles W. Fordyce, M.D. College of Medicine University of Southern California, Los Angeles, 1905, an interne in the German Hospital, Los Angeles, was drowned while swimming in the Kern River, August 20.

S. B. Hotchkiss, M.D. Bellevue Hospital Medical College, New York City, 1871, who had been an invalid for seven years, died suddenly at his home in Edinboro, Pa., August 16, from angina pectoris, aged 63.

Jacob W. Mooar, M.D. Dartmouth Medical School, Hanover, N. H., 1862, surgeon during the Civil War and an old practitioner of East Manchester, N. H., died at the Elliott Hospital, Manchester, August 12.

Marion Wells Thomas, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1898, a medical missionary, died at her station on Bahrein Island, Persian Gulf, recently, aged 31.

Charles E. Bushnell, M.D. University of Vermont Medical Department, Burlington, 1869, died at his home on Smith Hill, Winsted, Conn., August 19, from heart disease, after a long illness, aged 61.

John Gorin Harvey, M.D. University of Louisville (Ky.) Medical Department, 1862, died at his home in Blue Mound, Ill., August 16, from general debility, after an illness of one year, aged 66.

Henry W. Giles, M.D. Albany (N. Y.) Medical College, 1874, who never practiced medicine, but devoted himself to his profession of music, died at his home in Albany June 5, after a long illness.

John M. McGroth, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1858, of Philadelphia, surgeon during the Civil War, died at Delair, N. J., August 22, aged 71.

Edmund W. Holmes, M.D. Department of Medicine of the University of Pennsylvania, 1880, of Philadelphia, died suddenly from heart disease in a street car in that city, August 28.

Augustin S. Clark, M.D. Starling Medical College, Columbus, Ohio, 1860, one of the oldest physicians of Washington County, Ohio, died at his home in Beverly, August 18, aged 84.

Lorenzo Traver, M.D. Albany (N. Y.) Medical College, 1857, from 1861 to 1868 acting assistant surgeon, United States Navy, died recently at his home in Providence, R. I., aged 70.

Lewis W. McCawley, M.D. Barnes Medical College, St. Louis, 1900, of Kell, Ill., was drowned while fishing in the Little Wabash River near Clay City, August 17, aged 31.

Charles N. Frederick, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1865, of Valley Forge, Pa., died at Strafford, Pa., August 19, aged 66.

Sarah B. Fleming, M.D. College of Medicine, Syracuse (N. Y.) University, 1873, died at her home in Coronado, Cal., August 25, after a long illness, aged 74.

Louis Gustave Guibert de la Mache, M.D. Ohio Medical University, Columbus, 1903, died from articular rheumatism at his home in Arnold, W. Va., August 15.

Ferdinand S. Overfield, M.D. University of Heidelberg, Germany (Years of Practice, Illinois, 1887), died at his home in Brookville, Ill., August 16, aged 76.

Seth Grout, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, died suddenly at his home in Auburn, Kan., August 5, aged 72.

William J. Andrew, M.D. Manitoba Medical College, Winnipeg, 1903, of Winnipeg, died at the Winnipeg General Hospital, August 20, from scarlet fever.

William D. Pettus, M.D. University of Nashvile Medical Department, 1868, died at his home in Republic, Ala., August 14, after a lingering illness, aged 62.

David A. Baldwin, M.D. New York University, New York City, 1849, died at his home in Englewood, N. J., August 11, from senile debility, aged 79.

John Gray Hughes, M.D. Jefferson Medical College, Philadelphia, 1853, died at his home in Altoona, Pa., from heart disease, August 23, aged 77.

Edward W. Doty, M.D. Long Island College Hospital, Brooklyn, N. Y., 1886, formerly of Paterson, N. J., died in Dover, N. J., August 20, aged 49.

George M. Rice, M.D. Hospital College of Medicine, Louisville, 1894, died from tuberculosis at his home in Powersburg, Ky., August 20, aged 38.

Tilghman D. Koons, M.D. Pennsylvania, 1878, while despondent, shot and killed himself at his home in Philadelphia, August 22, aged 52.

John Ebeling, M.D. New York City, 1882, of New York City, died suddenly, August 20, while on his way to Pine Ridge, N. J.

Deaths Abroad.

K. Wernicke, M.D., one of the most prominent neurologists of the day, succumbed recently to the immediate consequences of a bicycle accident while on a tour in Thuringia, aged 57. His labors to supply a scientific foundation for psychiatry in the pathology of the brain have accumulated a wealth of data which will supply a field for research for many years to come. He was one of the principal creators of the modern anatomy of the brain, and was the originator, at 26, of the present conception of aphasia and its pathologic basis. Fuchs styles this "the first work that bridged the gap between mental disease and morbid processes in the brain." Wernicke was the first to describe the pupil reaction in hemianopsia and the processes in hemorrhagic polioencephalitis. He studied medicine at Breslau and was assistant to Neumann and Westphal for a time, was appointed professor at Breslau in 1890 and at Halle in 1904. History records that he was the first to locate a neoplasm in the brain and systematically proceed to order its removal. This was as long ago as in 1882, and he is thus said to be the founder of surgery of the brain.

P. Schech, M.D., professor of laryngology at Munich, died July 1, aged 60. He bequeathed $500 to the local endowment for the widows and orphans of physicians.

W. Flemming, M.D., professor of anatomy at Kiel, noted for his pioneer research on cell development and pathology, died at Kiel, August 5, aged 62.

B. Honsell, M.D., professor of surgery at Tübingen, died at Carlsruhe, July 22, after a long illness, aged 35.

E. Schonberg, M.D., professor of gynecology and pediatrics at Christiania, died July 20.

F. Fischer, M.D., professor of surgery at Strasburg, died July 9, aged 50.

L. D. Moussons, M.D., professor of gynecology at Bordeaux, died July 7.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Aug. 26, 1905:

Kennedy, James M., asst. surgeon, ordered to accompany 17th infantry from Presidio of San Francisco, to Fort McPherson, Ga., then return to his station.

Baker, Frank C., asst. surgeon, ordered to proceed with infantry team from Fort Sheridan, Ill., to Sea Girt, N. J., to take part in national match.

Krebs, Lloyd Le R., asst.-surgeon, assignment to duty in the United States Transport Service revoked.

Porter, Ralph S., asst.-surgeon, assigned to temporary duty as transport surgeon on the *Buford* during the next voyage to Manila, where he will report for assignment in compliance with orders heretofore issued.

Metcalfe, R. F., asst.-surgeon, assigned to temporary duty as surgeon on the *Buford* during the next voyage of that transport from Manila, P. I., to San Francisco, Cal., and on arrival at the latter place to report by telegraph to the Military Secretary of the Army for orders, as heretofore directed.

Boyer, Perry L., asst.-surgeon, granted one month and eight days leave of absence, with permission to apply for two months' extension.

Yost, John D., asst.-surgeon, advanced to rank of captain, to date from July 2, 1905.

Rutherford, H. H., asst.-surgeon, advanced to rank of captain, to date from Aug. 16, 1905.

Crabtree, Geo. H., asst.-surgeon, will make one visit per day from Fort Jay, N. Y., to Fort Wood, N. Y., during the illness of the surgeon at that post.

Kennedy, Jas. M., asst. surgeon, granted 30 days' leave of absence, to take effect on completion of duty with troops to Fort McPherson, Ga, with permission to apply for thirty days' extension.

Duncan, Wm. A., asst.-surgeon, relieved from duty at Fort Leavenworth, Kan., and ordered to Manila, P. I., for duty in Philippines Division.

Harris, Jesse R., asst.-surgeon, leave of absence further extended thirty days.

Carroll, James, asst.-surgeon, detailed to represent medical department of the Army at the thirty-third annual meeting of the American Public Health Association, to be held at Boston, Mass., Sept. 25 to 29, 1905.

Hansell, H. S., asst.-surgeon, ordered, on departure of Company B 9th Infantry from Pekin, China, to proceed to Manila, P. I., and report to commanding general, Philippines Division, for assignment to duty.

Shellenberger, James E., contract surgeon, granted leave of absence for one month.

Long, Charles J., dental surgeon, left Fort Snelling, Minn., on leave of absence for one month and seven days.

Peddicord, Harper, contract surgeon, departed from Vancouver Barracks, Washington, on three months' leave of absence.

Woods, O. W., contract surgeon, will proceed from Vancouver Barracks, Washington, to Fort Walla Walla, Washington, for duty, to accompany headquarters band and Troops A, B and C, 4th Cavalry, to San Francisco, Cal., on completion of which he will return to his proper station.

Whitney, W., contract surgeon, left Columbus Barracks, Ohio, with detachment of recruits en route to Fort McDowell, Cal.

Stone, Frank P., dental surgeon, leave of absence extended seven days.

Slater, Ernest F., contract surgeon, left Fort Hancock, N. J., on leave of absence for seven days.

Girard, Joseph B., asst. surgeon general, ordered to proceed to Manila, P. I., for duty in Philippines Division.

Navy Changes.

Changes in the Medical Corps U. S. Navy for the week ending Aug. 26, 1905:

Peck, A. E., P. A. surgeon, commissioned P. A. surgeon with rank of lieutenant from March 27, 1904.

Russell, A. C. H., surgeon, detached from the *Newark* and ordered to the Bureau of Medicine and Surgery, Navy Department.

Stepp, J., P. A. surgeon, detached from the *Topeka* and ordered home to wait orders.

Wood, F., pharmacist, retired, detached from the Naval Medical School, Washington, D. C., and ordered home.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Aug. 23, 1905:

Stoner, J. B., surgeon, granted seven days' leave of absence from Aug. 9, 1905.

Stansfield, H. A., P. A. surgeon, directed to report at Bureau.

Stansfield, H. A., P. A. surgeon, granted leave of absence for one month, or so much thereof as may be necessary, on account of sickness.

Gustetter, A. L., acting assistant surgeon, granted leave of absence for ten days from Aug. 16, 1905.

Stevenson, J. W., acting assistant surgeon, directed to report at bureau for consultation.

Troxler, R. F., pharmacist, granted seven days' leave of absence from Aug. 16, 1905, under paragraph 191 of the regulations.

Hall, L. P., pharmacist, leave of absence for thirty days, amended to read twelve days from Aug. 4, 1905.

BOARD CONVENED.

Board to meet at San Francisco, Aug. 24, 1905, for physical examination of Engineer Maxwell, Revenue Cutter Service. P. A. Surgeon J. M. Holt, chairman. Acting Asst.-Surgeon A. Weeks, recorder.

Book Notices

First Aid for Persons Overcome by Gas. Cloth. Pp. 15. With 15 illustrations. Philadelphia: United Gas Improvement Co.

This little booklet gives valuable instruction in caring for and resuscitating individuals overcome by gas. The methods of performing artificial respiration, etc., are shown by means of excellent illustrations. While primarily intended for the laity, it should be a valuable addition to the physician's library. For a gas company to issue such a book is distinctly to be commended, being in line with the discussion quoted in The Journal July 15, 1905, page 211.

Frames and Lenses. A Practical Treatise for Optometrists. Illustrated. By R. M. Lockwood. Paper. Pp. 87. New York: Frederick Boger Publishing Co.

This book describes the manufacture of lenses, the manner of surface polishing and of testing the uncut lenses. Two chapters are devoted to facial measurements and emphasis is laid on the importance of accuracy. The little book will interest any one who prescribes glasses.

Select Methods in Food Analysis. By Henry Leffmann, A.M., M.D., Ph.D., and William Beam, A.M., M.D., F.I.C. With 55 Illustrations. Second Edition. Revised and Enlarged. Cloth. Pp. 396. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Co. 1905.

One of the most popular of the series of analytical books of Dr. Leffmann now in the second edition. Revised and brought up-to-date, having largely drawn on the excellent work now done in this country in the line of food analysis by government and state and by local boards and associations. Many additions are noted, such as detailed descriptions of special arrangements for polarimetry, distillation and extraction, new processes for detection of colors used as substitutes for natural colors of fruits and eggs; improved methods for detection of formaldehyd and saccharin; rapid methods for examination of vanilla and lemon essences; for determining fat in condensed milk and cereal foods, boric acid in fruit juices, together with analytic data concerning preserved fruits and their preparations. While no information concerning the lines in regard to adulteration or discussion of food standards are given, the U. S. Government standards are included as official interpretation of analytic data.

Outlines of Inorganic Chemistry. By F. A. Gooch and C. P. Walker. Cloth. Pp. 514. Price, $1.75 net. New York: The MacMillan Co. 1906.

The subject is presented through such experimental work as has long been tested in college and in such relation as to facilitate drawing the deductions essential to a proper comprehension. The consecutive experimental development of the principles on which systematic chemistry rests is considered, together with the electrical phenomena and ions and the constitution of the acids, bases and salts from the ionic point of view, and the thermal relations based on the recognition of equivalents, electrical, chemical and thermal. The molecule in its relation to the atom, in the light of the kinetic theory of gases, in the theories of Van t'Hoff and Werner, the phenomena of solutions, the electrolytic theory of dissociation and the modern conceptions of the ions are all discussed. The elements, their compounds and properties are considered in accordance with the periodic system. Graphic symbols are used because their real functions for co-ordinating facts are rarely misinterpreted. The ionic terminology is employed and the functions of ions are pointed out, but the extreme developments of free ions have not been introduced.

Manual of Gynecology. By D. Berry Hart, M.D., F.R.C.P.E., F.R.S.E., Lecturer on Midwifery and Gynecology School of the Royal College, Edinburgh, and A. H. Freeland Barbour, M.A., B.Sc., M.D., F.R.C.P.E. F.R.S.E., Lecturer on Midwifery and Diseases of Women, School of the Royal Colleges, Edinburgh. With 12 Lithographs and 359 Woodcuts. Sixth Edition. Cloth. Pp. 736. Price, $6.00. Chicago: W. T. Keener & Co. 1905.

In this, the sixth edition of this manual of gynecology, the whole text has been carefully revised and brought up to date. The subject matter is well arranged and the illustrations are excellent. The appendix includes a chapter on preparation for and technic of abdominal section in gynecologic cases, and a practical method of taking histories in these cases. There is also a very complete list of works on gynecologic subjects in English, German and French, with authors, which should facilitate reference work.

A Hand-Book of Nursing. Revised Edition. For Hospital and General Use. Published under the Direction of the Connecticut Training-school for Nurses. Cloth. Pp. 319. Price, $1.25. Philadelphia: J. B. Lippincott Co. 1905.

This book is distinguished from some other works on the same subject by providing instruction for hospital nurses in preparation for their work later in private families. The nurse's relation to the patient, to the family and to the physician are clearly set forth. The chapter on family hygiene, while not exactly pertaining to nursing, is of practical value.

Miscellany

THE LANE LECTURES.

INTERESTING ACCOUNT OF THIS SERIES OF LECTURES AT COOPER MEDICAL COLLEGE, SAN FRANCISCO.

The Lane Lectures for 1905 were delivered during the week beginning August 13 by Sir Patrick Manson, the eminent authority on tropical diseases, who took for his subject some of the more important aspects of tropical medicine. Sir Patrick began his first lecture by remarking that thirty years ago there was no tropical medicine to speak of, and cited various important diseases discovered since that time to substantiate this view. He pointed out the importance of helminthology in the study of disease, and suggested that it served as an excellent introduction to the study of the more complicated bacteriology. He spoke of the increasing importance of the protozoa in pathology, and the gradual usurpation of this class of parasites of the premier place hitherto held by bacteria. The great importance of insects in the transmission of certain classes of disease was discussed in a general way, the work of Ross receiving special attention. After these introductory remarks, and a few words as to the likelihood of San Francisco becoming a center for tropical disease, the speaker briefly outlined the ground which he proposed to cover in his course of ten lectures.

The first lecture was mainly taken up with the consideration of certain general principles determining the occurrence of disease in the tropics. The speaker pointed out first that like the larger animals and plants, disease germs were unevenly distributed over the earth. The important factor in determining differences in distribution is the climate, and particularly the temperature. As a result of climatic differences the regular flora and fauna vary in different climates but the bacterial flora and fauna show no such marked variation in distribution as their normal habitat is the body of man, which shows practically no variation in different parts of the world. Though practically all the diseases of temperate climates can flourish in the tropics there are some tropical diseases which can not spread in temperate climates even if they are introduced there. In connection with the introduction of tropical diseases into colder climates the lecturer spoke of the latency of certain tropical diseases, a factor which is often overlooked, and which leads to errors in diagnosis. He cited as examples cases of blackwater fever and sleeping sickness which had developed in England months or even years after the individual had been in the tropics. After referring to one or two diseases, as tinea impricata and pinta, which can not be exported from the tropics because the moisture and temperature conditions are lacking elsewhere, the lecturer explained why certain tropical diseases can be exported to, but can not be spread in, temperate climates. The reason generally has to do with the life history of the parasite causing a given disease during the period in which it is passing, or being carried from one human host to another. Some parasites, as the uncinaria, have undergone development in earth for a certain period of time before they can reinfect man. If this earth is not of the proper temperature the embryos cannot develop and therefore are incapable of infecting man. Other parasites need for their development water at a certain temperature found only in tropical countries. Again an intermediate host, found only in the tropics, may be needed for the full development of the parasite, or the parasite may be unable to escape from the body without the aid of some tropical suctorial insect. In other instances some large tropical animal carries the cause of a given disease in its body and keeps it alive until the necessary human victim comes along. In certain toxic diseases certain media found only in the tropics, and a tropical temperature may be needed before the poisons will develop.

As his first example of a disease whose parasite needed intermediary development at a high temperature Sir Patrick Manson cited ankylostomiasis (uncinariasis). In a general way he traced out the factors concerned in the spread of the disease and in its prevention. He supported Loos' view that infection occurs through the skin, cautioned as to the danger of the disease spreading, and emphasized the necessity for examination of the stools in all obscure and resistant cases of anemia. He emphasized the danger from Porto Ricans, already pointed out by Gunn, and called attention to the Chinese as sources of infection.

He next considered diseases in which the embryo escapes into water and undergoes development in the interior of water animals before becoming infective for the human being. As an example of this form of infection he cited dracontiasis or guinea-worm disease. He gave an interesting description of the life history of the guinea worm (*Dracunculus medinensis*) showing that in all probability it penetrates through the skin, especially in those portions most likely to come in contact with water, giving the history of its development in the subcutaneous tissues, its approach to the surface when it is full of embryos, and its method of expelling these when the infected part is brought in contact with water. He described the life history of the embryos in water, their development in certain varieties of cyclops, and their probable fate so far as this could be surmised from knowledge and analogy. He advised American physicians to be on the lookout for this disease in those returning from the tropics with small leg ulcers with central openings, and cautioned against meddlesome attempts at removing the worm before all its embryos had escaped, which treatment he aptly compared to meddlesome midwifery. As a second example of this type of disease he cited the parasitic hemoptysis of Formosa and Japan, due to infection with the lung fluke (*Paragonimus westermanii*). He pointed out that this parasite has been described by Ward and others in the United States in cats, dogs, and pigs, and hazarded the opinion that human infections would, in the course of time, be discovered here. He described the life history of the organism as far as known, and pointed out the necessity for wider knowledge, as, once in the body, we are powerless to remove the flukes, except in rare cases of brain infection with localizing symptoms. The third form of parasite requiring development in water which the lecturer described was the *Schistosomum hematobium*, the cause of bilharziasis. He described the life history of this trematode in the body, showed that the localization of the ova in the bladder and rectum resulted from an attempt to reach the outer world and their natural habitat water, and described the development of the embryo from the egg as far as this is known. Attention was called to the fact that the disease exists in the West Indies, has been imported into the United States, and may become distributed in this country. The lecturer called attention to the new Asiatic representative of this family, the *Schistosomum cattoi*, and in discussing the peculiarities of the eggs of the vesical and rectal infections, suggested that there were probably several varieties of Schistosomum. He dwelt on the susceptibility of cats to this infection as a factor which made the possibility of infection of this country more likely, and suggested the examination of the urine in all doubtful cases of hematuria, and of the feces in all obscure rectal irritations for the characteristic ova.

Dr. Manson then took up the discussion of those tropical diseases which are limited in range on account of requiring certain suctorial insects as intermediate hosts. He considered first the various forms of filariasis, pointing out that the canine form occurs in this country, and that other forms may occur. He described the habitat of the adult worm in the lymph vessels, the passage of the embryos into the blood, their removal by certain varieties of mosquito, and their subsequent development in the stomach and muscles of the host. He then described how they passed into the neighborhood of the proboscis, and escaped into the new human host at the time that the insect bit. He discussed the relation of this form of infection to endemic elephantiasis, lymph varices, and chyluria, and remarked on the mystery of the periodical disappearance of the embryos from the blood, which has never been satisfactorily explained. Malaria was next considered, and a very interesting comparison was drawn between the early stages of the filarial embryo and the malarial parasite; in both diseases the parasite reaches a non-motile or restrictedly motile stage in the blood, in both instances it is protected from injury by a covering (in the filaria its sheath and in the plasmodium the red corpuscle), and both parasites undergo further development only in the tissues of the mosquito. The description of the malarial parasite was clear and interesting, and the relation of this disease to the mosquito was proved, as the lecturer said, "to the hilt." Dr. Manson expressed the belief that mosquito transmission was probably the only method of transmission of this disease. The prophylaxis of the disease, and the history of its introduction into new territories was discussed.

The subject of trypanosomiasis, and the relation of trypanosomes to sleeping sickness was next discussed. A clear clinical description of infection with the *Trypanosoma gambiense* followed the lecturer's remarks on the structure of trypanosomes in general. This form of trypanosomiasis is characterized by a low form of fever, muscular weakness, an erythematous skin eruption of a smudgy ill-defined character, patchy edema, tachycardia, enlargement of the spleen and lymph glands, and an increase in the large mononuclears of the blood. In connection with trypanosome infections Dr. Manson discussed at length the relation of these parasites to sleeping sickness. He described the spread of this peculiar and fatal disease from a small area on the West coast of Africa to the East Coast, and commented on the ravages it had made in certain sections, particularly in Uganda. He graphically described the clinical picture, the low fever, the headache, lassitude followed by lethargy, the pessimistic and morose mental condition, the enlargement of the spleen and lymph glands, and the pruritus. He compared the disease with general paresis both in its clinical and pathologic manifestations. In his historical sketch of the disease he pointed out that it had been imported into the United States many times in the days of slavery, but had never spread. In discussing the relation to trypanosomes he took a conservative stand, and suggested that though there was in all probability an etiologic relationship further research was necessary.

The lecturer then described a closely allied form of infection, kala-azar, or as he preferred to call it, tropical febrile splenomegaly. This also is a chronic febrile disease characterized by fever of a variable type, anemia, prostration, and emaciation; the liver and spleen are always enlarged, sometimes very markedly. The disease seems to be almost invariably fatal. So far this disease has not been described in the western hemisphere, but is limited to Africa, India, and China. In Assam it has in recent years almost decimated the population in some districts. The recent discovery of the parasite by Leishman was interestingly described, and its oval form, macronucleus and micronucleus, and grouping into masses were pictured. Its close relation to the trypanosomes, and the demonstration of this by the cultural work of Rogers was mentioned. Attention was also called to the valuable work of Wright of Boston in connection with oriental sore, in which it was shown that this condition is associated with what is morphologically an identical parasite. Dr. Manson suggested that in tropical febrile splenomegaly the parasites leave the body by means of surface sores or intestinal ulcerations. He pointed out the difficulty of explaining the fact that tropical febrile splenomegaly, a very fatal disease, and oriental sore, a non-fatal disease, are associated with what appears to be the same parasite. He cited a belief that oriental sore occurred only in countries where camels are found, and suggested that it might be due to the action of the parasite modified by passage through the camel, while tropical febrile splenomegaly might be due to the same parasite unmodified. This supposition would assume an analogy to smallpox and vaccinia which are due to the same germ.

modified in the case of vaccinia, by its passage through the cow. He showed that the life history of this parasite outside of the body is only imperfectly known, though it seems probable that a fly of some sort acts as an intermediate host.

Several lectures were then devoted to the discussion of the diagnosis of malaria, and the several tropical diseases which are commonly confused with it. In the diagnosis of malaria the lecturer emphasized three points; the periodicity of the paroxysms, the blood examination, and the therapeutic test. Mediterranean fever, liver abscess, relapsing fever, tropical febrile splenomegaly, and leprosy were all mentioned as tropical diseases likely to be mistaken for, and treated as malaria. The differential diagnosis of these different conditions was fully discussed, and several points of importance were brought out. In connection with Mediterranean fever Dr. Manson emphasized the lack of value of the serum test under ordinary circumstances. He pointed out that the condition of the culture of *Micrococcus melitensis* was of great importance, as was the personal equation of the observer. In the remarks on liver abscess stress was laid on the insidious character of the symptoms. In discussing this point the lecturer brought forward two aphorisms which he had formulated as a result of his experience in China, where he observed a great deal of liver abscess and thoracic aneurism. These were, to suspect thoracic aneurism in all obscure non-febrile thoracic complaints, and to suspect liver abscess in all obscure febrile abdominal conditions. In diagnosis of liver abscess the necessity of repeated exploratory needle punctures was emphasized, and it was advised that such punctures be always done under an anesthetic, and that when the abscess was found the needle should be left *in situ*, and operation proceeded with immediately.

In the ninth lecture Sir Patrick Manson briefly considered the treatment of the diseases he had previously discussed, and also that of dysentery and sprue. As a prophylactic measure he advised cautioning all patients leaving the tropics that they should continue precautionary measures against tropical diseases for at least six months after their departure. In considering dysentery physicians were advised to regard it as, in a sense, a surgical condition, and to look on the intestinal canal as a large drainage tube. The principles of treatment included the removal of the discharges from the ulcers, and the use of agents having a direct effect on the specific causes of the disease. The treatment advocated consisted in absolute rest, the reduction of food to a minimum for a time, mild catharsis, preferably with small doses of castor oil, and the internal administration of ipecac. The latter drug Dr. Manson regards as almost specific, and thinks it has fallen into disrepute, especially in the United States, on account of its improper use. In the treatment of sprue, which the lecturer regarded as a very dangerous disease if improperly treated, absolute rest, a restricted diet of milk, and in some cases strawberries was recommended. In some cases scraped meat was allowed. The rest and the restriction of the diet until at least six weeks after the stools became normal was insisted on.

In the final lecture some of the unsolved problems in tropical medicine were considered. In connection with yellow fever Dr. Manson suggested two lines of research. He stated that the relative immunity of the old inhabitants in yellow fever districts was very often not due to previous attack, and that the reason for this immunity was yet to be solved. He suggested that there might be two strains of yellow fever virus, an attenuated and a virulent one, just as in the case of smallpox and vaccinia. One line of work suggested was the determination of the clinical picture presented by the inhabitants of a yellow fever district while going through this immunizing stage. Another problem suggested was the study of the effects on the malarial parasite and other insect-carried germs of passing them through different species of mosquitoes. In connection with yellow fever, the danger that this disease might be conveyed to the tropical portions of Asia by the opening of the Panama Canal was discussed, and it was pointed out that the United States would have to face the problem of the prevention of this spread. Dr. Manson suggested that this could be done without serious inconvenience to human beings, as the war must be waged on the stegomyia mosquito. Other problems to be studied related to the peculiar distribution of such diseases as malaria and filariasis. With equally infected territory so far as mosquitoes were concerned, and with equal chances of contamination of these, similar districts were often very differently infected.

The final lecture was closed by a plea for the teaching of tropical medicine as a special study for those whose work was likely to take them to the tropics. San Francisco was considered by the lecturer to be the most favorably situated city in the United States for the establishment of a school of tropical medicine, and this was suggested. Education of school children in tropical districts and of government employes was also insisted on, and especial stress was laid on the necessity for education regarding the rôle which insects play in the transmission of tropical diseases.

Weak Heart Sounds.—Hoffman says (American Year Book of Medicine): If the aortic second sound becomes very weak, and the second pulmonary sound likewise, in infectious diseases, it indicates great weakness of the heart, and is, therefore, a bad sign. Marked weakness of the second pulmonary sound in mitral valvular disease indicates imperfect compensation. Marked weakness of the sounds at the base, as compared with those at the apex, indicates an alcoholic heart. Marked weakness of the sounds at the apex, as compared with those at the base, show a fatty heart.—*Denver Med. Times.*

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Pneumonia.

Ewart, in *London Lancet*, recommends for the shock of invasion of pneumonia, recumbency, warmth and a small dose of ether or brandy with hot water. In addition a small dose of ammonium bromid with the aromatic spirits of ammonia and from 5 to 10 drops (.30-.65) of a solution of morphin (1 per cent.) in aqua chloroformi to prepare the patient for sleep is advisable. An initial dose of calomel is also recommended, followed by a senna draught.

The author states, in relation to cardiac treatment, that arrangements must be made for the administration of oxygen to be commenced early and given continuously, as a valuable aid to the heart against fatigue, and not postpone its administration until the desperate state is reached. It has the advantage over the continuous administration of alcohol in being harmless and in not affecting the alimentary tract. The glass funnel should be avoided in the administration of oxygen as very unsuitable. The best means is to place the end of the tube between the lips or immediately in front of the mouth. He recommends leeches applied early to the seat of pain, and makes this a part of the treatment regularly. He also recommends the early application before the deposition of fibrin has taken place and not their application during the stage of exhaustion.

Sweating may be promoted by the hot-air bath to the lower extremities or a hot mustard footbath, but the patient must not be fatigued by these measures.

As to the medicinal treatment, the chief aims are to promote diaphoresis, diuresis, fibrinosis and absorption. To meet these indications the author recommends a combination of ammonium citrate and sweet spirits of nitre together with warm beverages. To improve the cardiac condition he recommends gin as superior to alcohol in some respects, as it is a better diuretic. Oxygen, as has been stated, is recommended early in the disease, and sound sleep as peerless in keeping up the heart's strength.

In order to check the tendency to coagulation, citric acid is recommended as a precipitant of calcium, which aids clotting. The carbonates and iodids act similarly, but the carbonates should be avoided in pneumonia because of the gastric inflation produced, which is indirectly very detrimental to the heart's action. The iodids, however, are highly recommended in the treatment of this disease, as diminishing the tendency to coagulation and, on the other hand, increasing absorption of the fibrinous deposits. He recommends it in doses of 60 grains (4.00) a day, or more, if necessary. A combination similar to the following is recommended:

℞.	Potass. iodidi	gr. v		30
	Liq. ammon. cit	ʒii	8	
	Spts. etheris nitrosi	ʒss	2	
	Spts. ammon. arom	m. xx	1	30
	Aquæ chloroformi q. s. ad	℥ss	15	

M. Sig.: One tablespoonful diluted, to be taken every hour for six doses, then every three hours.

Colchicum in Gout.

The following combinations by Beasley containing colchicum are recommended in the treatment of gout:

℞.	Ext. colchici			
	Ext. rhei			
	Ext. aloes soc., āā	gr. xxx	2	
	Ext. belladonnæ	gr. v		30

M. Ft. pil. No. xxx. Sig.: One pill twice a day. Or:

℞.	Pulv. colchici sem	gr. lxxii	4	75
	Sodii salicylatis			
	Magnesiæ (calcined), āā	ʒii	8	

M. Ft. cachet No. xxiv. Sig.: One every four hours. Or:

℞.	Colchicinæ salicylatis	gr. ss		03
	Methyl salicylatis	ʒiiss	10	
	Ol. menth. pip	m. xxx	2	

M. Ft. cap. No. xxx. Sig.: One capsule three times a day. Or:

℞.	Tinct. colchici	ʒiss	6
	Tinct. cimicif.	ʒi	4
	Tinct. bellad.	ʒss	2
	Sodii bicarb.	ʒiii	12
	Inf. gent. co. q. s. ad	℥vi	180

M. Sig.: Shake the bottle and take one tablespoonful in water every four hours. Or:

℞.	Tinct. colchici	ʒiii	12
	Tinct. bellad.	ʒi	4
	Lithii citratis	ʒii	8
	Elix. simplicis q. s. ad	℥iii	90

M. Sig.: One teaspoonful after meals, in water.

In cases of gouty rheumatism the following combinations are recomemnded:

℞.	Vini colchici	ʒi	4
	Magnes. sulph.		
	Potass. bicarb., āā	ʒiv	15
	Sodii salicyl.	ʒiss	6
	Aquæ chloroformi q. s. ad	℥iv	120

M. Sig.: One tablespoonful with a teaspoonful of lemon juice, while effervescing, three times a day. Or:

℞.	Colchicinæ salicyl	gr. ss		03
	Acidi salicylici	ʒiss	6	

M. Ft. pil. No. xxx. Sig.: One pill every four hours during the day.

Prophylaxis of the Diarrheal Diseases of Childhood.

Dr. Seneca Egbert, in *Med. Bull.*, states, for an efficient prophylaxis of the diarrheas of children, that both the predisposing and exciting causes must be considered. Among the former heat is a most powerful factor. Everything possible should be done to keep the babies cool; the clothing should be reduced to a minimum consistent with safety, keeping in mind the possibility of sudden changes in temperature and the dangers which may arise therefrom in the way of deranging the intestinal functions.

Living and sleeping rooms should be kept as cool and as well ventilated as possible. The fear of "night air" should be removed from the minds of the patients. The country or seashore is much preferable during the heated term to the city. If necessary to keep the body temperature down, the bath should be resorted to frequently—twice or three times a day, if necessary—and the baby should be given plenty of clean, sterile and cool water to drink. Milk is the most important article of diet during the first year or so of the infant's life and up to the first quinquenium. It should be pure and not over forty-eight hours old, and should be sterilized or pasteurized soon after taken from the cow. Cleanliness to the extreme should be observed with everything about the child. Napkins and soiled clothing should be promptly boiled or sterilized, as most of the diarrheal discharges are probably infectious.

The importance of excluding house flies and other insects from access to the infants not only to prevent any disturbance of their sleep, but to prevent the carrying of infection from fecal discharges and transmitting germs of the most harmful character.

Laryngeal Manifestations of Influenza.

E. J. Moure, in the Pract. Med. Series of "Year Books," states that the laryngeal manifestations of influenza are found under four forms: 1, The catarrhal form; 2, the infiltrated edematous form; 3, the ulcerative form, and 4, the myopathic form. As local treatment the author recommends an inhalation from a pint of hot water containing a teaspoonful of the following:

℞.	Menthol	gr. x		65
	Balsami peruviani	ʒss	2	
	Thymol	gr. i		06
	Tinct. eucalypti q. s. ad	℥ii	60	

M. Sig.: One teaspoonful floated on a pint of hot water as an inhalation.

Hot fomentations around the neck are very useful in the painful congestive forms.

Scarifications may be necessary in the markedly edematous forms, but usually the following combination as a spray will give relief:

℞.	Cocainæ muriatis	gr. ii-iiiss		12-.20
	Sol. adrenalin (1-1,000)	m. xl	2	65
	Antipyrin	ʒi	4	
	Glycerini			
	Aq. menth. pip., āā	ʒvi	24	
	Aquæ q. s. ad	℥vi	180	

M. Sig.: To be used as a spray three or four times a day.

Later in the course of the trouble, when the infiltration has disappeared, good results are obtained, according to the author, from the application of a silver nitrate solution or zinc chlorid 1/100 or 1/50, or it may be as strong as 1/30.

In cases of edema of the glottis in such conditions, or from the various other causes, J. C. Gittings states that intubation rarely affords relief unless the obstruction is infraglottic. Tracheotomy is demanded in extreme cases. The continuous inhalation of medicated steam is always to be employed; scarification and external depletion by leeches is recommended. Cold and heat should be used externally and internally—cold as a prophylactic and heat as a stimulant and absorbent. Stimulating and supportive treatment is necessary in such cases.

Medicolegal

Compulsory Physical Examination.

The Supreme Court of Montana says, in May vs. Northern Pacific Railway Co., that on the question of whether, in an action for personal injuries, a court may compel the plaintiff to submit to a physical examination by physicians and surgeons appointed by the court, the authorities are in hopeless conflict, and any attempt to reconcile them would be barren of results. The first reported case in which the power of the court to compel such examination is asserted is Walsh vs. Sayre, 52 How. Prac. 334, decided by the New York Superior Court in 1868. This was an action for damages for malpractice, and on the analogy to cases of mayhem, divorce on the ground of impotency, and cases of controversies between a widow claiming to be pregnant by the decedent, and other heirs of the estate, wherein such examinations had been ordered, it was held that a court of law could compel the plaintiff to submit to a physical examination. A leading case on the subject is Schroeder vs. Railway Co., 47 Iowa, 375, decided in 1877. Mention is not made of the New York case cited above. The opinion states that there were no precedents at the time of its rendition. The power of the trial court to compel the plaintiff to submit to such an examination is asserted.

After continuing the review showing the decisions of courts on the first presentation of this question to them, the Supreme Court of Montana says that the case of Walsh vs. Sayre was followed in Shaw vs. Van Rensselaer, 60 How. Prac., 143; but in 1891 the question came before the Court of Appeals of New York in McQuigan vs. Railway Co., 129 N. Y., 50, and Walsh vs. Sayre and Shaw vs. Van Rensselaer were overruled. The McQuigan case was followed in Cole vs. Fall Brook Coal Co., 159 N. Y., 59, decided in 1899. The Legislature of New York, however, circumvented the effect of these last decisions by enacting a statute directly conferring upon trial courts the power to make and enforce such an order. Then follows a further review of decisions, and the statement that if the last announcements of these several courts may be taken to indicate the law in their respective states, a review of the decisions discloses that the power of trial courts to compel such examinations is asserted in Alabama, Arkansas, Georgia, Iowa, Indiana, Kansas, Kentucky, Michigan, Minnesota, Missouri, North Dakota, Washington and Wisconsin, and denied in the federal courts, and in Illinois, Massachusetts and Texas, and was denied in New York until specifically granted by direct legislative enactment.

The bare assertion that trial courts possess this power, in the absence of any legislation, and without common law precedents, has led to the greatest possible confusion among the decisions of the very courts asserting it. (1) What is the source of the power? (2) To what extent may it be carried? (3) May the defendant demand the order as a matter of right? And (4) how will the court enforce obedience to its order?

1. Singularly enough, the first of these questions appears to have received little or no consideration. In some of the opinions it is said that the power is one inherent in the trial courts. In Graves vs. Battle Creek, 95 Mich. 266, decided in 1893, it is said, "It is true that the rule is one of modern growth." Most of the courts content themselves with the bare assertion of the power, without any discussion of its origin.

2. If the plaintiff may be compelled to submit to a physical examination, is the authority to order it an absolute or only a qualified one? May the plaintiff be compelled to submit to the administration to him of anesthetics or drugs by which he loses consciousness altogether, or, if the injury is an internal one, may he be compelled to submit to the use of such surgical instruments as the physicians appointed to make the examination may see fit to use? May he be compelled to exhibit the injury to the jury in open court, and, if the plaintiff be a woman, is there any protection whatever against violence to her feelings? By some of these courts it has been held that anesthetics and drugs should not be used (Schroeder vs. Railway Co., Strudgeon vs. Sand Beach, 107 Mich., 496), and that the plaintiff should not be compelled to submit to the use of surgical instruments (O'Brien vs. La Crosse, 99 Wis., 421); but in Railway Co. vs. Palmore, 68 Kan., 545, it was held that the plaintiff could be compelled to submit to the examination, and to an injection of a drug into his injured eye to dilate the pupil; and in Hall vs. Manson, 99 Iowa, 698, it was held that the plaintiff, a woman, could be compelled to remove her shoe and stocking, that an examination might be had and measurements taken of her injured ankle in the presence of the jury. In Railway Co. vs. Hill, 8 South., 90, the Supreme Court of Alabama said: "When it becomes a question of possible violence to the refined and delicate feelings of the plaintiff on the one hand, and possible injustice on the other, the law can not hesitate. Justice must be done." This is quoted with approval in Lane vs. Railway Co., 21 Wash., 119. However, in Graves vs. Battle Creek, it is said: "The decisions are not uniform on this question, but the great weight of authority is in favor of the exercise of such power by the court under proper restrictions; the rule recognizing, however, that a wide discretion is vested in the trial court, which justifies a refusal to require the examination . . . where the sense of delicacy of the plaintiff may be offended by the exhibition." To the same effect is the decision in Ottawa vs. Gilliland, 63 Kan., 165.

3. In Sibley vs. Smith, 46 Ark., 275, and in Railroad Co. vs. Thul, 29 Kan., 466, it is held that the defendant may demand the order as a matter of right, but that in granting it the court may exercise its discretion. This court (the Supreme Court of Montana) is unable to understand this contradiction of terms, and observes that in most of the cases it is held that the application is one addressed to the sound discretion of the trial court, subject to review for manifest abuse only.

4. In the Schroeder Case and in Sibley vs. Smith it is said that refusal of the plaintiff to comply with the order would constitute contempt of court, and subject the plaintiff to the punishment of a recusant witness; while in Turnpike Co. vs. Baily, 37 Ohio St., 104; Lane vs. Railway Co., Wanek vs. Winona, 78 Minn., 98; Brown vs. Railroad Co., 12 N. D., 61, and in the dissenting opinion in Railroad Co. vs. Botsford, 141 U. S., 250, it is said that it is not a question of contempt; that the court can not compel the plaintiff to comply with the order which it has made, but, if he refuses, the court may dismiss his action or refuse to permit him to testify.

From the assertion of the power arising from the apparent necessities of extraordinary cases, as disclosed by the decision in the Schroeder Case, we observe the almost limitless extent to which the power has been carried; and, not content with applying the rule to civil actions for personal injuries, it has been extended to apply to the prosecuting witness in a criminal case (King vs. State, 100 Ala., 85), and, for the same reasons advanced for the exercise of the power in civil action by the courts asserting its existence, the doctrine has been applied to a criminal case, and the defendant compelled to bare to the view of the jury part of the unexposed portions of his body on which were certain tattoo marks, in order to enable the state to complete the case against him, with the result that the defendant was convicted of a capital offense. State vs. Ah Chuey, 14 Nev., 79.

The only instances in which such power was invoked at common law were in actions for divorce upon the ground of impotency, appeals of mayhem, cases of atrocious battery, cases of conviction of a woman of a capital crime who is alleged to be pregnant, and controversies between heirs and a widow claiming to be pregnant by the deceased. No one of these rules has ever obtained in this country, unless it has been in cases of divorce on the ground of impotency. The power was exercised by the English ecclesiastical courts, and was a graft from the civil law.

The reasons advanced by the courts for the exercise of this power, in the absence of any direct authority, the Supreme Court of Montana goes on to say, do not commend themselves to it. It says that it is said by some that the power is analogous to the proceeding for discovery; but discovery was not compelled by the law courts at common law. By other courts it is said that the assertion of this power is necessary to prevent the plaintiff from maligning and bolstering up a fictitious case "by the very unreliable speculations of so-called medical experts." Wanek vs. Winona, above cited. It is a curious process of reasoning which enables a court to characterize the solemn testimony of medical men as unreliable speculations when the witnesses are called by the plaintiff, but if these same physicians be called by the court, on application of the defendant, they immediately become the instrumentalities through which, not approximate, but exact, justice is to be done. Others, including the dissenting opinion in the Botsford Case, say it is strange that the plaintiff may, if he chooses, exhibit his injury to the jury, or may testify concerning it, or may have other witnesses do so, but he can not be compelled to make such exhibition. This court is of the opinion that even if the plaintiff might, as a matter of right, exhibit his injuries to the jury, it would not add to the argument in behalf of that view of the case. In this state (Montana), however, he does not possess that right. He may offer to do so, but it is within the discretion of the court to permit or refuse the offer, subject, of course, to review for a manifest abuse of that discretion.

The right to the inviolability of one's person is merely a privilege which the plaintiff may waive, as a defendant may the constitutional guaranty that in a criminal case he can not be compelled to be a witness against himself. As a defendant may give evidence against himself, but can not be compelled to do so unless he waives the privilege, so the plaintiff may exhibit portions of the clothed parts of his body to the jury, if the court permits, but can not be compelled to do so. The constitutional guaranty is not more solemn and binding in one instance than in the other. And, for the much stronger reason, the plaintiff can not be compelled to make such exhibition of himself to third parties, strangers to the case, in order that they may procure material for testimony.

Current Medical Literature

AMERICAN.

American Medicine, Philadelphia.

August 19.

1 *Matas Operation for the Cure of Aneurism. J. H. Gibbon, Philadelphia.
2 *Treatment of Chancre and Chancroid. D. E. Wheeler, Buffalo.
3 Elimination of Endogenous Uric Acid in a Case of Chronic Gout. A. T. Laird, Albany, N. Y.
4 *Antituberculosis Work in the United States Army, Navy and Marine-Hospital Services. G. H. Kress, Los Angeles.
5 *Treatment of Infected Otitis Media. J. G. Huizinga, Grand Rapids, Mich.
6 *Enterotoxismus as a Substitute for Autointoxication. H. A. Houghton, New York.

1. **Matas Operation for Cure of Aneurism.**—Gibbon describes the operation and reports one case, that of a negro aged 31, who suffered from a large popliteal aneurism. The sac was laid open and the arterial openings sutured. The sac was then obliterated by repeated rows of plicating sutures. The wound was closed without drainage. Suppuration took place, but the patient made a complete recovery after superficial drainage was established. Some months after the operation there was no evidence of a recurrence.

2. **Treatment of Chancre and Chancroid.**—Wheeler classifies venereal ulcer into: 1. Simple uncomplicated ulcer, treatment consisting of frequent irrigation and wet dressings. 2. Ulcer complicated by phimosis. If attempts at reducing the phimosis fail, lateral incisions and secondary circumcision should be done; primary circumcision is contraindicated. 3. Ulcer complicated by paraphimosis. If seen early, immediate reduction is imperative; if not seen until sloughing has relieved the strangulation, expectant treatment should be instituted. 4. Phagadenic ulcer. Irrigation should be done every two hours, day and night, and iodoform used. Escharotics are positively contraindicated.

4. **Antituberculosis Work in U. S. Army, Navy and Marine-Hospital Service.**—Kress discusses the antituberculosis work carried on by the medical branches of the three public services. According to the 1900 census the mortality rate from tuberculosis for the registration area of the United States was 187.3 per 10,000 population. In the army, with a total strength of 67,643 in 1904, the mortality rate was 37 per 100,000 whites; 314 per 100,000 negroes; 84 per 100,000 Filipinos; for soldiers of the three races together it was 53 per 100,000—for all races being hardly more than one-fourth as great as in civil life. In the navy, with a total strength of 37,248, there was an increase in 1904 of 104 cases over the figures of 1903. The Marine-Hospital Service cared for 933 tuberculous seamen in hospitals and treated 306 in dispensaries.

5. **Treatment of Chronic Suppurative Otitis Media.**—Huizinga says that this condition can not be cured unless the entire auditory tract can be made surgically clean by forcing the antiseptic fluids through from end to end of the entire tract. It is necessary to have a large opening in the drum and a thoroughly dilated condition of the Eustachian tube, both for the purpose of drainage and of efficient cleansing. It is important to have a continuous current of antiseptic vapor passed through a Eustachian catheter into the Eustachian tube, both for cleansing and dilating purposes. This is best accomplished by connecting a vaporizer containing iodin, menthol and creosote in oil, with a large air tank, having the air compressed up to thirty pounds. The valves are opened and a continuous current of antiseptic air is forced through the catheter and into the Eustachian tube until the pressure goes down to twenty pounds; this requires several minutes. By this method thorough and complete dilation and the cleansing and disinfection from the use of the antiseptic solution are accomplished and the danger of driving infected material that may be present in the Eustachian tube into the deeper parts of the middle ear is avoided. It is necessary to treat the parts sufficiently often to maintain as nearly as possible a condition of antisepsis. No treatment can be considered thorough that does not recognize the relation existing between pathologic conditions in the nose and nasopharynx and the ear.

6. **Enterotoxismus.**—Because the word autointoxication as now used has many different meanings leading to considerable confusion and inaccuracy, Houghton suggests that the autointoxication of enteric origin be designated as enterotoxismus, and gives the following definition: A morbid condition characterized by the absorption of substances from the gastrointestinal tract which are toxic by virtue of their quantity or quality and which are produced therein by the disintegration of foodstuffs through the perverted and prolonged action of enzymes or the activity of entophytes. Classifications are given.

Medical Record, New York.

August 19.

7 *Operations for Procidentia Uteri. W. M. Polk, New York.
8 *Study of the Blood in Relation to Therapeutics. E. Castelli, New York.
9 *Practical Points in Pedriatrics for the General Practitioner. T. W. Kilmer, New York.
10 *Deaf-Mutism and Ptomain Poisoning. W. S. Bryant, New York.
11 Further Notes on the Toxemia of Pregnancy. W. S. Stone, New York.
12 Henry G. Davis, M.D. A Review of Some of His Work. J. J. Nutt, New York.
13 *Method for the Sterilization of Sea-Tangle Tents. O. L. Mulot, Brooklyn, N. Y.

7. **Operations for Procidentia Uteri.**—Polk proposes two methods of dealing with this condition. The first is applicable to partial prolapse when retention of the uterus is desired, and has as its purpose the reduction in size and weight of the uterus, and its removal from the posterior and lower parts of the pelvic cavity to the more advantageous position in the anterior and upper parts of this region. This is accomplished by high amputation of the cervix, followed by Alexander's operation and perineal repair. The second procedure is applicable to complete prolapse, and consists in removal of the uterus, and attachment of the vaginal stump to the anterior abdominal wall. The details of this operation are described and illustrated. The author has performed it in 10 cases with excellent results. Perineal repair is essential in this instance also, but the method chosen must not shorten the vagina too much, or there will not be slack enough left to permit the stump to reach the abdominal wall when the laparotomy is done. Vaginal hysterectomy is considered too radical for partial prolapse, and not sufficiently so for complete, and the plan of reefing the uterosacral ligaments is also deprecated.

8. **Blood in Relation to Therapeutics.**—Castelli expresses the view that the "future of medicine belongs to hematology," and that hypodermic and intravenous medication must finally replace internal treatment. The blood and lymph, he states, are the bearers and transmitters of any infectious element, and the localization of the infectious element in a special organ or region of the body, is a simple process of metastasis. The microbes, or toxins, are transported by the blood vessels into such regions of the body as offer conditions most suitable for the accomplishment of their reactive processes, just as in a similar manner cancer cells are transported to those parts of the body wherein may be reproduced the malignant growths from which they themselves originated. If the therapeutic agent should follow the same route as that followed by the infective element, its action, general and local, would take effect at such points as presented a necessity for its action.

9. **Practical Points in Pediatrics.**—In dealing with children it is essential, says Kilmer, to gain their respect, confidence and obedience, and to do this tact is required. Children should not be deceived by being told that something is not going to hurt them when it is, for in this way their confidence is irremediably lost. In examining an infant or young child it should always be undressed, and if asleep, it should be studied a while before being roused. A child's chest can not be aus-

cultated without the use of a stethoscope, because the average adult ear would cover almost an entire lung of an infant. Sputum is obtained from babies by introducing a catheter, 21 F., into the esophagus, as the act of gagging forces the sputum which is in the esophagus into or on the catheter. The landmarks on an infant's chest are quite different from those of an adult's, and it is impossible to locate the apex beat without the use of the stethoscope. The throat and ears should always be examined when called to a sick baby. Adenoids should never be operated on without an anesthetic, for the nervous shock more than counterbalances the risk of the anesthetic. A simple and practical system of milk modification that can easily be remembered is described, and a blank report is reproduced on which the mother is supposed to record the infant's progress.

10. **Deaf-Mutism and Ptomain Poisoning.**—Bryant describes two cases in which difficulty in walking, deafness, and disorders of speech were apparently produced by food poisoning.

13. **Sterilization of Sea Tangle Tents.**—Mulot advises soaking sea tangle tents for seventy-two hours in tincture of iodin and then immersing them in 95 per cent. alcohol, to remove the surplus iodin. Another method is to boil the tents and then dry them in sterile tubes for a few days in an oven or hot-air chamber, which will cause them to shrink to their original size. Or the two methods may be combined, first boiling and shrinking them, and then soaking in iodin. These tents furnish the most desirable means of dilating the cervix in some cases, and when prepared in this way their use is free from danger.

Medical News, New York.

August 19.

14 Sphygmograms from Two Cases of Bradycardia. G. Dock, Ann Arbor, Mich.
15 *Impossibility of Differentiating So-Called Paratyphoid from Typhoid Except by Bacteriologic Examination of the Blood. W. Coleman, New York.
16 *Experiments with Radium Emanations. W. C. Phillips, New York.
17 Suprapubic Prostatectomy. A. I. McKinnon, Lincoln, Neb.
18 *Prevention and Treatment of Puerperal Sepsis. L. C. Fischer, Atlanta, Ga.
19 Plea for Surgical Intervention in Suspected Malignant Disease of the Abdominal Cavity. B. B. Davis, Omaha, Neb.
20 Insane of Canada: Presidential Address. T. J. W. Burgess, Montreal, Canada.

15. **Difficulty of Differentiating Paratyphoid from Typhoid.**—According to Coleman, paratyphoid infections can not be distinguished from typhoid, except by the recovery from the blood of the bacillus concerned and its proper identification. He considers the term paratyphoid not only unnecessary but misleading, and suggests the advisability of considering typhoid clinically as a disease which may be caused by several members of the typhoid-colon group of bacilli.

16. **Radium Emanations.**—Phillips carried out some therapeutic experiments on seven patients with diseases of the ear, nose and throat with a properly constructed tube, the interior of which was coated with radium so that the emanations could be made use of in treatment. The method was found to be useless.

18. **Treatment of Puerperal Sepsis.**—Fischer states that the woman should receive proper care and attention before the birth of the child and that her bed should be properly prepared. Especial care should be paid to the physician's hands. The placenta and membranes should be carefully examined. The perineum should be examined for tears, and if these have occurred they should be repaired at once. As soon as there is a rise of temperature treatment should be started. Fischer emphasizes the importance of making careful digital examinations and advocates the use of a dull irrigating curette when the temperature is not reduced by douches. He calls attention to the value of normal salt solution in diluting the toxins and in aiding absorption. He prefers tube to gauze drainage in these cases, and avoids the use of gauze after the curettement. He also states that it is important to open and to drain abscesses in the pelvis as soon as they form.

Boston Medical and Surgical Journal.

August 17.

21 Problems of Intermediary Metabolism. R. H. Chittenden, New Haven, Conn.
22 *Case of Lymphatic Leukemia in a Child. J. L. Morse and H. C. Low, Boston.
23 Further Contribution to the Study of Bacilluria in Typhoid and Its Treatment with Hexamethylenamin. C. D. Easton, Boston.

22. **Lymphatic Leukemia in a Child.**—Morse's case, in a girl 3½ years old, is of interest in that it afforded an opportunity to study the development of the changes in the blood and lymph nodes during a considerable period, and that, although it was most carefully studied, the correct diagnosis could not be made until a comparatively short time before death. It shows that the character of the changes in the blood may not develop to a degree sufficient to justify a positive diagnosis for many months. It also shows that the changes in the lymph nodes may be, not only at first, but even for a considerable time, materially different from those which are usually considered to be typical of this disease. It is noteworthy that the characteristic changes in the blood and lymph nodes appeared at essentially the same time. According to Morse, the only inference that can be made from the histologic study of the tissues at different stages of the disease is that lymphatic leukemia may have its origin in a malignant growth affecting the lymphoid tissues more or less generally, and that until there is a secondary proliferation of the lymphoid cells we do not get the typical tissue picture and blood condition which is characteristic of lymphatic leukemia. It suggests that leukemia, pseudoleukemia and malignant lymphoma can not be separated as three distinct entities, and that they do not always differ characteristically in the histologic structure of their lymphoid tissues; and that the microscopic sections in these cases often will be wrongly judged in the absence of complete clinical data as regards the distribution of the process and the examination of the blood.

New York Medical Journal.

August 19.

24 The Epiphyses of the Long Bones and Their Bearings on the Operation of Resection. J. Knott, Dublin, Ireland.
25 *Use and Abuse of the Stomach Tube. E. Palier, New York.
26 *Employment of Dry Cups in Herpes Zoster. M. Leale, New York.
27 Tropical Diseases of the Angola Highlands. F. C. Wellman, Benguella, West Africa.
28 Element of Truth in Mental Healing. L. Waite, Chicago.
29 Six Lectures on Diseases of the Blood. J. M. Swan, Philadelphia.
30 *New Method of Extracting the Internal Saphenous and Similar Veins in Varicose Conditions; Preliminary Report. W. L. Kellar, San Francisco.

25. **Use of Stomach Tube.**—Whenever possible Palier uses three vessels for obtaining the gastric contents for examination. The first few cubic centimeters he collects in one vessel; then enough for examination in a second vessel, and the remainder in a third vessel. The second vessel usually contains the fluid of the highest acidity. He seldom aspirates to obtain the gastric contents, but slips a rubber tube on the distal end of a short glass tube, the proximal end of which is inserted into a Ewald stomach tube, and by lowering the distal end the stomach contents come out by the siphon principle, especially when some pressure is used on the stomach. He believes that the stomach tube is not used sufficiently for diagnostic purposes, and cites several cases to show the utter impossibility of correctly diagnosticating and treating gastric diseases without the aid of this valuable instrument. The contraindications of introducing the stomach tube are really very few. When it is carefully and properly done, a soft rubber tube can do no harm. The classical contraindications are hematemesis, aneurism of the aorta and advanced pregnancy. Cardiac affections differ so widely in numerous respects that each case must be judged on its individual merits. In hemorrhage from the stomach, this instrument may do harm by aggravating the bleeding. In pregnancy each case should be judged on its own merits. As to aortic aneurism, while the introduction of a soft rubber tube is not likely to rupture the aneurism, yet this is liable to rupture any moment under excitement, and it is best, therefore, not to attempt the use of the tube. When the stomach can not empty itself, when there is alimentary stasis, when drainage is necessary, and when there is much mucus in the stomach, the stomach tube should be used.

26. **Dry Cups in Herpes Zoster.**—Leale emphasizes the fact that the careful and scientific application of dry cups has proved of great value in his hands in the treatment of herpes zoster, both in shortening the duration of the disease and in

ameliorating the symptoms. The dry cup should be applied over the ganglia of the posterior roots and over the points of emergence of the nerves involved. This is done just to the affected side of the spinous processes of vertebræ over the area determined, several cups being applied and allowed to remain long enough to insure their maximum suction power. After the first set is removed they can be reapplied if deemed necessary. Then a few cups are applied to the location of the emergence and over the course of the nerve or nerves involved. In this we are guided by the seat of the pain and hyperesthesia and by the location of the eruption. Leale makes it a practice to cup early in the disease, in many cases before the eruption has appeared, when, of course, it is difficult or impossible to distinguish it from a simple neuralgia. He usually finds it best to repeat the cupping once every twenty-four hours, and preferably just before the patient settles down for his night's sleep. In this way a nocturnal paroxysm of pain can often be prevented, and a good night's rest secured, which otherwise would have been impossible.

30. **New Method of Extirpating Varicose Veins.**—The operation described by Kellar should be employed to extirpate such varicose veins as have few branches, without mutilating the patient by a continuous scar along the course of the vessel to be removed. The vessel is exposed by a short incision near the femoral opening of the fascia lata (if the internal saphenous), is dissected free from its sheath for about one inch, and is then ligated as high up as possible. The lower end of the vein is exposed and treated in a similar manner. The vein is now cut below the proximal end and above the distal end, thus leaving the section to be removed free and ready for removal. The upper end of the section to be removed is split for about three-quarters of an inch on its anterior wall. A strong ligature is then tied to the upper end of the vein, care being taken not to include more tissue in the ligature than will pass through the lumen of the vessel. A wire loop or probe is then passed through the lumen of the vessel from the lower opening, and the ligature is threaded through the eye of the loop or probe, the probe is withdrawn and the ligature brought out on the surface at the point where the probe entered. Gentle traction is now made on the ligature, the edges of the vein being inverted into its own lumen by an assistant. Traction is continued until the vein is completely extirpated by being turned inside out and withdrawn from its sheath. When the internal saphenous vein is being removed a slight puckering is seen about midway between the incisions, indicating that the posterior branch of the vessel has been reached, and the latter, with another small branch often present at that point, can be ligated and incised through a small incision. After separating these branches, traction is again employed and the remainder of the vein removed. In the first patient operated on by the author only about three inches of the vein were removed, but in the second five inches were extirpated without difficulty.

Lancet-Clinic, Cincinnati.

August 19.

31 *Maternal Diet with the Object of Lessening the Bony Development of the Fetus. W. Gillespie, Cincinnati.
32 *President's Address, Mississippi Valley Medical Association. E. Walker, Evansville, Ind.
33 *Prevention of Heart Disease. R. H. Babcock, Chicago.

31. **Maternal Diet and Fetal Development.**—Gillespie discusses the possibility of influencing the bony growth of the fetus by regulating the diet of the mother. He believes that this is not only impossible but dangerous, inasmuch as the demands of the fetus must be met by the mother even to the extreme of decalcifying her own osseous system. Furthermore, even if it were possible to bring about such a result, it would probably increase the difficulties of labor rather than diminish them, because the lack of any bony development may prove a serious obstacle to labor. Under normal conditions the spinal column of the fetus possesses sufficient rigidity to act as a good transmitter of force. Its rigidity is greatly increased by the splint-like action of the arms and legs, folded as they are on the anterior surface of the child. If we could, by diet, lessen the rigidity of the fetal skeleton, it would in like proportion lessen its ability to transmit force and the result is a difficult labor.

32.—See article in The Journal, Feb. 6, 1904, page 347.

33.—See abstract in The Journal, Oct. 24, 1903, page 1040.

Annals of Surgery, Philadelphia.

August.

34 *Final Results in the X-Ray Treatment of Cancer, Including Sarcoma. W. B. Coley, New York.
35 *Scopolamin-Morphin as an Adjuvant in the Administration of General Anesthesia. G. Seelig, St. Louis.
36 *Scopolamin-Morphin Anesthesia. E. Ries, Chicago.
37 Hypertrophic Pyloric Stenosis in the Infant. J. M. Robertson, Glasgow, Scotland.
38 Combined Volvulus and Hernia Through a Recent Mesenteric Slit. H. C. Curl, U. S. N.
39 *Cure of Femoral Hernia. W. B. De Garmo, New York.
40 Punctured Wounds of the Bladder. E. Evans, La Crosse, Wis., and H. A. Fowler, Washington, D. C.
41 Dislocation Forward of the Atlas, with Fracture of the Odontoid Process of the Axis. J. A. Kelly, New York.
42 *New Interdental Splint for Fractures of the Lower Jaw. R. Russ, San Francisco.
43 *Treatment of Fractures of the Femur in Infancy and Childhood. M. W. Ware, New York.
44 Fracture of the Carpal Scaphoid. L. W. Ely, New York.
45 Transmesenteric Hernia of the Appendix Vermiformis. A. C. Wood, Philadelphia.

34. **X-Ray Treatment of Cancer and Sarcoma.**—After having given the *x*-ray a very careful trial in 68 cases of sarcoma in almost every locality, Coley concludes that, while in certain rare cases, especially of sarcoma originating in the lymphatic glands, improvement may be very striking, going so far, in some cases, as to cause entire disappearance, there is almost always a speedy recurrence, either local or metastatic, and that the influence of the *x*-rays on sarcoma is rarely, if ever, curative. The *x*-ray exerts a powerful influence on cancer cells of all varieties, but most marked in cases of cutaneous cancer. In some cases, chiefly in superficial epithelioma, the entire tumor may disappear, probably by reason of fatty degeneration of the tumor cells with subsequent absorption. In a much smaller number of cases of deep-seated tumors, chiefly cancer of the breast and glandular sarcoma, the tumors have disappeared under prolonged *x*-ray treatment. In nearly every one of these cases, however, that has been carefully traced to final result, there has been a local or general return of the disease within from a few months to two years. In view of this practically constant tendency to early recurrence, furthermore, in the absence of any reported cases well beyond three years, the method should never be used except in inoperable cases, or as a prophylactic after operation, as a possible, though not yet proven, means of avoiding recurrence. The use of the *x*-ray as a preoperative measure in other than cutaneous cancer is contraindicated (1) because the agent has not yet been proven to be curative, (2) because of serious risks of an extension of the disease to inaccessible glands or to other regions by metastases during the period required for a trial of the *x*-ray.

35. **Scopolamin-Morphin Anesthesia.** — Seelig presents a series of 65 general anesthesia administrations, including abdominal and vaginal hysterectomies, operations for hernia, hemorrhoids, anal fistula, plastic operations, curettements, uterine fixations, appendicectomy, nephropexy, thyroidectomy, craniectomy, orchidectomy, etc. In every instance the patient received a hypodermic injection of scopolamin hydrobromate, grain 1/100, and morphin, grain 1/6, one-half hour before the administration of the geenral anesthetic. General anesthesia was induced by means of the ethyl chlorid-ether sequence administered through the Bennett inhaler, specially modified for this purpose. Seventy-seven per cent. of the patients did not vomit at all. One-third of the patients who did vomit vomited only once, and then only from two drams to one ounce of pure mucus. Nausea was never pronounced, except in two cases, and vomiting never occurred earlier than two hours after operation. Seeling expresses himself as thoroughly satisfied with the method.

36. **Id.**—Ries has used scopolamin morphin on 72 patients in 92 operations, with good result.

39. **Cure of Femoral Hernia.**—The cases reported by De Garmo were met with in operating in a series of 1,250 abdominal hernias. The 110 femoral hernias were in 99 patients, 83 females and 16 males. Eighty-eight patients had single and 11 had double femoral hernia. The ages of the patients ranged

between 8 and 81, the greatest number of these cases occurring between the ages of 30 and 40. In 28 patients strangulation existed at the time of the operation, and 82 patients were operated on for the cure of the hernia. Only one death occurred, that of a woman aged 70, who had a strangulated hernia and an intestinal perforation. The intestine was fastened in the wound and freely opened. The patient died of exhaustion twenty-four hours later. There was only one actual recurrence, eight months after operation, in a woman of 75. The technic of the operation employed by De Garmo is as follows: The incision should be between two and three inches long, parallel with and to the inner side of the femoral vessels. The upper angle of the wound should be well up over Poupart's ligament and extend down over the saphenous opening. When the skin and the superficial fascia are incised, usually the sac and its subperitoneal fat will come into the wound with the appearance of an encysted lipoma and, before separating the sac, it is best that this entire mass should be lifted out of its bed by thumb forceps and blunt dissection, so that its neck where it passes under Poupart's ligament shall be entirely free from its surrounding. By traction on the sac and its superimposed fat this neck may not only be freed, but it will be materially lengthened, so that when it is finally ligated and cut off it will retract within the abdominal cavity, leaving the femoral canal free of foreign tissue. This is absolutely essential to a subsequent permanent cure. The sac should be opened, and where the omentum is found adherent it should be carefully ligated, cut away, and its stump reduced to the abdominal cavity. Adherent intestine will rarely be found, but when it is the adhesions must either be broken up or, if too firm, the adherent part may be cut out of the sac and left attached to the bowel. When in doubt the latter method is by far the safer. Adherent omentum is frequently found and should be cut away after careful ligation. The sac having been entirely freed of its contents, is tied off as high as possible, while it is being forcibly drawn down by an assistant. Great care must be used to insure the perfect freedom of the neck of the sac from protruding bowel or omentum while the ligature is being placed. After tying with strong catgut (a double strand of No. 2 plain is preferred), pass the needle, which has been previously threaded with it, through the neck of the sac and tie again. This gives a double ligature anchored by perforation between the two, and prevents slipping off. When the sac is cut away the stump should be examined to be sure that no bleeding vessels remain, and not until then should the ends of the ligature be cut. When the ligature is cut the stump usually retracts within the abdomen. If this is prevented by connective tissue which has not been broken it should be carefully pushed back, leaving the femoral opening absolutely free. This opening is closed by good-sized kangaroo tendon threaded in a strong, blunt needle by pressing the end of the finger firmly into the femoral opening under Poupart's ligament, and passing the needle through the ligament on the finger-point. This perforation should be well toward the outer side of the canal and close to the femoral vein. The operator should assure himself, by pressure of the finger against the ramus of the pubes, that the vessels are out of the way, and pass the point of the needle fully down to the periosteum of the pubic bone, taking up all tissues over it. This constitutes the first stitch, but should not be tied until the others are in place. Others should then be placed in the same manner, every quarter of an inch apart, until near the spine of the pubes. Usually three or four will completely close the femoral opening. When tied down and the ends cut moderately close, the fascia should be closed in by plain catgut, to avoid a pocket in the tissues that otherwise may result, and the skin may then be closed by buried sutures of plain catgut. The wound is covered by collodion and a compress of sterilized gauze, held in place by a figure-of-eight bandage. In ten days the dressings are changed and a bandage for temporary support is applied. If healing has been complete, the patient is allowed to sit up on the tenth day and to leave the house on the fourteenth day after the operation. The bandage used after the first dressing consists of a pelvic belt, of three thicknesses of canton flannel, with a compress of gauze over the former site of the hernia, and a perineal strap to prevent its slipping up. This is to be worn for four weeks. No truss or other permanent support should be worn.

42. **New Interdental Splint.**—The splint devised by Russ is made of spring brass 3/64 of an inch in thickness. Each clamp consists of two parts, a chin-piece and a piece bent at right angles, making a long and a short arm. The chin-piece is wider at one end to prevent its slipping when incorporated into the plaster-of-Paris dressing. It is 8 cm. long and provided with a number of holes so that the plaster-of-Paris may sink into them, thus making the dressing more secure. The right-angled piece is 1 cm. wide, while the arms measure 7½ cm. and 5 cm. respectively. The end of the short arm is provided with a simple lock which fits into a corresponding lock in the chin-piece. Three or four holes should be bored into the long arm. When these two parts are locked they form a clamp which permits of easy adjustment. This adjustment is accomplished by means of a round head brass machine-screw 6 cm. in length and carrying a winged nut. This fits into holes in the long arm and the chin-piece at 1½ cm. distance from the short arm. After the clamp has been made, it should be heavily nickel plated. The clamp has been found to be applicable to thirty-five out of fifty adult jaws. For the other cases, a splint with a short arm of 5½ cm. answers. The splint is applied with the patient lying in the dorsal position on the operating table. The face is shaven clean and the fractures reduced. A thin layer of felt or layers of sheet wadding are then fitted neatly over the chin and under the jaw, extending as far back as the rami. Over this the plaster-of-Paris bandage is carefully folded, the operator rubbing the plaster well as he proceeds. The bandage is carried back on each side to the ramus, where the turns are held by an assistant or by a patient. When the jaw is well covered the splints are applied, the parts being held together by the screws and nuts. The long arms are placed directly over the molar and biscuspid teeth, extending as far back as the last molars and emerging at the corners of the mouth. The chin-pieces are pressed into the plaster. They should run along the body of the jaw. The apparatus being in position, a few more turns of the bandage are taken and the dressing completed by rubbing in dry plaster-of-Paris. Accurate coaptation is desired. When dry, the chin-pieces are detached from the interdental portions and the plaster-of-Paris dressing removed and trimmed to the desired shape. The dressing is then reapplied to the jaw. The interdental portions of the splints, together with some dental compound, such as is commonly used by dentists in taking impressions, are thrown into hot water. When sufficiently softened, the dental compound is applied along the under surface of the interdental arms, and these are quickly placed on the teeth, in the same position as in the first application, and pressed firmly down so that the splints rest on an even bed, the dental compound filling up the holes which have been bored into the long arms. The short arms are then locked to the chin-pieces, the screws reapplied, and the apparatus tightened by means of the winged nuts.

43. **Treatment of Fractures of Femur in Infants.**—A device is described by Ware which he has used with excellent results in forty cases up to the age of five years. The device consists of a right-angled isosceles triangle constructed of one strip of book-binder's pasteboard, the width of the triangle adapted to the width of the thigh. One length is obtained by measuring the trunk from the level of the lower angle of the scapula to the inguinal fold. The length of the other side of the right angle is the length of the thigh. The hypothenuse is always a few inches longer. The single strip of cardboard is then bent to the shape of the desired triangle and the overlapping edges secured by adhesive plaster. The triangle may be made more rigid by reinforcing it on all sides of this inner aspect with small pieces of cigar-box wood. The outer surfaces in contact with the trunk and thigh are to be padded with non-absorbent cotton. A muslin spica secures the triangle embracing the trunk and the thigh in a flexed position. Over the muslin bandage several turns of a dextrin bandage are placed, giving additional security to the splint. The leg is left to move freely.

American Journal of Orthopedic Surgery, Philadelphia.

July.

46 President's Address, American Orthopedic Association. E. G. Brackett, Boston.
47 Coxa Vara Adolescentium and Osteoarthritis Deformans Coxæ. A. H. Freiberg, Cincinnati.
48 *Study of Thirty Cases of Chronic Non-Tuberculous Joint Disease Occurring in Adults, with Special Reference to Some of Doubtful Identity. H. W. Jones, St. Louis.
49 *Operative Treatment of Bone Tuberculosis. C. F. Painter, Boston.
50 Limitations of Erasions in Coxalgia. R. T. Taylor, Baltimore.
51 *X-Ray as an Auxiliary Treatment in Bone Tuberculosis. F. E. Peckham, Providence, R. I.
52 Skiagraphic Revelations in Rachitic Deformities of the Legs. W. Blanchard, Chicago.
53 Congenital Absence of Tibia: Transplantation of Head of Fibula; Arthrodesis at the Ankle Joint. T. H. Meyers, New York.
54 Practical Importance of Correct Foot Postures. H. L. Taylor, New York.

48. **Chronic Nontuberculous Joint Disease.**—Jones cites thirty cases of monarticular joint disease of nontuberculous origin, and representing four types: 1. Cases characterized principally by hypertrophy of the joint. 2. Cases characterized by atrophy of the joint. 3. Cases of undoubted joint infection. 4. Cases of probable periarthritis in which infection was uncertain and in which no permanent changes in the joint could be definitely shown. Of the hypertrophic variety there were seven cases, three affecting the spine, two the hip, and one each the knee and elbow. All the patients were men between 35 and 50 years of age, none of them arteriosclerotic. The duration of the disease was from 12 years to a little less than one year. In all but one case the joints involved were those subject to weight bearing. In only one (the elbow) could a definite primary cause (syphilis), be assigned; trauma seemed to bear a definite relation to the disease in only one case. In all save one the disease had been progressing steadily for the worse. The treatment consisted mainly in the use of jackets in the spine cases, coupled with rest in bed several weeks in two on account of sciatica. A spica, a high sole in one of the hip cases, and the use of a cane in another; partial fixation of the knee in a leather support, and the administration of potassium iodid and biniodid of mercury in the case in which the elbow was affected, was the treatment employed in the other cases. This latter case and in one of the spine cases the patients can be said to be well. In three cases (a spine, a hip and a knee) the patients have been relieved, and in two (a spine and a hip), practically no change has taken place. Of the second type there was but one case, occurring in a woman of 36; the disease having existed six years. The left knee was ankylosed in the fully extended position, due to confinement in plaster for two years. Forcible manipulation under anesthesia resulted in a movable joint with about 60 degrees of flexion allowed. There were five cases of type 3. Two of these were cases of spondylitis in young adults, one developing directly after childbirth and coincident uterine infection, and the other occurring in a young man. The first patient recovered in four months after the jacket and brace treatment. The other patient died of typhoid, the spinal affection probably taking its origin in the typhoid. The remaining cases had definite relation to gonorrhea, the joints affected being the hip, knee and ankle. The remaining cases (seventeen in all) belonged to type four. In all, except one, the shoulder was involved; the exceptional case being of the elbow. The affection is an inflammatory disease of the shoulder, characterized by severe pain referred to the anterior part of the joint; the point most painful to pressure being the anterior portion of the head of the humerus. The pain often radiates down the arm or across the scapula. Muscular spasm is pronounced in the early stages, being more severe at night. Final results in these cases were quite satisfactory.

49. **Operative Treatment of Bone Tuberculosis.**—Painter believes that there is a very definite field for radical surgery in tuberculous disease; that this field can be very exactly outlined by certain specific rules to which it is not possible often to make exception; that there would be a great deal less needed of consideration of operative surgery than there is now if cases were properly managed through the earlier stages of the disease; that tuberculosis in the bones and joints is tuberculosis and is not simply joint disease; that the principles which underlie the successful treatment of tuberculosis, pulmonary or otherwise, as certainly underlie the treatment of this disease in the bones and joints as they do anywhere else, and that one who attempts this kind of surgery without being in a position to follow out the treatment other than operative had much better forego the operative measures in the majority of instances and give his patients the benefit of nature's restorative measures. Joints which have suffered from tuberculosis infection in childhood, relapsing in adult life, yield the best results if ankylosis can be secured in a good position. If motion is present, together with deformity, the deformity should be corrected, provided there are as many as twenty-five degrees of motion; if less motion than this, and deformity exists, it should be corrected and ankylosis secured at the same time. If deformity is present with ankylosis, the ankylosis should be left alone, and the deformity overcome. If motion without deformity is present and this motion is less than the above mentioned number of degrees, it is safer to secure ankylosis, as the irritation of so few degrees of motion tends to stir up latent disease. This would be called for, of course, unless there were symptoms of oft-repeated joint strain or active disease.

51. **The X-Ray In Bone Tuberculosis.**—Peckham reports five cases of bone tuberculosis, treated with the *x*-ray, as an auxiliary to other treatment, three times a week. All the cases were suppurative, two of them being considered desperate. One is put down as a failure, although even here there was slight temporary improvement, two were markedly improved, while the two desperate cases were practically saved from amputation, one being a knee, the other an elbow.

Physician and Surgeon, Ann Arbor, Mich.

July.

55 *Experiences in Kidney Surgery and the Utility of Diagnostic Aids. C. H. Chetwood, New York.
56 Ascending Neuritis. W. J. Herdman, Ann Arbor.
57 Psychotherapeutics of Neurasthenia. J. C. Solis, Ann Arbor.

55. **Kidney Surgery and Utility of Diagnostic Aids.**—As the result of careful study of personal cases, and an examination of the literature on the subject, Chetwood concludes as follows: In profuse suppuration of the kidney, or multiple abscess of either kidney, there is a question whether nephrotomy or nephrectomy should be primarily resorted to—a question that can only be properly decided on the merits of each case involved. There is no doubt that a very small remnant of kidney structure may perform a certain amount of renal function; and primary nephrotomy and drainage will often give time to decide this question more satisfactorily; and some patients may sustain a secondary better than a primary nephrectomy. General systemic infection may be considered in indication for both primary and secondary nephrectomy. As to lithiasis: The same rules may be applied in the treatment of the kidney itself as are employed in suppuration with renal calculi. There is no question that nephrotomy is the operation indicated in aseptic lithiasis. As to tuberculosis of the kidney: Even when there is a vesical and pulmonary involvement the only resort of reasonable promise is nephrectomy when the integrity of the opposite kidney is established. Generally speaking, in urogenital tuberculosis, removal of the primary focus, which is frequently in the kidney, is likely to exercise an inhibitory influence on the distal implication—as, for instance, vesical involvement. In subcutaneous injury to the kidney, where there is evidence of a perirenal tumor with hematuria, immediate exploratory incision should be employed and, when possible, suture and tamponade should be resorted to. Where the vessels or ureter have been ruptured and the laceration of the kidney is extensive, or where the injuries are complicated by beginning or progressing suppuration, total nephrectomy may be necessary. Conservative operation is favored by a majority of authors and symptomatic treatment is considered effective in mild cases. A safe rule is to resort to exploratory incision in all doubtful cases and to perform extirpation only when necessary. Above all, too much stress cannot be laid on the importance of the refinement of diagnosis and the advantage of having recourse to the

most improved methods of investigation. The great and progressive reduction of mortality is attributable to diagnostic improvement. Marked differences in mortality between different operators may be explainable by the failure to employ the latest diagnostic resources. Chetwood says that what the compass, the sextant, and the chart are in governing the route of the navigator, so are the microscope, the cystoscope and the *x*-ray in directing the course of the surgeon through the obscure realm of kidney surgery.

Annals of Otology, Rhinology and Laryngology, St. Louis, Mo.

June.

58 Deflections of the Nasal Septum: Critical Review of the Methods of Their Correction by the Window Resection. O. T. Freer, Chicago.
59 The Nose and Its Accessory Sinuses in the American Bear. J. M. Ingersoll, Cleveland, Ohio.
60 Stricture of the Eustachian Tube in Aural Diseases, and Its Treatment. W. S. Bryant, New York.
61 Collodion: Its Use When the Membrana Tympani and Malleal Ligaments are Relaxed. W. S. Bryant, New York.
62 The Cause and Treatment of Hay Fever. W. Dunbar, Hamburg.
63 Serum Treatment of Hay Fever. H. W. Lord, St. Louis.
64 Otitis Media Mucosa. J. E. Sheppard, Brooklyn.
65 Otogenous Infectious Thrombophlebitis Without Fever. G. Alexander.
66 *Submucous Window Resection of the Nasal Septum. G. Killian, Freiburg, Germany.
67 *Submucous Resection of the Nasal Septum, New Technic with the Author's Swivel Knife, Reducing the Average Time of the Operation Several Minutes. W. L. Ballenger, Chicago.

66. **Submucous Window Resection of Nasal Septum.**—Killian describes, in detail, the operation devised by him and first reported in 1899. Two hundred and twenty patients have been operated on by Killian and his assistants according to this method. The submucous resection of the septum can be both temporarily and permanently contraindicated. The latter applies to people of advanced age, unless there are important reasons for interference. Small children are also not good subjects for such an operation as their nasal proportions are small and the narcosis is not so satisfactory. From 12 years on, however, the operation generally can be performed. Various chronic constitutional diseases are contraindications to operation. In pulmonary tuberculosis, one should operate only during the early stages, and then only on well-nourished patients with a good prospect of a standstill or healing of their disease. Killian never operates on patients with temporarily healed nasal lupus, because of the danger of a recurrence and an extension of the process. The operation is temporarily contraindicated on all patients with an acute process in the region of the nose, especially an acute rhinitis. If there exists a decided purulent secretion it is best to put off the operation until there is a marked improvement, unless urgent reasons for operating are present. Patients suffering with tertiary syphilitic lesions in the nose must not be operated on until healing has taken place and a long time has elapsed without recurrence. The essential feature in the technic of the operation is that by means of a long speculum, Killian makes a median space between the two mucous layers of the septum, in which he can operate as easily as in the inside of either nasal cavity. The entrance to this space is the incision which becomes rectangular in shape through the use of the speculum. All the other parts of the operation group themselves about this fundamental idea. The operation is completed in about twenty minutes.

67.—See abstract in The Journal, August 12, 1903, page 495.

American Journal of Urology, New York.

July.

68 *Clinical and Experimental Studies Concerning the Pathogenesis of Epididymitis Gonorrhoica. M. Oppenheim and O. Low, Vienna.
69 Present-Day Status of Tuberculosis of the Male Genital Organs. E. R. W. Frank, Berlin.
70 Untoward Results of Perineal Prostatectomy. G. S. Whiteside, Portland, Ore.
71 Syringe Versus the Irrigator in Gonorrhea. F. C. Valentine and T. M. Townsend, New York.

68. **Pathogenesis of Epididymitis Gonorrhoica.**—Summing up the results of their observations and experiments, Oppenheim and Loew find certain peculiarities in the origin of this affection. As causes they found besides violent muscular exertion, mechanical or chemical irritations of the posterior urethra, and ejaculations of semen. In a great number of cases the inflammation does not involve the vas deferens, but localizes itself in the tail of the epididymis, later affecting the other parts of the epididymis and also the vas deferens. The rapidity of the appearance could not be explained, but the experiments and microscopic examination speak against a lymphatic transportation. These properties are explained directly by supposing that the transportation of the process into the epididymis is caused by retroperistalic movement of the vas. Such movement is observed in rabbits, guinea-pigs and man, and it is possible to produce it by all the factors which could cause an epididymitis, such as violent trauma, and irritation of the caput gallinaginis. It is an important factor in every ejaculation. Furthermore, it is possible to produce epididymitis experimentally in rabbits, if cocci are present in the posterior urethra, by this retro-peristaltic movement, quite analogous to human gonorrheal epididymitis. As to the theory of the affection, the authors emphasize that the application of instruments of any kind is contraindicated in acute posterior urethritis, and that every necessary exploration of the prostate must be made with great caution. The patient must refrain from sexual excitement and violent muscular exertion. The more severe the posterior urethritis, the greater the danger. If epididymitis exists on one side, all local treatment of the posterior urethra should be suspended because there is danger of the other epididymis becoming affected. In subacute and chronic posterior urethritis, when gonococci are still present, the use of irritating injections should be avoided.

Wisconsin Medical Journal, Milwaukee.

June.

72 Address of President of State Medical Society of Wisconsin. C. W. Oviatt, Oshkosh.
73 State Society, State University and State Medicine. C. R. Bardeen, Madison.
74 Surgical Treatment of Posterior Malpositions of Uterus. G. A. Carhart, Milwaukee.
75 Meningitis. M. D. Bird, Marinette.
76 *Problem of Tuberculosis. V. C. Vaughan, Ann Arbor, Mich.
76½ *Ectopic Pregnancy. W. C. F. White, Milwaukee.
77 Hemorrhagic Disease of Newly Born. C. Flett, Waterford, Wis.

76.—See abstract in The Journal, June 24, 1905, page 2003.

76½. **Id.**—June 24, 1905, page 2004.

Detroit Medical Journal.

June.

78 Individual Factor in Hygiene. R. C. Cabot, Boston, and P. K. Brown, San Francisco.
79 Chemistry of Digestion. C. D. Aaron, Detroit.
80 "Inferences" of William Beaumont Concerning Gastric Digestion. H. M. Rich, Detroit.

Surgery, Gynecology and Obstetrics, Chicago.

July.

81 Iodin in Surgery, with Special Reference to Its Use as an Antiseptic. N. Senn, Chicago.
82 New Plan of Procedure in Retrouterine Displacements. E. E. Montgomery, Philadelphia.
83 Short Incisions in Certain Common Operations. W. Van Hook, Chicago.
84 *Postoperative Vomiting. E. Boise, Grand Rapids, Mich.
85 Appendicitis and Pregnancy. J. C. Webster, Chicago.
86 *Sudden Death During or Immediately After the Termination of Pregnancy or Operation on the Pelvic Organs in Women. E. P. Davis, Philadelphia.
87 *Pernicious Vomiting of Pregnancy. J. W. Williams, Baltimore.
88 *Clinical Types of Pregnancy Toxemia. J. C. Edgar, New York.
89 *Appendicitis Complicating Pregnancy. H. C. Coe, New York.
90 Vaginal Cesarean Section: Its Indications, Advantages and Technic. H. D. Fry, Washington, D. C.

84.—See abstract in The Journal, June 17, 1905, page 1954.

86. **Id.**—June 17, 1905, page 1957.

87. **Id.**—June 17, 1905, page 1956.

88. **Id.**—June 17, 1905, page 1956.

89. **Id.**—June 10, 1905, page 1878.

Medical Fortnightly, St. Louis, Mo.

July 10.

91 Cancer and Its Treatment. W. S. Bainbridge, New York.
92 Relation of Man to Nature (A Study Prompted by Testimonies of the Sepulchres). A. S. Ashmead, New York.
93 Albuminuria. C. E. Cole, Jacksonville, Ill.
94 Warner-Ziemann-Romanowsky Staining Method. L. H. Warner, New York.
95 Anatomic Eponyms. R. S. Gregg, Chicago.

July 25.

96 Case of Raynaud's Disease. W. L. Howard, Baltimore.
97 *American Medical Association: Its Origin, Progress and Purpose. L. S. McMurtry, Louisville, Ky.
98 Relation of Man to Nature. A Study Prompted by "Testimonies of the Sepulchres." (Continued.) A. S. Ashmead, New York.
99 Injuries to the Spinal Column. C. E. Black, Jacksonville, Ill.
100 Anatomic Eponyms. (Continued.) R. S. Gregg, Chicago.

97. **Id.**—July 15, 1905, page 145.

Virginia Medical Semi-monthly, Richmond.

July 21.

101 Acute and Chronic Gastritis, Diagnosis and Treatment. M. O. Burke, Honaker, Va.
102 When Shall We Use the Forceps? N. H. Reeve, Bristol, Tenn.
103 Physical Therapeutics. J. C. Walton, Chase City. Va.
104 Principles of Surgery. S. McGuire, Richmond, Va.

St. Paul Medical Journal.

July.

105 Colles' Fracture. J. Knott, Dublin, Ireland.
106 Preliminary Discussion of Workingmen's Insurance Against Tuberculosis. H. L. Ulrich, Minneapolis.
107 Extra-Routine Views of Tuberculosis Pulmonalis. R. M. Phelps, Rochester, Minn.
108 Gastric Cancer. J. W. Bell, Minneapolis.
109 Suggestions Concerning the Treatment of Some Common Forms of Nervous Disease. C. E. Riggs, Minneapolis.

Mobile Medical and Surgical Journal.

July.

110 Blood Smears—Their Diagnostic Value. J. B. Guthrie, New Orleans, La.
111 Pancreatic Cyst. C. Wilson, Birmingham, Ala.
112 Hip Joint Complications in Typhoid. M. Pitts, Selma, Ala.
113 Diagnosis and Medical Treatment of Some Forms of Kidney Disease. H. G. Perry, Greensboro, Ala.

New York State Journal of Medicine.

July.

114 Cerebrospinal Meningitis. H. Brooks, New York.
115 Acute Intestinal Intussusception. D. C. Moriarta, Saratoga Springs, New York.
116 Treatment of Acute Otitis Media. C. S. Payne, Liberty, N. Y.
117 Need of Sexual Education. E. L. Keyes, Jr., New York.
118 Dislocation of Foot Backward, Without Fracture of Bones, or Rupture of Ligaments, Which is Irreducible. G. C. Bayley, Poughkeepsie, N. Y.
119 Unilateral and Other Unusual Forms of Nystagmus. A. Duane, New York.
120 Surgical Treatment of Gastric Ulcer. J. F. Erdmann, New York.
121 Selection and Administration of the Anesthetic. J. T. Gwathmey, New York.
122 Dynamics of Female Pelvis, with Special Reference to Malpositions of Uterus and Their Treatment. G. C. Childs, New York.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional interest.

British Medical Journal.

August 5.

1. The State and the Profession, Address British Medical Association. J. M. Rhodes.
2 The Professional Relations Between Spa Doctors and Their Brethren. A. Mouillot.
3 *Experimental Contribution to the Treatment of Cholelithiasis. W. Bain.

3. **Cholelithiasis.**—The experiments described by Bain were undertaken to ascertain the changes undergone by gallstones introduced into the normal gall bladder, and the fat of such calculi when cholecystitis was artificially produced. Various substances were also given to dogs with cholecystitis in the hope of finding a remedy. The operative procedures were as follows: After the animal was anesthetized the skin of the abdomen was prepared, and a median incision two or three inches long was made from the xyphoid downward. The gall bladder was drawn forward and held by Spencer Wells forceps. It was then incised, the bile soaked up and the stones inserted. Sutures were applied in the usual way, and in a majority of the experiments the gall bladder was stitched to the abdominal wall; in others it was dropped back into the abdominal cavity. When Bain wished to set up cholecystitis, a culture of the *Bacillus coli communis* in normal saline solution was injected into the gall bladder before the last stitch was inserted. Bain found that gallstones introduced into a normal gall bladder become dissolved within a comparatively short space of time, in about eight or nine weeks. That when a mild degree of cholecystitis is set up gallstones inserted into the gall bladder do not disappear, although there is always a reduction in weight. That the introduction of various drugs does not appear to have any effect in resolving calculi introduced into a gall bladder the mucous membrane of which is inflamed. That during a course of the sulphur water gallstones become disintegrated in cases of cholecystitis experimentally induced. That in the treatment of artificially produced cholelithiasis a preparation containing hexamethylenamin has a pronounced effect in causing dissolution of the calculi. That in regard to the action of barium chlorid further experiments are necessary to determine its rôle in experimentally-produced cholelithiasis.

The Lancet, London.

August 5.

4 Chemical Correlation of the Functions of the Body. E. H. Starling.
5 Carbohydrate Metabolism. F. W. Pavy.
6 *Spa Treatment of Circulatory Disorders. L. Williams.
7. Surgery at Sea: Case of Perforating Duodenal Ulcer; Operation; Recovery. H. W. Bayly.
8 *Behavior of Leucocytes in Malignant Growths. J. B. Farmer, J. E. S. Moore and C. E. Walker.
9 Cerebrospinal Meningitis in Ceylon. A. Castellani.
10 Analysis of 300 Consecutive Gynecologic Laparotomies. A. H. N. Lewers.
11 Case of Blackwater Fever. E. S. Crispin.
12 Two Cases of Acute Hemorrhagic Pancreatitis. H. W. Webber.

6. **Spa Treatment of Circulatory Disorders.**—Williams discusses the therapeutic value of the various European spas, particularly Bad Nauheim. He says that the Nauheim treatment can be obtained elsewhere than at Bad Nauheim and that this spa possesses many unpleasant features and some decided disadvantages. From the points of view of climate and accessibility Nauheim is by no means a place to which a cardiac patient should be advised to go. The treatment by Nauheim baths is quite unsuited to the great majority of cardiac disorders, and its indiscriminate recommendation, even when dilatation is the most prominent objective feature, is by no means free from danger. In deciding on the respective claims of the numerous spas at which cardiovascular diseases may be treated, it is necessary to take into consideration various factors. In general, it may be said, that any spa at which gout is properly treated is, potentially at any rate, a spa suitable to a cardiac lesion. It must be remembered, however, that physicians at such resorts are not, as a rule, in the habit of dealing with cardiac disorders; and, furthermore, that certain health resorts, the waters of which are well adapted to the gouty, have specialized in troubles of the cardiovascular system. To get the best results from spa treatment, patients should be treated in the earliest stages, in the stage of arterial spasm, which has not as yet led to organic change.

8. **Behavior of Leucocytes in Malignant Growths.**—Farmer, Moore and Walker give an account of observations relating to the peculiar behavior of leucocytes in very early examples of carcinoma in various parts of the human body. The phenomena described appeared to be mainly, if not entirely, restricted to cancer in its earliest stages and did not occur in older growths, in metastases, or in grafts introduced into other individuals. In a rectal carcinoma the size of a bean it was found that there was a very distinct zone of transition from the normal to the cancerous element round the periphery of the tumor. Immediately within the outer zone the leucocytic crowding was most strikingly apparent, and in a number of cells it was easy to discern the presence of leucocytes which had invaded the epithelial cells, where they stained readily as an inclusion. This phenomenon did not occur in the adjacent healthy tissue nor in inflammations produced artificially. The most important, as well as the most singular, feature lies in the fact that neither the leucocyte nor the invaded tissue cell appeared to be affected injuriously. In many instances it was found that both the leucocyte and the tissue cell were dividing mitotically at the same time. The authors believe that a mixture of the chromosomes derived from the leucocyte and tissue cell, respectively, is distributed between the daughter nuclei resulting from the mitosis. In this way a complete disturbance of the normal chromosome constituents of the cell will be effected and the distribution must be of a qualitative as well as of a quantitative character. What its relation to the ultimate reduction that

occurs in neoplastic cells may be is a subject for further investigation.

The Practitioner, London.

August.

13 Pathologic Variations of Physiologic Vasomotor Action with Special Reference to the Malarial Paroxysmal Neuroses. F. Hare.
14 *Intestinal Obstruction After Pelvic Operations, Particularly After Supravaginal Hysterectomy. E. M. Corner.
15 Edema of the Feet and Legs Due to the Excessive Ingestion of Sodium Chlorid. J. H. Bryant.
16 Diffuse Carcinoma of the Stomach, Illustrated by Two Extreme Cases. E. W. H. Groves.
17 Hydrocephalus and Posterior Basic Meningitis. O. Hildesheim.
18 Current Theories Regarding the Causation of Arteriosclerosis. J. M. Cowan.
19 Work of the Pancreas. W. L. Brown.

14. **Intestinal Obstruction After Pelvic Operations.**—The object of Corner's paper is to enunciate two propositions: First, the small intestines are only too prone to become adherent to the uterine stump left after supravaginal hysterectomy; and, second, that the reasons for this are to be found in the nature and technic of the operation as it is usually performed. The operation which stands pre-eminent among all others in causing this complication is supravaginal hysterectomy. The presence of the uterine stump among the small intestines undoubtedly disposes them to become adherent. Corner suggests that there are means of obviating these occurrences. The stump should be sealed off quickly and in such a manner that the peritoneal edges do not gape. The best method of suturing a uterine stump consists of deep stitches, with intermediate ones, taking up little more than peritoneum, in between. Stitches must not be tied too tightly, but just sufficiently to sink the thread in a groove in the stump. A long posterior flap is the one which is most useful. It covers the cervical stump of the amputated uterus, a continuous suture fixes it to the bottom of the uterovesical pouch, at the same time anteverting the stump so that it covers and protects the line of stitching from the intestines, preventing them from becoming adherent.

Journal of Tropical Medicine, London.

August 1.

20 Spirillosis in Portuguese, West Africa. A. Y. Massey.
21 The Aborting of Liver Abscess: Plea for Early Punctures. P. N. Gerrard.
22 Administrative Measures Taken Against Malaria and Consumption in the Tropics. R. C. Temple.
23 Equipment and Hygiene on "Shooting Trips." G. A. P. Ross.
24 Impaction of the Bowels with Inflammation and Perityphlitis. G. H. Fink.

Virchow's Archiv, Berlin.

25 (CLXXX, No. 1.) Fatty Infiltration and Fatty Degeneration of Kidney.—Ueber Fett-Infiltration und fettige Degeneration der Niere des Menschen. M. Löhlein.
26 Ueber die Thyroidea von Kretinen und Idioten. S. Getzowa (Berne).
27 Mucous Zone of Epithelium of Stomach and Intestine Before and After Birth.—Schleimzone des menschlichen Magen und Darmepithels vor und nach der Geburt. E. v. d. Leyen (Berlin).
28 Lymphoid Tissue in Mucosa of Male Urethra.—Ueber das Vorkommen lymphoiden Gewebes in der Schleimhaut der männlichen Urethra. Busch.
29 Ueber Gliome der Nebennieren (of suprarenals). H. Küster.
30 Zur Pathogenese der Varicen. W. Kallenberger.
31 Ueber Phlebektasie. G. Scagliosi (Catania).
32 Zur Frage der Entstehung des Chorionepithelioms aus congenitaler Anlage. L. Pick
33 Aetiologie der primären Nebenhoden-Tuberkulose (of epididymis). E. Hartung.
34 (CLXXX, No. 2.) Zur Kenntnis der Blut-Fermente (of blood). A. Jolles and M. Oppenheim.
35 Experimentelle Untersuchungen über das Adrenalin. B. Wolownik.
36 *Action of Electricity on Stomach Functioning.—Experimentelle Untersuchungen über die Einwirkung der Elektrizität auf die sekretorische Tätigkeit des Magens. R. Freund.
37 Die Sympathischen Ganglien des Magens bei einigen experimentellen und spontanen Magen-Krankheiten. L. d'Amato and P. Macri.
38 Fall von spontaner Herz-Ruptur (of heart). C. Hart.
39 Angioma racemosum und serpentinum des Gehirns (of brain). M. Simmonds.
40 Genese des Adeno-Karzinoms und Karzinoms des Pankreas. S. P. L. Hulst.
41 Die sogen. congenitale Pylorus-Hyperplasie eine Entwicklungs-Störung. Torkel.
42 Deformities in Caudal End of Fetuses.—Abnormitäten am Schwanzende menschlicher Foeten. R. Meyer.
43 Ueber Amyloid-Degeneration and Amyloid-Färbung (staining). Edens.
44 Verfahren zur Erzielung haltbarer Amyloid-Präparate (durable specimens). P. Meyer.
45 Metal Stain for Calcified Tissue.—Ueber Metalfärbung verkalkter Gewebeteile. W. Stoeltzner.
46 (CLXXX, No. 3.) Experimentelle Beiträge zur Aetiologie des primären Verbrennungstodes (death from burning). H. Pfeiffer.
47 Ueber Lymphocyten-Granula. Levaditi.
48 Entstehung der echten, freien Gelenkkörper (origin of free bodies in joints). H. Rimann. Experimental.
49 Ueber das Aneurysma am Stamme der Pulmonal-Arterie. M. Lissauer.
50 Action of Allyl Mustard Oil on Liver and Kidneys.—Wirkung des Allylsenföls auf Leber und Niere. P. Meyer.
51 Tissue Changes in Displaced Testicles, Epididymis and Vas Deferens.—Gewebsveränderungen des verlagerten Hodens, etc. M. Matsuoka.
52 Der primäre Leberkrebs zugleich ein Beitrag zur Histologie des Krebses. H. Oerter (New York).
53 Blut-Gefäss-Endotheliom, entstanden auf dem Boden von Hämorrhoiden. E. Schlesinger.
54 Ueber eine besondere Drüsen-Formation in der Prostata glandular formation). A. Rothschild.
55 Aetiologie der Prostata-Hypertrophie. Id.
56 Ueber einen weiteren Fall von abdomineller Nebenlunge (abdominal accessory lung). A. Seltsam.
56½ Gliome der Nebennieren (of suprarenals). J. Wiesel.

36. **Action of Electricity on Secretion of Gastric Juice.**—In Freund's experiments on three dogs with old Pawlow fistulas electric stimulation of the stomach caused nothing more than the secretion of a scanty, mucous and a more or less strongly alkaline secretion. The stomach glands did not react with the production of gastric juice except with the natural stimulus of food. The electricity alone was unable to induce the specific secretion.

Wiener klinische Wochenschrift.

Last indexed page 600.

57 XVIII, No. 23.) *Anatomic Signs of Antemortem and Postmortem Burns.—Ueber die anatomischen Kennzeichen der vitalen und postmortalen Verbrennung. F. Reuter.
58 Beiträge zur Pathologie der Vulvitis. O. Sachs.
59 Hay Fever and Its Specific Treatment with Pollantin.—Das Heufieber und seine spezifische Behandlung mit Pollantin. A. Heindl.
60 (No. 24.) Der Micrococcus meningitis cerebrospinalis als Erreger von Endokarditis sowie sein Vorkommen in der Nasenhohle Gesunder u. Kranker (presence in nose in health and in disease and as a cause of endocarlitis). A. Weichselbaum and A. Ghon.
61 Zur Dynamik der Mitral Insuffizienz. (Dynamics of.) E Schwarz.
62 Differentiation of Semen Albumin.—Beiträge zur Lösung des biologischforensischen Problems der Unterscheidung von Spermaeiweis gegen über den anderen Eiweisarten derselben Spezies durch die Präzipitinmethode. H. Pfeiffer.
63 *Zur operativen Behandlung der habituellen Luxation der Kniescheibe nach Ali Krongius (habitual luxation of patella). R. v. Rüdiger.
64 *(No. 25.) Zur operativen Behandlung des subphrenischen Abszesses. P. Clairmont and E. Ranzi.
65 *Negri Bodies in Rabies.—Zur Kenntnis der Negrischen Körperchen bei der Wutkrankheit. J. Schiffmann.
66 *Negri Bodies in Rabies.—Ueber die feinere Struktur der Negrischen Körper. R. Maresch.
67 Das Aggressin Coli Bakterium mit mitbesonderer Rücksicht auf seine Spezifität. G. Salus.
68 Growth of Hay Bacillus in Animal Body.—Ueber die Wachstumsmöglichkeit des Heubazillus im Tierkorper. E. Weil.
69 Chemistry of the Colloids in Research on Immunity.—Anteil der Kolloidchemie an der Immunitätsforschung. H. Bechold.
70 (No. 26.) Ueber Pellagra sine Pellagra. T. Lupu.
71 Ueber die Agglutinabilität der Kapsel Bakterien. O. Porges.
72 *Weitere Mitteilung uber Rückenmarksanaesthesie (spinal analgesia). J. Preindlsberger.
73 (No. 27.) Ueber primäre maligne Degeneration der zystischen embryoiden Geschwulste der Ovarien (embryonic ovarian tumors). H. Ludwig.
74 Ueber Antihämolysine. M. v. Eisler.
75 Beitrag zur Aetiologie und Behandlung der multiplen Sklerose. G. Nespor.
76 Ueber den Fusohlenreflex und das Babinskische Phänomen bei tausend Kindern der ersten Lebensjahre (plantar reflex and Babinski in children). A. Bickel.

57. **Differentiation of Antemortem and Postmortem Burns.**—Reuter believes that it is impossible to determine by examination of the cadaver whether a burn of the first, second or third degree occurred during life or after death. The viscera should be examined for carbon particles and evidences of carbonic oxid asphyxiation. Serous blebs may form on edematous parts, hence they do not indicate that the burn occurred during life.

63. **Habitual Luxation of Patella.**—Ruediger's patient was a girl 10 years old, who sustained a severe injury of the patella which was followed by a habitual luxation of this bone, the result of improper treatment. The knee joint was very painful and at times became swollen. The patient was operated on according to the method of Ali Krogius, which the author believes to be the ideal operation for this class of cases. The patient made a perfect recovery.

64. **Operative Treatment of Subphrenic Abscesses.**—Clairmont and Ranzi cite ten cases, seven males and three females,

most of whom were between the ages of 20 and 30, in three cases the abscess emptied itself through the appendix. In eight cases the abscess was situated on the right side; in two on the left side. In one case the abscess was situated between the stomach, spleen and colon. All the abscesses were intraperitoneal. Tympanites appeared in five cases. In one case it was caused by the *Bacillus paracoli aerogenes*. In diagnosing this condition the authors found the Roentgen ray of value, particularly in cases showing obscure symptoms. Fluoroscopy was also used successfully. Two of the patients operated on died, one on the eighteenth day from peritonitis. The other case offered little hope of a successful outcome at the time of operation. Seven patients made a complete recovery. Two of the patients were operated on according to the method of Grueneisen. In four cases the abscess was opened by making an incision in the chest wall along the margin of the ribs, without entering the pleura. In the remaining four cases the abscess was evacuated through the lumbar region.

65. **Negri Bodies in Rabies.**—Schiffmann found these bodies in eight rabid dogs and in two men. He divides them into three kinds: 1. Large, irregularly formed bodies containing a large number of sharply-defined ringlike structures. 2. Forms containing only one variety of these internal structures. 3. Forms having a homogeneous structure. He says that it is impossible to state whether these bodies represent parasites or a degeneration of the cell protoplasm. It is just as possible that the Negri bodies are the result of the infection as that they are the cause of rabies.

66. **Id.**—Maresch confirms the work of other investigators and urges further experimentation for the purpose of determining definitely the nature of these so-called cell inclusions.

72. **Spinal Analgesia.**—Preindlsberger cites his experiences in the production of spinal analgesia. He uses a metal syringe, which may be taken apart. It has a capacity of one gram. The injection is made with the patient in Bier's side position. Preindlsberger has operated under spinal analgesia in 345 cases; all but 8 of these have been followed. A complete list is given of all the cases. Only one of his patients suffered from shock and collapse, although 6 others were slightly indisposed.

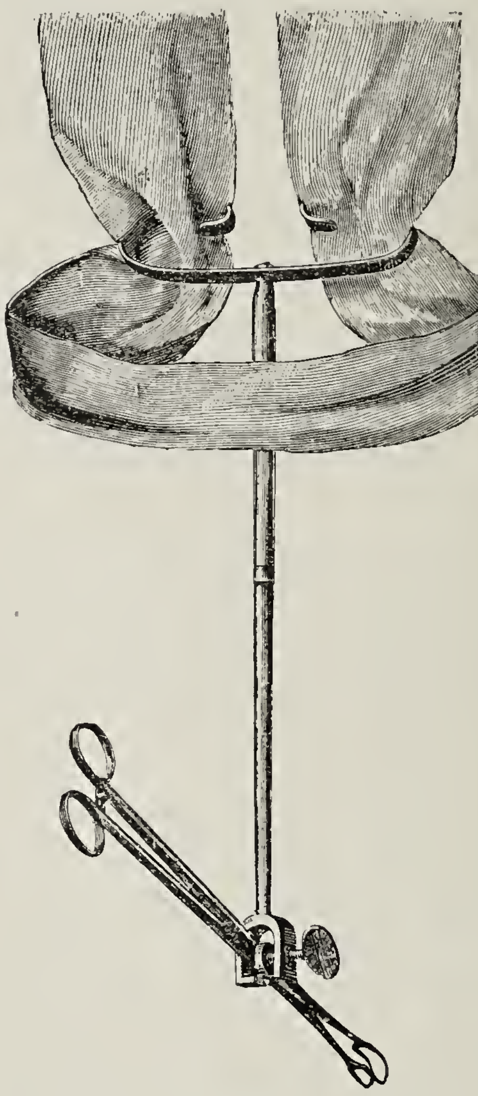
Centralblatt f. Gynäkologie, Leipsic.

Last indexed page 499.

77 (No. 28, July 15, 1905.) *Schwangerschaft und Carcinoma recti. (Pregnancy and). G. C. Nijhoff.
78 Zur Anatomie des Lateralschnittes (Anatomy of Lateral Incision). J. Tandler.
79 (No. 29, July 22, 1905.) *Die Sectio Caesarea an der Klinik Schauta. J. Neumann.
80 Sectio caesarea conservativa bei Tympania uteri. A. Mueller.
81 Ueber das Hæmatoma vulvæ et vaginæ. H. Walther.
82 (No. 30, July 29, 1905.) Platzen Sauerstoffflaschen leicht? (Do ether containers burst easily?) O. v. Herff.
83 *Neues Verfahren zur Entwicklung des abgerissenen, in utero zurückgehaltenen Kopfes (new method of extracting severed head from the uterus). M. Bensinger.
84 (No. 31.) *Bluntuntersuchungen bei Unterleibsleiden der Frauen, besonders bei Uterusmyomen (blood examinations) in women ill with pelvic diseases, especially myoma of uterus). G. Klein.
85 *Zwei Assistenz ersetzende Instrumente (instruments taking the place of two assistants). C. Rindfleisch.

77. **Pregnancy and Carcinoma Recti.**—A case of carcinoma recti complicating pregnancy, occurring in a woman 18 years old, is reported by Nijhoff. The carcinoma was inoperable. The pregnancy had advanced to the seventh month. At the beginning of the eighth month she developed symptoms of sepsis and died in a few days after the infant had been delivered by forceps. The child was placed in an incubator. Nijhoff refers to 22 published cases. In closing he says that if the child is not viable the operator must choose between induction of labor and waiting until the child is viable. He believes that the former is preferable, inasmuch as it is extremely probable that during the time of waiting an operable tumor may be converted into an inoperable tumor.

79. **Cesarean Section at Schauta's Clinic.**—Neumann reports on 175 cases of Cesarean section in Schauta's clinic during the past twenty years. Of this series 14 patients died, a mortality of 8 per cent. Six of these patients, however, did not die as the result of the operation, but from other causes, thus leaving only 169 cases with 8 deaths, a mortality of 4.7 per cent. As for the babies, 165 were born alive, 9 were born dead and one was asphyxiated during delivery and died one-half hour afterward. In 158 of these cases a contracted pelvis was the indication for operation. In 6 cases there were stenoses of the soft parts; in 3 cases tumors of the adnexa, and in one case a malignant tumor of the pelvis obstructed the outlet. Five cases of eclampsia and 2 of septic endometritis were also indications for operation. In 47 cases the pelvic contraction was absolute. These patients were operated on as follows: Conservative longitudinal incision (including 2 cases of osteomalacia), 27 cases; longitudinal incision with castration (osteomalacia), 1; conservative transverse fundus incision, 1; transverse fundus incision with castration (osteomalacia), 3 cases; transverse fundus incision with resection of tubes, 5 cases; Porro operations, 9 cases; in 7 cases the uterus was opened by longitudinal incision, in 2 by a longitudinal incision over the fundus (two of these cases were not positively aseptic and 7 patients had osteomalacia). In one case of osteomalacia hysterectomy was done after the Cesarean section. In the 111 cases of relative contractions of the pelvis the following procedures were carried out: Ninety conservative longitudinal incisions; 1 conservative longitudinal incision over the fundus; 1 longitudinal incision with resection of the tubes; 12 conservative transverse fundus incisions, and 7 transverse fundus incisions with resection of tubes. Among the operations performed on the 6 patients with stenosis of the soft parts were 2 conservative longitudinal incisions (1 carcinoma cervicis and 1 congenital stricture of the vagina); 1 transverse fundus incision with resection of the tubes (cicatricial stenosis of the vagina); 2 Porro operations with longitudinal incisions (cicatricial stenosis of the vagina), and one Porro operation with transverse fundus incision (carcinoma cervicis). In the 5 cases of eclampsia a Porro operation with longitudinal incision was done once, and the conservative longitudinal incision four times. In the total number of cases the Porro operation was done 15 times, hysterectomy once, and ablation of the adnexa 18 times.



Forceps and bandage holder (see abstract 85, page 745).

83. **Method of Extracting Severed Head from Uterus.**—The method employed by Bensinger consists in applying a pair of bullet forceps to the cervical vertebræ, and tamponing the uterus and cervix with iodoform gauze, and the vagina with cotton. A piece of string was attached to the forceps, passed

over the foot of the bed and weighed about four pounds—a sort of tension extraction. In the cases reported there was uterine inertia, but the method adopted proved successful, the cervix being dilated sufficiently to allow of the passage of the head.

84. **Blood Examinations in Pelvic Disease.**—Klein emphasizes the value of blood examinations in women as a means of diagnosis and prognosis in cases of pelvic disease, especially in myoma of the uterus, and cites several cases.

85. **New Instruments.**—Rindfleisch has devised two instruments to take the place of assistants, thus permitting the surgeon to do minor gynecologic operations at the patient's home in cases of necessity. One is a forceps and bandage holder (p. 744), consisting of an open metal loop, with the ends turned in, attached to a rod, at the other end of which is a set-screw. The rod is made in two parts so that it can be shortened or lengthened as may be necessary. The forceps are held in place by means of the set-screw, whereas the bandage is held by the loop. The second instrument is a self-retaining speculum patterned after the Sims model, to which a 350 gram weight is attached.

Centralblatt für Chirurgie, Leipsic.

Last indexed page 429.

86 (No. 28, July 15, 1905.) Wie entsteht die Thrombose der Vena iliaca externa links nach der Appendicektomie? Cause of thrombosis of left external iliac vein following appendicectomy. O. Witzel.
87 (No. 29, July 22, 1905.) *Ein Ligaturring (ligature ring). A. Stieda.
88 (No. 30, July 29, 1905.) *Zur Chirurgie der Halsdrüsen (surgery of neck glands). A. Most.
89 Die Halbseitenlage bei Operation der Perityphlitis (semidorsal position in operation for perityphlitis). K. Försterling.
90 (No. 31.) Zur Frage der Osteochondritis dissecans. König.
91 *Eine einzeitige Operation der Hypospadia penis und penoscrotalis mit vorausgehendem Perinealschnitte (single sitting operation for hypospadia penis and penoscrotalis with preliminary perineal section). H. Vulliet.

87. **Ligature Ring.**—Stieda describes a so-called ligature ring devised by v. Bramann. It consists of three parts, a ring provided with an adjustable clutch and carrying a firmly fixed rod on which revolves a metal spool, on which the ligature is wound. Over this ligature spool a perforated metal cap is pushed, completely covering the spool. The end of the ligature passes through one of the perforations in the cap. The ring is placed on a finger of the left hand, thus doing away with useless handling of the ligature. The ring is easily sterilized. Stieda prepares the silk by immersing it in ether for twenty-four hours, and then boiling it for half an hour in a 3 per cent. carbolic acid solution. It is then wound on the spool and boiled again for half an hour in the 3 per cent. carbolic acid solution.

88. **Semidorsal Position in Operation for Perityphlitis.**—Foersterling, Schlange's assistant, speaks of the latter's custom of placing his patients, after having opened the abdomen, in a left semidorsal position, supporting the right shoulder and buttock so that the body lies from 12 to 15 cm. above the table. This position permits of much more rapid operating by keeping the intestines out of the field and thus enabling the operator to find the appendix quite readily. This position is said to possess all the advantages of elevating the pelvis and none of the disadvantages of the latter method.

91. **Operation for Hypospadia Penis and Penoscrotalis.**—Vulliet's method consists of a preliminary perineal incision and a small urethral incision through which an elastic catheter is inserted into the bladder, thus providing for the outflow of the urine. The penile urethra is then repaired, the choice of method being immaterial. After a few days the perineal catheter is removed and the wound allowed to granulate. This method provides for a one-sitting operation—a distinct advantage.

Münchener med. Wochenschrift, Munich.

92 (LII, No. 25, June 20, 1905.) Importance of Lumbar Puncture in Otology.—Die Bedeutung der Lumbalpunktion für die Ohrenheilkunde. C. Grunert.
93 Der Streptokokken Befund bei Variola und Varizellen in Bezug auf ein differential diagnostiches Verfahren. H. De Waele and E. Sugg.
94 Technic of Vaccination of Eye.—Technik des Guarnierischen Impfexperimentes und seine Verwendung zum Nachweis von Vakzine Erregern in den inneren Organen von Impftieren. Th. v. Wasielewski.
95 Origin of Paraurethral Passages in the Male.—Ueber die Herkunft der parauerthalen Gange des Mannes. A. Lichtenberg.
96 Ueber einen neuen Indikator. E. Fuld.
97 Action and Dangers of Injections of Sublimate in Urethra.—Einwirkung der Sublimatinjektionen auf die Schleimhaut der Harnrohre und ihre Gefahren. P. Asch.
98 Das Antitussin in der Behandlung des Keuchhustens (antitussin in treatment of whooping cough). R. Rahner.
99 Medical Reports from Seat of War.—Aus militärärztlichen Berichten vom Kriegsschauplatz im Fernen Osten. v. Pezold.
100 "Apparat zur Gefrierpunktsbestimmung" (apparatus for determination of freezing point). F. Schlagintweit.
101 Hot Water and Alcohol Disinfection in Obstetrics.—Die Heisswasser Alkoholdesinfektion nach Ahlfeld auf der geburtshilflichen Abteilung des Frauenspitals Basel-Stadt. O. v. Herff. (Commenced in No. 24.)
102 Can a Cure Be Patented?—Ist ein Heilverfahren patentfähig? R. Freund.
103 (No. 26.) Die Körnelungen der Lymphozyten des Blutes (granulation of leucocytes). H. Schridde.
104 *Fatigue Toxin and Antitoxin.—Ueber des Ermüdungstoxin und dessen Antitoxin. W. Weichardt.
105 Zur Theorie der biologischen Strahlenwirkung (action of rays). J. Schlachta.
106 Zur Kenntnis der metaplastischen Knonchenbildung in lymphatischen Apparaten (metaplastic bone formation in lymph tissues). H. Merkel.
107 Treatment of Cryptorchism.—Die Behandlung des Kryptorchismus. A. Schäfer.
108 *Intubation mit Zelluloid Tuben. P. Reich.
109 Die Behandlung der Struma mit Röntgen Strahlen. R. Stegmann.
110 Die Abkürzung der Nachbehandlung akuter Mastoidusoperationen durch Paraffin Füllung (use of paraffin to shorten after-treatment of mastoid operations). E. Schatz.
111 Zur Lehre von der Entstehung der Uterus Blutungen (origin of uterine hemorrhages). A. Theilhaber.
112 (No. 27.) Spirochaete pallida (Schaudinn) und Syphilis. B. Kiolemenoglou and F. v. Cube.
113 Chemical Individuality of Embryonal Cells.—Ueber die chemische Individualität der Embryonalzellen. R. Rossle.
114 Ein Beitrag zur Lehre von den Beschäftigungsparesen (occupation pareses). A. Bittorf.
115 Ist Lysoform giftig (is lysoform toxic)? T. Weylin.
116 Etwas über die Jahresbeule (oriental sore). J. P. Naab.
117 Gaseous Organs in Typhoid.—Schaumorgane bei einem Typhuskranken. F. Reiche.
117½ Ueber Leuchterscheinungen beim Reiben evakuierter Rohren (luminous tubes). R. Furstenau.
118 Bemerkungen über die "Angine a bacillus fusiformes." H. Vincent.
119 Klinischer Beitrage zur Bronchoskopie. H. v. Schrotte. (Commenced in No. 26.)
120 Ueber Urin und Urin Sedimente bei chronischen und lokalen Stauungen, in Endzustanden und im Kollaps (in congestions, etc.). C. Klieneberger. (Commenced in No. 28.)
121 Case of Extrauterine Pregnancy at Term, with Membranous Malformations of Fetus.—Ein Fall von aus getragener Extrauterngravidität, verlumden mit Zahlreichen Weissbildung en der Frucht. G. Wiener.
122 (No. 28.) Aetiologie der Syphilis. J. Siegel.
123 Zur Physiologie und Pathologie der Bauchdeckenreflexe (reflexes of abdominal walls). E. Muller and W. Seidelmann.
124 Avoidance of Irritation of Kidney After Large Doses of Salicylates.—Die Vermeidung der Nierenreizung nach grossen Salizylgaben. E. Frey.
125 Experiences with the Gruber-Widal Test.—Erfahrungen mit der Gruber-Widalschen Reaktion bei Berücksichtigung der Mitagglutination von Paratyphusbazillen. P. Manteufel.
126 Tuberkulose und Schwangerschaft (pregnancy). F. Reiche.
127 Eine Masern Epidemie (2,881 cases of measles). Heissler.
128 What Do We Learn from the Latest Bavarian Blindness Statistics?—Was lehrt uns die neueste bäyerische Blindenstatistik? F. Salzer.
129 Kritische Bemerkungen zur Spirochaete pallida bei Syphilis. C. Thesing.
130 Simplified Butyrometric Test of Stomach Functioning.—Vereinfachung de butyrometrischen Untersuchungsmethode des Magens und die Verwendbarkeit derselben für den praktischen Arzt. Sahli (Berne). (Commenced in No. 27.)
131 Children's Asylums.—Weiteres von deutschen Landerziehungsheimen. O. Katz.

104. **Fatigue Toxin and Antitoxin.**—Through a series of experiments Weichardt found that fatigue toxin is formed in large quantities from muscle albumin by continuous action of the muscles in an atmosphere containing a lessened amount of oxygen. The amount of fatigue toxin is increased by treating it with reducing substances, such as sodium sulphate. Toxins which reduce albumin may also be formed from the placenta, the brain, etc. The antitoxin obtained by repeated injection of fatigue toxin forms a group reaction with these albumin-reducing toxins. Animals injected with both the toxin and the antitoxin are capable of greater resistance to fatigue than animals not so injected.

108. **Celluloid Intubation Tubes.**—Reich has made use of celluloid tubes for intubation purposes. They are light in weight, present a perfectly smooth exterior and interior, are elastic, less likely to produce pressure necrosis, and permit of a large lumen with the thinnest possible wall consistent with strength and firmness. They are disinfected readily by washing in running water and immersion, for a short time, in a weak carbolic acid solution.

Gazzetta degli Ospedali, Milan.

Last indexed page 664.

132 (XXVI, No. 73.) Typhoid Plus Scarlet Fever.—Ileotifo con scarlattine. Allaria.
133 *X-Ray Treatment of Hypertrophied Prostate.—La cura della ipertrofia della prostata coi raggi X. C. Carabelli and C. Luraschi.
134 Morbo di Ménière probabilmente da infezione malarica. G. Spadacci.
135 Oil Extracts in Organotherapy.—Sull'opoterapia a base dei nuovi estaratti oleosi "sofos." L. De Rossi (Genoa).
136 Success of Diphtheria Antitoxin in 2 Cases of Erysipelas.—Il siero di Behring nella erispela della faccia. S. Tomaselli.
137 The Blister.—Il vesicante nella moderna terapia. E. Gugnoni.
138 Convulsions from Helminths.—Pseudo-epilessia da ascardi e la teoria della loro tossicita. S. Radaeli.
139 (No. 76.) Caso di ascite filante con richerche su la reazione degli essudati verso l'acido acetico (acetic test of effusions). E. Pesci.
140 L'anestesia cocaino adrenalinica in chirurgia generale. B. Gennaro.
141 Ascessi traumatici dei lobi frontali (abscess in frontal lobe). E. De Franceschi.
142 Osservazioni culturali sul bacillo della morva (of glanders). A. M. Coco.
143 (No. 79.) *Return of Function in Hydronephrotic Kidney.—Ritorno della funzione nel rene idronefrotico. E. Maragliano.
144 Ataxia and Vertigo in Cerebral-extracerebral Lesions.—Le zone generatrici del fenomeno atassico vertiginoso. S. Mircoli.

133. **Roentgen Treatment of Hypertrophied Prostate.**—Carabelli and Luraschi state that the experiments related in this article were commenced in May and continued through August of 1904, and that they have waited a full year before reporting them in order to ascertain the remote results. No communications in regard to Roentgen treatment of hypertrophied prostate had been published when they undertook it in two cases. The patients were 60 and 65 years of age respectively. They were placed on a sloping table, the surrounding parts carefully protected and the Roentgen rays applied to the perineum, with the tube from 20 to 25 cm. from the skin. Carabelli did not think it necessary to introduce the tube into the rectum as the atrophying action of the Roentgen rays on deep-laying glands like the ovary, spleen and lymphatics has been amply established. It is evident also that the action of the rays on the prostate is more pronounced when the hypertrophy is in the first stage, before the gland has undergone fibrous degeneration. The relief of the pains was marked from the very first. In one case the paresthesia and oppression in the perineum were accompanied by difficulty in urinating and palpation revealed moderate hypertrophy of the prostate. The rays were applied fifteen times, at first two or three times a week and then once a fortnight. The sensory symptoms vanished and urination became very much easier. In the second case the prostate was much enlarged and hard, and there were about 200 gm. of residual urine and evidences of chronic catarrh of the bladder. After six applications of the Roentgen rays the urine became clearer, the pains had subsided, urination was much easier and the residual urine was only 40 gm. After the tenth application there were only 10 c.c. of residual urine, and the patient was dismissed as practically cured. The current was applied for from three to seven minutes at a sitting in the first, and for ten minutes in the second, the current 1.5 amperes, 100 volts. The patients have been examined during the year and recently and the improvement has been found to be permanent.

143. **Return of Function in Hydronephrotic Kidney.**—Bozzi has been conducting considerable experimental research on this subject and is convinced that surgical intervention should be early in case of hydronephrosis, even if the symptoms are not disturbing. It will forestall the development of permanent changes in the tissues of the kidney which otherwise become irreparable. It will also prevent possible infection of the kidney by way of the blood. He cites some suggestive cases to show the importance of these points. In some the cystoscope and catheterization of the ureters showed limpid urine from one kidney and purulent from the other. The kidney with the purulent process was extirpated under the conviction that its mate was sound, but anuria and death soon followed. The hydronephrotic kidney after a conservative operation gradually regains its functional capacity, the extent of restitution being in inverse proportion to the duration of the process. Bozzi's experiences have shown that the microscope discloses much better functional conditions than would be supposed from the macroscopic appearance. Consequently there is every reason to retain the hydronephrotic kidney by a conservative operation.

Siglo Medico, Madrid.

Last indexed page 364.

145 (No. 2680, April 22, 1905.) El Masaje y la Gimnasia Medica en las Afecciones Traumatica de las Articulaciones. Tripels-Dentzkof.
146 *Pelvi-Peritonitis. D. P. Lizcano.
147 (No. 2681.). El somnoformo. M. Bouthelier.
148 Luchemos Contra la Tuberculosis. J. L. de Rego.
149 *Un Caso Clinico de Chancro Palpebral Sifilitico. G. Leoz.
150 *(No. 2682.) Cooperacion al Estudio de la Reparacion Plastica del carrilla (Meloplastia). D. J. Goyanes.
151 Sobre el Diagnostico de los Soplos de la Punta. V. Montenegro.

146. **Pelvic Peritonitis.**—In this article Lizano calls attention to the often forgotten fact that in the beginning of pelvic peritonitis vaginal examination reveals little or nothing beyond a greatly increased sensibility to pain, and that at this stage of the disease the diagnosis must be made from the abdominal symptoms and from the general condition of the patient. After three or four days, he states, when the nausea and vomiting have to a certain extent subsided, careful bimanual palpation reveals the presence of an exudate filling the cul-de-sac of Douglas and occasionally projecting into the vagina. Lizano states that in some cases careful palpation will enable the physician to make out the upper border of the exudate in the hypogastric region and sometimes a zone of induration. Occasionally instead of fluctuation a solid mass will be felt. When the lesion is very extensive the uterus may be fixed in the pelvis by a mass of plastic exudate causing pain on pressure and obstructing the rectum at the level of the uterosacral ligaments. The progress of the disease varies according to the nature and intensity of the infection. In peritonitis following the puerperium or pyosalpinx, the inflammation is generally circumscribed and confined to the pelvis, and the exudate is usually walled off by adhesions. Should the abdominal peritoneum become involved, however, the constitutional symptoms—vomiting, meteorism, etc.—are aggravated. In purulent peritonitis Lizano advises evacuating the pus through the vagina. If evacuation is complete, he says, cure is possible, but if it is incomplete, fistulas of various kinds may result, with death later from septicemia. Lizano discusses the points of differential diagnosis between acute and chronic peritonitis, hematocele, and the gonorrheal and tuberculous forms of peritonitis.

149. **Palpebral Chancre.**—A young woman, aged 29, consulted Leoz for the relief of a tumor of the eyelid. The tumor was round, hard and indurated, and though the patient presented no other symptoms of the disease, a diagnosis of syphilis was made. This diagnosis was confirmed later by a colleague in a general hospital. Leoz reports this case because of the extreme rarity of chancre in this region and the likelihood of mistaking it for a chalazion or even for a simple blepharitis. In 25,000 cases of eye diseases Leoz has only seen two like this and one chancre of the conjunctiva.

150. **Plastic Operations on the Cheek.**—Goyanes states that the most frequent causes of loss of tissue in the cheek are trauma, gangrene, and operations for the removal of carcinoma. He says that unless this loss is corrected by surgical means there is likely to be considerable resulting deformity, which generally takes the form of cicatricial contraction of the muscles of the lower jaw. In this article he reports the case of a patient aged 22, who entered the clinic of D. A. San Martin in May, 1904. According to the patient's statement, he had had a malignant pustule on the inside of the left cheek at the age of 7, which was treated with the Paquelin cautery. The resulting contraction of the muscles prevented him closing his mouth. The patient was anesthetized and a flap was formed of the skin of the neck. This flap was inverted and turned toward the buccal cavity and sutured in place with catgut. The cosmetic effect was very good and the patient was able to close his mouth and to masticate his food. Goyanes describes the operation in detail and reviews the literature on the subject. Goyanes describes the operation in detail, emphasizing the necessity for avoiding wounding Steno's duct. He also reviews the literature on the subject.

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Original Articles

THE OCULAR SYMPTOMS OF AFFECTIONS OF THE ACCESSORY SINUSES OF THE NOSE.*

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A few years ago there were but few specialists in the practice of diseases of the eye who did not combine with the treatment of affections of that organ that of diseases of the throat, nose and ear, also. By reason of the development of each of these several branches of medicine and the increased demands which have been made in consequence on the time and resources of those practicing them, the continuance of this combination of specialties has seemed no longer desirable and physicians are confining themselves more and more to but one subject. While this course is surely to be commended, and while the various departments of medicine will undoubtedly attain their highest development in this way, it should be remembered that the manner in which specialists have divided the body is purely arbitrary and that Nature draws no such lines of limitation, but that each organ has numerous connections and correlations with other organs, which every specialist and practitioner as well must thoroughly comprehend.

At the time when the custom of combining the practice of diseases of the eye with that of the nose and throat was in vogue, but little was known of the accessory sinuses of the nose and their affections, and with the exception of diseases of the lachrymal apparatus, which were clearly recognized to be most often of nasal origin, it was considered that there was but little connection between diseases of the eye and those of the nose; when the separation of the specialties was made, therefore, the divorce seemed natural, and further consideration of the nose and its diseases by the ophthalmologist was deemed unnecessary, while the rhinologist, for his part, regarded the eye as an organ with lenses and strange acting muscles in which he had no interest. Within the past few years, however, an entirely new field has been opened up by a more thorough comprehension of the anatomy and pathology of the air spaces connected with the nose, and by a better appreciation of the intimate relationship which these cells have with the orbit and its contents, so that now both ophthalmologists and rhinologists realize the need of a better understanding of this border-land between their specialties. As a consequence, numerous valuable pathologic and clinical studies have been made, which have done much to elucidate the subject and to re-associate ophthalmology and rhinology, not in the practice of a single individual, it is true, but in the more natural and better combination of two, of an ophthalmologist in conjunction with a rhinologist.

Thanks to these researches, the profession is now generally conversant with the general symptomatology of diseases of the accessory sinuses, and is familiar with the most striking, at least, of the ocular symptoms. That orbital abscess is usually secondary to disease of the sinuses, that displacement of the globe may be occasioned by encroachment on the orbit by a distended sinus, that blindness may result from an involvement of the chiasm through the roof of the cavity or by an implication of the optic nerve as it passes through its foramen in the sphenoid, as a consequence of an inflammation in the cells within that bone, are facts which are generally accepted. Beyond this point, however, the knowledge of most clinicians does not extend, and it is the purpose of this paper to call attention more generally to other less striking, though perhaps more frequent symptoms, to explain their significance, and by perfecting their symptomatology, to facilitate the diagnosis in a class which in their early stages yield readily to treatment, and are easily curable, whereas, if their nature is overlooked and the pathologic process causing them is permitted to continue, conditions may arise which may not only occasion serious inconveniences and distress in the nose, and greatly interfere with the organ of sight, but my involving the brain, may actually result in the death of the patient.

Before proceeding further, it seems desirable to make several statements in regard to diseases of the accessory sinuses of the nose, of which, it is believed, most practitioners are not cognizant. The first of these is, that very pronounced disease of any, or, indeed, of all the sinuses, may occur without occasioning any subjective nasal symptoms, and, secondly, that repeated rhinologic examinations may fail to discover pus in the nares in sinusitis, the affection of the cavity being only detected by catheterization and irrigation.

The earliest symptoms of many diseases of the accessory sinuses are ocular, and on this account the oculist is often the first to be consulted. I have no hesitation in saying that in such event, most of these symptoms are attributed to eye strain, and refraction advised. By good fortune, however, this error in diagnosis does not always work injury to the patient, for the refraction test often not only entirely relieves the symptoms, but actually cures the sublying condition, not, however, as was intended by the relief afforded the eyestrain by correcting lenses, but by the atropin which was employed to put the ciliary muscle at rest drying up the secretion in the sinuses. In many cases such desirable results do not follow, and the patient is subjected to a repeated series of examinations which fail to accomplish their purpose and permit the development of chronic conditions in the nose and sinuses, which become intractable to treatment and prolong the duration of the case indefinitely. It behooves us, therefore, as ophthalmologists, to be familiar with the symptomatology of sinus affections and to be able to detect the earliest ocular symptoms which they induce, for by so doing we may not only be of service to the rhinologist in diagnosing cases which are often obscure by reason of subjective and objective nasal signs, but also save our patients from the injury of misapplied treatment.

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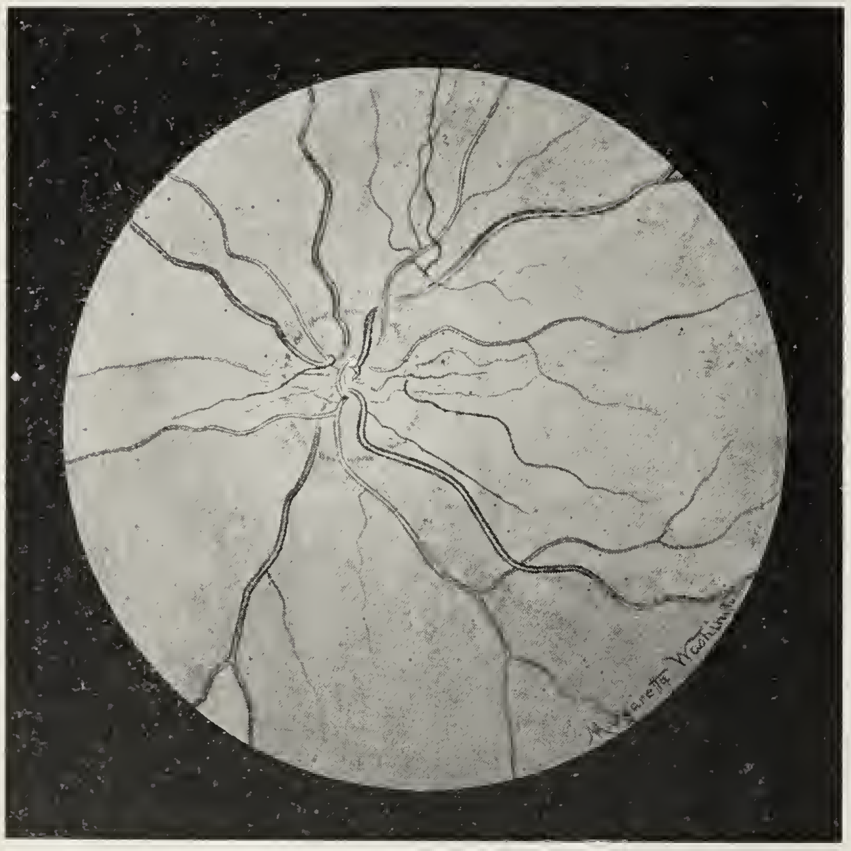
* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

SYMPTOMATOLOGY.

1. *Disturbances in Vision and the Visual Field.*—By reason of the intimate association of the optic nerve with the sphenoid bone, and as Onodi has shown, in many cases with the posterior cells of the ethmoid, this nerve is more or less implicated in the majority of active inflammatory conditions of these cavities. Indeed, were it not for the double layer of periosteum which covers the bone forming the barrier between the nerve and the sinus, and for the protection afforded by its sheath, it would be difficult to comprehend how this nerve could escape implication in any affection of the sinus, for the separating layer of bone is frequently as thin as paper and contains many dehiscences.



The involvement of the optic nerve, as a consequence of ethmoidal or sphenoidal sinusitis, may vary in degree from a simple edema to an active retrobulbar inflammation. While this latter inflammation is rare, even in cases of marked sinusitis, edematous infiltration is common, although as the change wrought in the nerve is but slight, and the symptoms which it excites are not striking, they must be searched for with some care. As a rule, the patient complains of some dimness of vision in one eye, at times of vertigo, headache and other head symptoms. When the ophthalmoscope is employed, the unaffected eye is usually found to be normal, while in the fellow eye a slight veiling of the edges of the nerve is seen, with a dilatation of the retinal veins and a choking of the lymphatics around the central vessels; in fine, the changes depicted in the sketch, which was made for me from the eye of a patient with acute sphenoiditis.[1] If the sinusitis is unchecked and retention of the contents of the cavity occurs, the nerve becomes more involved and the familiar signs of a retro-bulbar inflammation of the nerve appear.

In cases of even slight involvement of the optic nerve, the patient is usually conscious of a dimness in the affected eye, although if the vision be tested in the ordinary manner it will be found to be equally good in each eye; in other words, that the vision for form is normal. If the light on the chart be reduced, however, or if Bjerrum's test card is employed, the difference in vision between the two eyes will be at once manifest, and it will be ascertained that the dimness in the affected eye was occasioned by a diminution in the light sense, as a consequence of the edematous infiltration of the highly organized bundle of fibers which supply the macular region.

The extent of the involvement of the nerve may be further studied by the perimeter, by means of which it will often be possible to differentiate relative central and paracentral scotoma, and at times a concentric contraction of the field. If the congestion of the nerve progresses to inflammation and the conducting power of its fibers is further interfered with, then more positive defects in the visual field will appear, and it will be possible to outline absolute scotoma, both central and paracentral, and peripheral contractions in the field, in accordance with the location and the degree of involvement of the nerve. Ziem found contraction of the visual field in a large proportion of cases, especially in empyema of the antrum, and explained it by the cyclitis which he found in such cases resulting from disturbances of the circulation between the nose and the eye. Kuhnt likewise discovered concentric contraction of the field, especially for red and green. As these observations have not yet been corroborated by others, it is probable that the changes in the fields in many of the cases reported by these authors was due to neurasthenia, which may have been induced by the sinus disease.

In this connection, it should not be forgotten that optic neuritis may arise in individuals with sinusitis from other intercurrent causes, such as the abuse of tobacco or alcohol. A chief characteristic of neuritis due solely to sinus inflammation, however, is its unilateral character, for although both nerves may be affected in the optic canal by inflammation of both sphenoidal sinuses, such cases are very rare.

Tumors of the sphenoidal and ethmoid, unless they break through the walls of the sinus and involve the tissue of the nerve directly, do not, as a rule, cause disturbances of vision. As proof of this assertion, may be mentioned the cases of Baratoux, Hajek, Foucher and others, in which large sequestra of the sphenoid were exfoliated and passed through the nose, without giving rise to any defect in vision. In the cases, however, in which vision is affected by such neoplasms, Bull's statement may be accepted as authoritative, that "if an orbital tumor rapidly causes blindness and the latter starts from the temporal side of the field and leaves the region of the macula lutea unaffected to the last, and if at the same time a growth appears in the nose, it is probable that the tumor began in the sphenoidal antrum."

In addition to the various forms of implication of the optic nerve which have just been mentioned, vision may also be impaired by the mechanical obstacle offered to the proper passage of rays of light into the eye, either by reason of swollen lids, or of mucus retained in the conjunctival cul-de-sac as a consequence of lachrymal obstruction. Haze of the vitreous from uveitis may also disturb it, and, finally, imperfect focusing of the eyes, the result of interference with the function of one or more of the extraocular muscles may occasion diplopia. While there is evidence that in a very few cases of nasal and sinus disease vision may be affected, and may, for a time, be absolutely suspended, purely by reflex irritation, without anatomic cause, the clinician should be slow to attribute the blindness in such cases to a reflex, and should first carefully exclude hysteria and the possibility of the existence of retrobulbar involvement of the nerve without ophthalmoscopic signs.

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[1] 1. Paper read before the Baltimore Ophthalmological Society, Journal of Eye, Ear and Throat Diseases, March-April, 1905.

2. *Changes in the Orbit.*—It is now generally recognized that inflammation of the orbit of endogenic metastatic origin is rare, and that most diseases of this cavity are ectogenic, being occasioned by an inflammation of one or more of the accessory sinuses of the nose. The character of the symptoms and the form of inflammation which the disease of the sinus excites in the orbit, depends first on the particular sinus or group of sinuses affected, and secondly on the nature of the inflammation in the sinus. Thus, for example, a chronic distention of the walls of a sinus (hydrops) may occasion dislocation of the globe, with the necessary attendant of more or less functional derangement of the ocular muscles, giving rise to asthenopia or actual diplopia; or the refraction of the eye may be altered by pressure, causing changes in the axis and amount of astigmatism, and, finally, disturbance in the proper canalization of tears may result from a displacement of the puncta lachrymalia, or by a lesion in Horner's muscle in the lid. In chronic cases, vision is but rarely affected, for even when there is exophthalmus, the sigmoid flexure in the optic nerve permits it to elongate and escape injury from the traction to which the displacement of the globe subjects it; in acute inflammatory processes of the orbit, on the other hand, vision is apt to be more or less involved, either from the very pronounced displacement of the globe which occurs in this class of cases, or from a direct implication of the nerve itself in the inflammatory process.

One of the earliest signs of involvement of the orbit is a change in the contour of the orbital ring. Usually this is occasioned by a distinct projection into the orbit cells, but at times the rim may be simply raised and roughened, either wholly or in part, by periostitis. In some cases of sinusitis an acute cellulitis of the orbit may develop without premonitory signs, and lead to the formation of an abscess which may point and discharge itself either externally through the skin of the lid, or in rarer cases into the antrum, nose or tear sac. In other cases, the sinusitis causes a circumscribed swelling to appear in various parts of the orbit, which may be either as hard and unyielding as bone, or may convey to the finger the impression of containing fluid.

Although it is frequently impossible by means of the ocular symptoms alone, to make a differential diagnosis of the particular sinus involved, in many cases the character of the displacement of the eyeball is of significance. Thus, disease of the frontal sinus, which is the most frequent form of sinusitis to occasion dislocation of the globe, by reason of the extreme thinness of the bone which separates its cavity from the orbit, causes the eyeball to be displaced down and out. Mucoceles formed from the ethmoid cells are circumscribed, and do not, as a rule, occasion any considerable diminution in the size of the orbital cavity; when displacement of the globe does occur, however, it is usually up and out. Dislocation from a mucocele of the sphenoid cells is uncommon, as in the rare cases in which mucoceles develop in these sinuses, the anterior wall, being the thinnest, is the first to give way and the orbital cavity escapes compression. The orbit enjoys a similar immunity in hydrops of the antrum, for the inner wall of these cells is the thinnest and is the first to yield, and the nasal cavity is encroached on. Proptosis always indicates pressure from behind the globe.

The location of the pointing of the abscess may also be of value, as indicating the particular sinus which is affected, abscesses of the frontal sinus tending to perforate at the middle of the upper lid, or at the superior internal angle of the orbit, those due to ethmoiditis at its lower, inner angle. A general orbital cellulitis may be occasioned by an acute perforation of any sinus. Disease of the frontal sinus may frequently be diagnosed by redness and swelling of the skin over the sinus, and by the pain which may be elicited by pressing on the roof of the orbit in the neighborhood of the pulley of the superior oblique muscle; indeed, it is often possible to outline the area of the sinus by noting the extent of the tenderness.

Disease of the sphenoid, as a rule, manifests itself by an early involvement of the optic nerve, either by perineuritis or by pressure on the fibers of the nerve, as it passes through the optic foramen, or along the outer wall of the sinus itself. In affections of this sinus, involvement of the ocular muscles is not uncommon, and cranial symptoms of more or less severity may arise, by reason of the connection which the sphenoid has with the floor of the middle cranial fossa. These latter symptoms may also be occasioned by perforation of the posterior wall of the frontal sinus, though this accident is of rare occurrence.

Ethmoidal disease chiefly manifests itself in the intraocular and conjunctival circulatory disturbances and in the production of asthenopia by interference with the extraocular muscles.

Inflammation of the antrum of Highmore is attended by orbital symptoms less often than that of the other cavities, but it may give rise to osteo-periostitis of the roof of the cavity and cause upward dislocation of the globe, and retrobulbar optic neuritis may result from infection through the lymphatics.

While this special symptomatology may hold good in many cases, it often fails, on account of the frequent variations in the anatomy of sinuses, for, as shown by Holmes, Cryer, Onodi, Turner and others, the relationship which the sinuses bear to one another and to the orbit is not by any means constant, and, while in most cases the cavities are separate, they may communicate. Thus, Onodi has demonstrated, by means of frozen sections, that the posterior ethmoidal cells frequently aid in the formation of the optic canal, and has noted that when this anatomic relationship is present, the layer which separates the sinus from the nerve is as thin as paper and is often perforated with dehiscences. It has been found, also, not rarely, that the frontal sinus forms the inner wall of the orbit, and that abscesses of its cavity may point in the neighborhood of the lachrymal sac.

As points of practical interest in connection with the diagnosis and treatment of orbital abscess, it should be remembered that the degree of the exophthalmus often varies in sinusitis; and that it may at times disappear entirely, being dependent on the patulency of the orifices of the sinus, the amount of protrusion of the eye being naturally more marked when the size of the cavity is increased by retained secretion. This tendency for the degree of the exophthalmus to vary should be recognized, and should not lead to its being confused with the rare cases of intermittent exophthalmus which are dependent on a dilatation of the veins of the orbit. Finally, it may be remarked that even slight transient acute sinus affections may cause actual suppuration in either the periosteal or fatty tissues of the orbit; and that infection of the orbit may occur without an actual perforation of its walls, this being true not only of the very thin walls of the ethmoid cells, but also of the much thicker ones of the frontal sinus, the infection, in such cases, being carried not by way of the necrosed bone, but through the diploe, or along any one of the fine emissaries, either vascular, lymphatic or nervous.

3. Affections of the Lachrymal Apparatus.—Sinusitis may indirectly, by way of the nasal mucous membrane, be a frequent cause of disease of the lachrymal apparatus, but is the direct agent only in those rare cases where an empyema of one of the sinuses discharges itself into the sac, or, what happens more frequently, into the neighborhood of the sac, giving rise to phlegmonous inflammation of the tissues around the sac.

These prelachrymal abscesses may result from an empyema of the frontal sinus, as a consequence of an anomalous distribution of the cells, or, finally, from an abscess of the deeper parts of the orbit, the purulent matter gravitating into the region of the sac by the peculiarity of the insertion of the fascia. The differential diagnosis between these cases and true instances of lachrymal disease is often difficult, this being especially true of the class of cases described by Peters,[2] in which there are all the signs of abscess, and the sac itself appears dilated, but where the Bowman incision and the passage of probes into the nose does not release the pus, the purulent matter escaping only after the probe is withdrawn and passed horizontally into the cells forming the inner orbital wall. Peters points out that there is actually an ectasia of the sac in these cases, which is occasioned by a stoppage of the orifices of the sac by the pressure exerted externally by pus, which comes either from an empyema of the frontal or ethmoidal cells, from the maxillary antrum, or from a maxillary periostosis excited by a carious tooth.

4. Affections of the Lids.—Edema of the lids is one of the most significant symptoms of disease of the accessory sinuses, and may often be the means of calling attention to the existence of an inflammation in these cavities, the extreme thinness of the skin of the lids, and its loose attachment to the sublying parts, causing even a comparatively slight sinusitis to give rise to this condition. The puffiness is usually most marked in the upper lid and particularly on the nasal side, though the entire lid may be swollen. This edema is to be distinguished from the inflammatory swelling and thickness of the lid which results from cellulitis, as it is entirely non-inflammatory in origin, as well as in appearance, and also from the ptosis which is at times present as a result of a palsy of the levator of the lid. The swelling is usually most marked in the mornings and disappears during the day, but it is also apt to be brought on by bending the head forward. Like all other ocular symptoms of sinusitis, the edema may disappear for a time, with the discharge of secretion from the sinus, but reappears when the fluid reaccumulates and the congestion of the mucous membrane becomes greater.

A persistent blepharitis is not uncommon in association with the chronic inflammation of the conjunctiva which sinusitis sometimes excites, and yields to treatment only after the cause has been removed.

5. Affections of the Extraocular Muscles.—By reason of the juxtaposition of some of the eye muscles with the walls of the orbit, and the very close association of the nerves which supply them with the sphenoid cavity, as they pass along the outer wall of this sinus, paresis, and even paralysis of one or more of the eye muscles, may occur as a consequence of sinusitis. While complete paralysis demands an inflammatory process of considerable intensity, and is usually occasioned by a cellulitis of the apex of the orbit secondary to either an active sphenoiditis or ethmoiditis, or more rarely to antral disease, paretic conditions of the muscles may complicate comparatively mild cases of sinusitis, and may occur when the rhinological examination reveals only a congestion of the mucous membrane lining the cavity.

Chronic empyematous conditions of the sinuses rarely occasion marked muscular insufficiencies unless signs of active inflammation arise, for the distention of the walls of the sinus under such conditions is gradual and the displacement of the globe which follows is so slow that the muscles have an opportunity to adjust themselves to the changed conditions of the visual axes under which they are forced to operate. In acute cases, the paresis is occasioned either by direct inflammatory infiltration of the long, broad, flat belly of the muscles themselves, as they lie in association with the walls of the sinus, or by an involvement of the nerves supplying them as they enter the orbit. As in many of these cases the function of the muscle is but slightly interfered with, diplopia is but rarely complained of, and can be detected only by careful search in the periphery of the field by the aid of a colored glass. Under such circumstances, the diagnosis may often be facilitated by requesting the patient to indicate in which direction movement of the eyes is especially painful, as considerable distress is often excited when the eyes are rotated into the position in which fullest demand is made on the affected muscle.

As a consequence of this paretic condition of the muscles, vision is often blurred, and while, as just stated, many of the palsies are not sufficiently marked to induce diplopia, when the eyes make their ordinary excursions, the imbalance created is sufficient to confuse vision, to cause vertigo, to excite reflex gastric symptoms and to render the near use of the eyes difficult. By reason of their anatomic relationships, paralysis of the levator, of the superior rectus and superior oblique muscles, serves to indicate a probable involvement of the frontal cells; paralysis of the internal rectus, an involvement of the ethmoidal; and paralysis of the inferior rectus or inferior oblique muscles, an inflammation of the antral cells. As sphenoiditis may, however, implicate any or all of the nerves supplying these muscles, the value of differentiating the precise muscle affected, as a localizing symptom indicating the involvement of any particular sinus, is not great. Diplopia in the periphery of the field does not always indicate that a muscle has been paralyzed, for it may be induced by a slight displacement of the globe, either by exudation or by the distended wall of a sinus.

Ptosis from paralysis must not be mistaken for dropping of the lid from edema. This differentiation is not always easy, for, as in all other signs and symptoms of sinusitis, both the edema and the palsy may be transient and may disappear, only to reappear after several hours or days, or even much longer intervals. It is by reason of this transient character that palsies of extraocular muscles due to sinusitis have been confused with the palsies which occur in connection with the rare affection known as "migraine ophthalmoplegic," or recurrent oculomotor palsy. In this condition, paralysis of one or more of the eye muscles supplied by the third nerve—though muscles supplied by other nerves may be affected—occurs in connection with an attack of migraine. The attacks come on in periodical crises and recur at irregular intervals. I recently had under my care a case of transient palsy of a part of the right third nerve, which appeared in association with great pain in the eye and temple, and the occurrence of a spectrum, where the symptoms were undoubtedly induced by an acute inflammation of the ethmoidal and sphenoidal cells. Although a careful analysis of a majority of the recorded cases of migraine ophthalmoplegic indicates a probable sinus origin in the number, I do not believe that such cases are true instances of this rare form of disease, as I consider that, while the pathology of the affection is in doubt, the strongest evidence points to its being of central origin.

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[2] Zeitschrift für Augenheilkunde, 1892, ii, 2.

I am of the opinion that if many of the cases of palsy of extraocular muscles attributed to rheumatism were analyzed that an affection of a sinus would be found to be the underlying cause in many instances. Such palsies may appear after "catching cold," and are associated with more or less pain on moving the eye, and possess other characteristics which suggest the presence of an acute sinusitis.

6. *Affections of the Conjunctiva.*—In chronic disease of the sinuses, the mucous membrane of the nose is not infrequently affected, and the thickening and congestion which exist there are often transmitted to the mucous membrane which lines the lids and covers the eyeball, not only by direct continuity of structure, by way of the tear passages, but also as a consequence of the general venous and lymphatic congestion of all the parts about the eye, occasioned by the disease of the sinus. In acute cases the conjunctiva is not rarely inflamed, probably by direct infection from the mucous membrane lining the sinuses, and presents the appearance of a typical attack of catarrhal conjunctivitis. In many of the chronic cases, the follicles of the conjunctiva become enlarged, and it is the involvement of these bodies, together with the turgescence of the conjunctiva, which occasions the feeling of heaviness of the lids and aggravates the asthenopia which is so frequent a symptom of sinus disease.

7. *Affections of the Cornea.*—Disease of the accessory sinuses rarely gives rise to keratitis except indirectly, as a consequence of the exposure to which the cornea is at times subjected in extreme degrees of displacement of the globe by a distention of the walls from empyema or by cellulitis, or as a part of a panophthalmitis which may be excited by the cellulitis. Occasionally, however, herpetic-like blisters may form on the cornea, as in cases recently reported by Ellinger[3] and myself,[4] as a consequence of implication of the fifth nerve as it passes along the outer wall of the sphenoid sinus.

8. *Pupillary Changes.*—A slightly dilated pupil may at times direct the attention of the clinician to the existence of an inflammation in the posterior ethmoidal or sphenoidal sinuses, being occasioned by the optic neuritis and the consequent diminution in vision and the reduction in the light sense which accompanies the inflammation of the nerve. This dilatation increases disproportionately when the illumination is diminished and is unattended by any restriction in the play of the iris to direct or indirect light stimulus. In cases of active inflammation at the back of the orbit, the pupil may be widely dilated and fixed, from serious involvement of the third nerve.

9. *Affections of the Uveal Tract.*—When the enormous extent of mucous membrane which is spread over the nose and its sinuses is taken into consideration, and account made of its large venous and lymphatic channels and the very close and intimate association which these vessels have with the blood vessels and lymphatics of the eye, it seems extraordinary that the eye should not be the seat of active inflammatory processes in all cases of sinusitis, and that the uveal tract, especially, should not be frequently involved. And yet it would appear, despite the claims of Zeim and others, that involvement of the interior of the eyeball, either by emboli or direct infection, is very rare. The thought occurs that, in order to obviate this, there is some controlling mechanism, some peculiar arrangement, perhaps, of the vessels, of which we are as yet unaware, which protects the eye from participating in these inflammatory conditions, just as there is some subtle mechanism which controls and regulates the intraocular circulation and makes it more or less independent of that of the general system.

Zeim, Fromaget, Fish and others have recorded a number of cases of uveitis due to sinusitis, and attribute the inflammation to the general impediment in the circulation and to the irritation of the maxillary branch of the fifth nerve, occasioned by the empyema of the sinus. These authors claim to have seen marked improvement in cases of this nature follow treatment of the sinus. As yet, however, cases of uveitis from sinusitis have been recorded by but a few, and further observations are necessary before the correctness of these views can be established.

10. *Cataracts.*—Equally problematical is the claim of Zeim that cataracts may be occasioned by disease of the sinuses. This author asserts that he found chronic suppuration in the nose in many cases of opacity of the lens, and adds that in a number of cases of unripe cataract he improved vision by treating the sinuses. Kuhnt partially supports this statement, as he states that he frequently saw spoke-like opacities of the posterior cortical in antral disease, especially in young individuals, with no other changes visible in the fundus or general system. The same author has seen vitreous opacities clear up after treatment of the sinuses. He attributed both the change in the lens and vitreous to an interference with the nutrition of the ciliary body, which he considered to be of a circulatory nature. An observation of Eversbusch which is especially interesting may be cited in this connection, of a swelling of the middle turbinated body preceding a so-called sympathetic inflammation of the other eye. As a consequence of this experience, he makes it a rule to examine the nose in cases where there is any ground to suspect sympathetic trouble, enucleation of the affected eye being advised as soon as nasal symptoms arise.

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[3] Zeitsch. f. Aug. 1, p, 174.

[4] Journal of Eye, Ear and Throat Diseases, March-April, 1905.

11. Refraction.—Diseases of the sinus may occasion change in the refraction directly by the pressure exerted on the globe by the wall of a dilated sinus, and it is not unlikely that in early childhood disease of the nose may indirectly alter the refractive condition. Thus, it is well known that the form of the orbit determines, in large measure, the shape of the human eyeball. As a further step, Zeim has proved by experiments on dogs and rabbits that blockage and purulent inflammation of a nares will occasion marked inflammation in the skull and side of the face, and Kuhnt has deduced that the same facial asymmetry may result in human subjects from a deviation of the septum which is consecutive to a chronic swelling of the nasal mucous membrane. Batten and Fish consider sinusitis to be an etiological factor in myopia, as a consequence of congestion and spasm of the ciliary muscle, thereby retarding its natural contraction and relaxation and reducing accommodation.

12. Asthenopia.—Asthenopia is not rare in sinusitis, and the failure of proper lenses to relieve such symptoms is explained by the fact that they originated, not in an error of refraction, but in an inflammation of a sinus. In many of the cases the asthenopia may be attributed to the conjunctivitis which sinusitis excites, but in others it is traceable to an interference with the ciliary muscle, and actual testing will show a diminution in the range of accommodation. Hoople, who has contributed an interesting article on this subject, thinks that a moderate amount of pressure or mechanical irritation of the middle turbinate and adjacent septum will temporarily impair the function not only of the ciliary muscle, but, to a more or less variable extent, that of the internal rectus muscle as well, thereby aggravating the asthenopic symptoms still more. De Schweinitz, also, has called attention to asthenopia as a consequence of intranasal disease, and thought these cases particularly interesting, because in each instance the refraction error and the faulty muscle balance were of such a character that the symptoms of which the patients complained would naturally be ascribed to these anomalies, and because the patients were, to a great extent, unaware of, or at least indifferent to, any serious or decided lesions in the naso-pharyngeal region. In an analysis of a large number of cases of asthenopia, Gradle found chronic catarrhal rhinitis, with secondary hypertrophy, or with stenosis due to deviations of or excrescences on the septum, in about 3 per cent.

13. Headache and Neuralgia.—Headache and neuralgia are rather constant symptoms of sinusitis, and, though they frequently possess no features which serve to differentiate them from similar pain due to other causes, at other times they present characteristics which are significant of sinusitis, and it is very essential that ophthalmologists should be conversant with these qualities, since the laity, who are ignorant as yet that headaches may have a nasal origin, and impute all forms of head pain to eyestrain, seek them first for relief.

The headaches of sinusitis occur usually in the morning and are characterized by continuous pain with severe exacerbations, which radiate around the orbit and within the zone of distribution of the fifth nerve; or they may take the form of a general head pain, of a facial neuralgia, or of a toothache, and may be constant or recur in severe paroxysms. Injection of the conjunctiva, lachrymation and photophobia are often present. The location of the pain is significant, for, while it may be reflected to a part of the head remote from the affected sinus, and may even be felt in the opposite side, yet its localization is generally characteristic and may enable the clinician to differentiate the particular sinus affected. Thus, neuralgia of the supraorbital nerve is very significant of frontal disease, and dental neuralgia will frequently indicate the existence of antral disease. Frontal headache is suggestive of ethmoidal and frontal disease, while occipital pain is usually caused by sphenoiditis, though disease of the frontal sinus may evidence itself in pain in that locality also. Pain in the vertex and at the back of the eyes is usually caused by sphenoiditis, though, on account of the close proximity of the fifth nerve to the lateral wall of the sinus and the nearness of the sphenopalatine ganglia, reflex pain to any part of the head may be occasioned by disease of that cavity. A distressing pain across the bridge of the nose is peculiar to ethmoid disease.

The headache of sinusitis may take the form of hemicrania, and may simulate migraine, or even the rare condition known as "migraine ophthalmoplegic." Pain is almost always present in acute affection of the sinuses and may attain great severity, while in chronic cases all suffering may be absent; in some cases, however, where secretion has been long retained and where there is a hyperostosis of the walls of the sinus as a consequence of repeated attacks of sinusitis, the suffering may be prolonged and severe. A symptom of very great value in the diagnosis of sinusitis is the sensation which is evoked by palpation of the affected areas. Thus, in frontal sinusitis exquisite pain is occasioned by palpating the forehead and the roof of the orbit at its upper, inner angle, and the same is true of the region over the antrum when that cavity is the seat of an acute inflammation.

In addition to head pain, there may be other symptoms of a general character, such as fever, evidences of cerebral irritation and congestion, neurasthenia and gastric disturbances. The increased temperature is due to absorption of pus and is generally irregular. Gastric symptoms are occasioned by swallowing some of the fetid discharge of the sinuses, and loss of appetite or a true gastritis may result. Such cerebral symptoms as malaise, inability to concentrate the mind, and actual depression, verging almost on melancholia, are observant more frequently in chronic cases. Delirium and mania betoken a state of actual involvement of the cerebral activity. When cerebral symptoms arise in sinusitis, they indicate either an involvement of the meninges without perforation of the wall of a sinus, or more usually an actual perforation, in which latter event abscess of the brain rapidly follows. Abscesses of the orbit not rarely give rise to cerebral complications, and meningitis, abscess of the brain and thrombosis of the cavernous sinus may follow.

DISCUSSION.

Dr. C. R. Holmes, Cincinnati, said that a large field is still unexplored in the relation between the accessory cavities and the eye. He has taken many fields of vision in these cases but has not found that many patients exhibited contraction. He has found that in many chronic cases there is a rise of temperature, sometimes of one or two degrees daily. He thinks this a chronic septic condition. Dr. Holmes said that in sphenoidal cases the pain is generally referred to the temple. He passed around a section from such a case, showing how easy it is for a disease in the sphenoidal cavity to invade the optic nerve and the eye. He said that this is the first case on record in which there was total blindness following trouble with the sphenoid on one side. The patient was not able to see an electric light before the eye, but after opening the sphenoid his sight was completely restored.

Dr. E. J. Brown, Minneapolis, fifteen years ago reported the case of a boy about ten years of age who had suffered from diminution of vision and very contracted fields. The boy had very large adenoids and Dr. Brown ascribed the trouble largely to that. On removal of the adenoids the fields were immediately restored to normal. The patient remained under observation for many years and is still under his care. Dr. Brown found later that the boy had sphenoid disease and the optic atrophy which resulted from that condition has persisted. Dr. Brown had a patient who came to him complaining of slight tenderness at the inner canthus, over the root of the nose and having a slight amount of astigmatism to which his trouble was at first ascribed. Correction of that, however, gave no relief. He came back, and on entering a small probe into the frontal sinus Dr. Brown caused the exudation of a small amount of pus. Removal of the head of the middle turbinate on that side gave relief to all his symptoms. Another case of similar character was relieved in that way within a few weeks.

Dr. W. H. Snyder, Toledo, called attention to the fact that a number of prepared sections show perfectly the relation of the mucous membrane after the bone has been removed and there seems to be no normal shape and size of the sinuses. In a number he prepared last spring there was no opening into the sinus. Simple probing through the nasal cavity would not bring pus in such cases.

Dr. F. W. Hilscher, Spokane, declared that he has seen a great many patients in whom symptoms of this character have been going on for a great while with more or less destruction of vision and that have been through the hands of men otherwise competent. He has had cases in which he did not discover pus at all in the sinuses but in which there was pressure between the turbinates and septum that gave rise to the same symptoms. He thinks, therefore, that we need not always expect to find pus to account for these symptoms. Just contact of the surfaces will produce them. He mentioned the case of a middle aged lady with a hypermetropic error who declared that whenever she took the glasses off she had a great deal of tinnitus.

Dr. S. D. Risley, Philadelphia, said that his attention once having been called to the important relation between certain obscure affections of the eye and the diseases of the sinuses contiguous to the orbit he was surprised to find how frequently they occur and rather reproached himself for not having observed the fact before. This condition need not cause surprise, however, when it is remembered that these sinuses all drain into the nasal cavities and the numerous circumstances in life which lead to the blocking up of the ducts and the close anatomic relationship which exists between the sinuses and the orbit are taken into consideration. Dr. Risley was struck with the statement with regard to the absence of choroidal disease in the cases observed by Dr. Posey. Dr. Risley published a group of cases some time ago in which defective vision was associated with disease of the sinuses and in all there was marked choroidal disease. He thinks, therefore, from personal observation, that choroidal disease should not be excluded as one of the associations with this form of trouble. He recently had a patient with exophthalmus, and optic neuritis of obscure origin, in whom it was only after probing the frontal sinus on that side that the diagnosis was cleared up. On opening this Dr. Risley found a large collection of pus which had escaped into the orbit and collected back of the eyeball. In another case of exophthalmus, transillumination showed the trouble to be in the maxillary antrum on that side. These conditions are varied and, therefore, in obscure cases of eye disease the study of the case should never be considered complete until we have observed, by transillumination and other means open to investigation, the condition of the accessory sinuses.

Dr. Leartus Connor, Detroit, said that it has been a habit of his for many years when any case of eye trouble was not satisfactorily disposed of within a reasonable time to investigate the sinuses. He has sometimes been reproached by his colleagues for calling attention to these matters. The expert management of these conditions in their gravest form calls for manipulation that not all ophthalmologists desire to enter into.

Dr. Edward Jackson, Denver, declared that one point of Dr. Posey's paper needs to be reiterated, and that is the allusion to the difficulty of recognizing sinus disease. Dr. Jackson has so frequently referred patients when he felt that sinus disease was the cause of the eye trouble, to expert rhinologists and had them come back with the report that there was nothing the matter. He now feels more confidence in a certain clinical association of symptoms than in the ordinary rhinologic examination and in some cases certainly the examination must go as far as the removal of considerable tissue and very careful examination before a negative reply can be accepted. A few months ago Dr. Patterson, of Colorado Springs, published a paper on the connection of sinus disease with vitreous opacities. Dr. Jackson is inclined to think this a rather common cause of uveal trouble; sometimes producing vitreous opacities and sometimes not.

Dr. J. A. Donovan, Butte, Mont., said that those who have watched adenoid children must have noticed the effect of that trouble on vision, especially on accommodative power. A diagnosis in these cases is a very important matter and he is convinced that often the symptoms are due to pressure and are much the same as those of ordinary rhinitis. The history is often the same as in rhinitis. It is almost impossible to make a diagnosis in these cases at one examination and it is not absolutely necessary, for the first treatment is not directed to the sinuses. Relieving the pressure of the anterior end of the middle turbinate often relieves the patients at least for some time.

Dr. J. A. L. Bradfield, La Crosse, Wis., said that four months ago a woman, aged 32, was referred to him as a case of glaucoma. The fields for color were contracted. Vision was 20/100 and there was history of right hemicrania. Examination of the nose showed the middle turbinate to be large and cystic and on its removal recovery was rapid. Within a week vision was almost normal.

Dr. H. Stillson, Seattle, Wash., stated that last year he published a paper on the relation between diseases of the nose and diseases of the eye. In that paper he reviewed the literature on the subject and published statistics from his own practice. The subject is a very old one, there having existed considerable literature fifty years ago, but it is a subject that has been forgotten until recently and it is only just now that the extreme importance and the extreme frequency of the diseases of the eye and brain in their relation to diseases of the nose has been realized. Ideas of the symptomatology of the diseases of the accessory cavities of the nose are still extremely hazy.

Dr. William C. Posey said, in reply to Dr. Bradfield, that the diminution in vision in the case he cited might have been due to edematous infiltration of the optic nerve. Sometimes if the vision be tested in cases of this kind it will be found to be normal, but on lowering the light the vision will be found to fall much lower than would be the case in the fellow eye, showing an interference in the conducting power of the fibers of the optic nerve. Dr. Posey agreed with Dr. Jackson that the great difficulty is in diagnosis in these cases. It is true that it is not necessary to find pus to account for these symptoms; simple congestion of the sinuses may produce them.

Malaria in British Central Africa.—Dr. H. Hearsey, principal medical officer British Central Africa, states, in the *Journal of Tropical Medicine*, that there are two forms of malarial fever in that country—the tertiary and the æstivo-autumnal. The tertian variety is by far the more common, and it frequently takes the type of a double infection. Multiple infection by tertian parasites is met with, causing the so-called irregular fever, and is the only variety of the fever which is generally resistant to quinin. Dr. Hearsey is inclined to regard hemoglobinurie fever as a "pernicious" form of the æstivo-autumnal, the absence of the parasites in the peripheral circulation being probably due to their having left the peripheral circulation for the spleen and bone marrow.

ACID INTOXICATION, AND LATE POISONOUS EFFECTS OF ANESTHETICS.

HEPATIC TOXEMIA. ACUTE FATTY DEGENERATION OF THE LIVER FOLLOWING CHLOROFORM AND ETHER ANESTHESIA.*

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AND
HENRY BAIRD FAVILL, M.D.
CHICAGO.

(*Concluded from page 696.*)

Stocker,[5] in 1895, reports an operation for strangulation of pedicle of ovarian cyst. A gangrenous pedicle was found and cyst and pedicle were removed. Stocker makes no mention of the anesthetic, but in Cohn's article referred to later he mentions chloroform as the anesthetic used. Probably this statement was made to Cohn personally. Shortly after the operation icterus was noted, the patient became restless, finally became comatose and died. An acute yellow atrophy of the liver was found at autopsy. Stocker believes that the atrophy resulted from the absorption of toxins from the strangulated and gangrenous pedicle. He does not lay much stress on the anesthetic used.

Victor Bandler,[14] in 1896, reports a case of late chloroform poisoning from Wölfler's clinic.

Patient.—Male, 42 years old; glass blower by occupation; apparently in good health, but a heavy beer drinker, often taking as many as 101 daily, was operated on at noon, July 18, 1895, for an incarcerated inguinal hernia. Omentum was found in hernial sac and was resected. The operation lasted about one hour. Anesthesia was easily produced and about 80 grams of chloroform were used. The morning following the operation icterus was noted. On the second day the icterus had increased and bile pigment was found in the urine. Patient was quiet, no pain in abdomen or wound; tongue moist; some headache and a striking apathy. Temperature 38.2 C., pulse 92. On the third day icterus was marked; urine brownish color; some blood in stool; urine rich in bile pigment; albumin, and in the sediment yellowish, granular and hyaline casts. There was some pain in the liver region, but the liver apparently was not enlarged. During the day icterus increased and little urine was passed. During the evening the patient suddenly became delirious, attempted to get out of bed and was restless.

On the following morning the patient was unconscious: there were hemorrhages into the abdominal wall, but the wound was clean. Leucin and tyrosin were found in the urine, and a diagnosis of acute yellow atrophy was made. The patient became comatose. There were petechiæ in the skin. Terminal rise of temperature to 40 C. Death occurred four days after operation.

Anatomic Diagnosis.—Acute yellow atrophy of the liver; icterus; multiple hemorrhages; fatty degeneration of the heart; chronic Bright's disease.

Erlach,[17] in 1896, in a personal communication to Bandler,[14] reports the death of a patient from acute yellow atrophy of the liver, following the use of Billroth's mixture; total extirpation of the uterus was done for fibroids. The predisposing cause was probably gastritis and catarrhal icterus. At the autopsy acute yellow and red atrophy of the liver was found.

Marthen,[18] in 1896, reports the following clinical history:

Patient.—Woman, 34, insane. The roots of fourteen carious teeth were removed under chloroform anesthesia. Anesthesia lasted about forty minutes, and about 70 c.c. of chloroform were used. Patient vomited frequently after anesthetic. The day following operation some icterus of the face and back was noted. Vomiting continued, and on the third day the patient became restless, uttered piercing cries and attempted to leave bed. There was convulsive tic of face and upper extremities. Pupils, maximum dilatation. Cheyne-Stokes respiration. Death.

Anatomic Diagnosis.—Fatty degeneration of heart muscle and kidneys. Acute fatty degeneration of liver.

W. Mintz,[19] in 1900, reports the following case:

Patient.—Male, 40 years old, heavy drinker, always well previous to present trouble. Operation, opening of appendiceal abscess and removal of gangrenous appendix. During evening of second day patient vomited three times; the vomitus contained blood. Vomiting persisted on the third day, accompanied by singultus. Slight jaundice, which increased in intensity. Death occurred seven days after operation, eighteen days after beginning of disease.

Anatomic Findings.—Erosions in duodenum and along lesser curvature, corresponding to which were numerous obliterated arterial lumina.

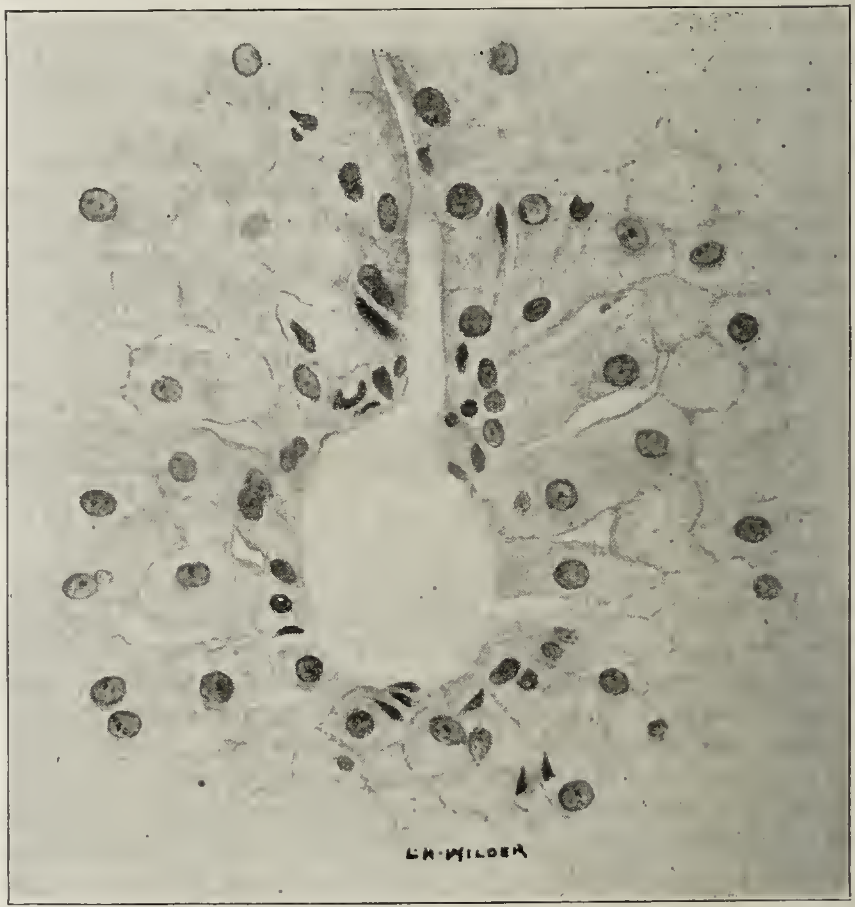

Fig. 1.—Section of liver of healthy rabbit, showing nuclear and cytoplasmic characteristics. Stained with hematoxylin and eosin.

Anesthetic is not mentioned. The author speaks of direct relation to epityphilitis.

Cohn,[4] in 1902, reports a case of protracted chloroform action resulting fatally.

Patient.—A woman, aged 21, with no apparent predisposing cause, was operated on Jan. 3, 1902, for the removal of diseased uterine adnexa. The patient took cloroform well, about 175 grams being used. During the day the patient was excited and restless, and gained complete consciousness only once. There was slight vomiting after anesthesia.

January 4: She had a sleepless night, tossed about in bed, and finally was restrained by nurse. The evening temperature, 38 C.

January 5: Patient slept a great deal, talked with nurse at times, and was conscious.

January 6: Jaundice was noted. At half-past 8 the patient suddenly became very restless and delirious. She tossed about

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[17] Erlach: Personal communication to Bandler.

[18] Martin, G.: "Ueber todtliche Chloroform nachwirkung," Berl. klin. Wochft., 1896, xxxiii, p. 204.

[19] Mintz, W.: "Akute gelbe Leber atrophie als Komplication v. Epityphlitis zugleich ein Beitrag. z. Frage der postoperativen Magen-Duodenal Blutung." Mittell. aus den Grenzfiebeit der Med., 1900, vi, p. 645.

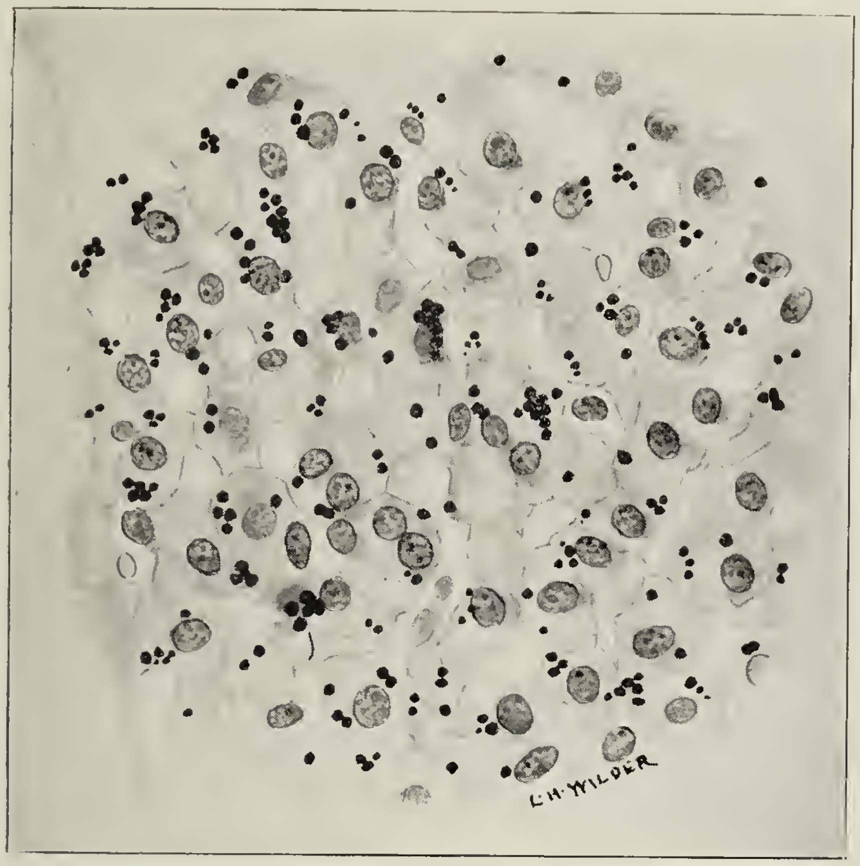

Fig. 2.—Section of liver of healthy rabbit, showing the amount and distribution of fat in the liver cells. Fat globules are represented by the heavy black. Drawing made from a frozen section, stained with Sudan III and Delafield's hematoxylin.

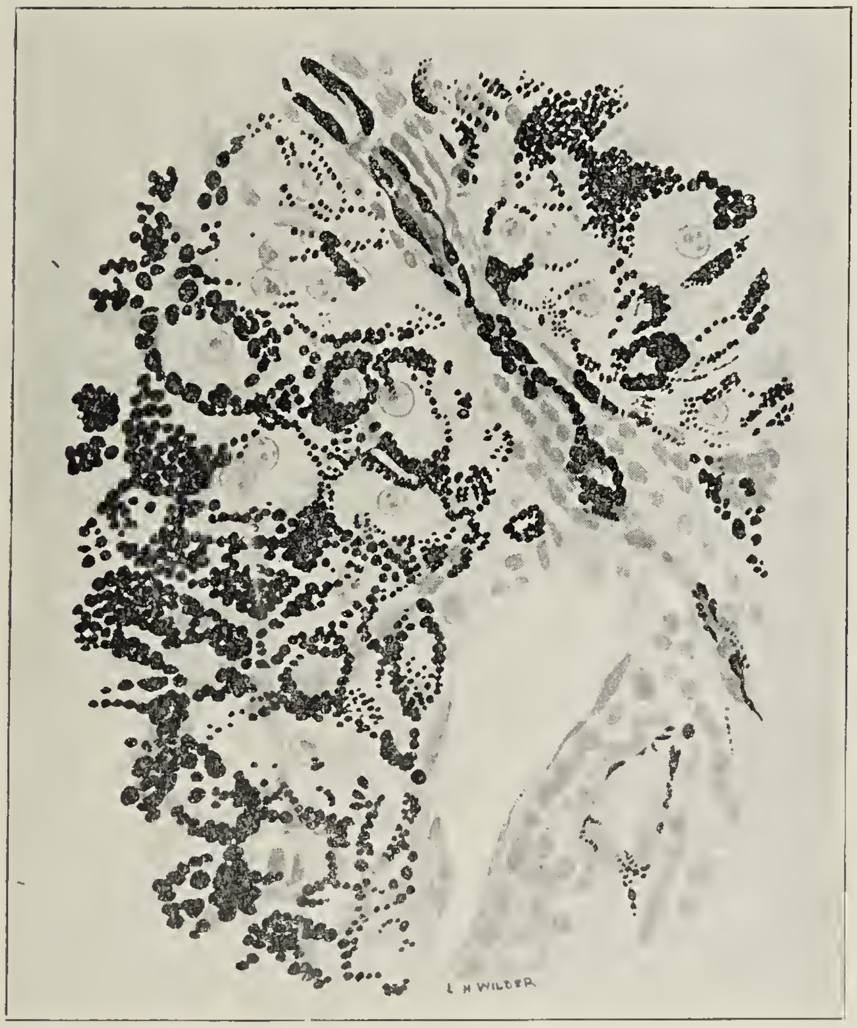

Fig. 3.—Section of liver of a rabbit, which had been chloroformed for two hours and killed forty-eight hours later. The rabbit became drowsy about twenty-four hours after the anesthetic, refused food and was partially paralyzed in the forelegs. The liver presented the typical appearance of fatty degeneration. Drawing made from a frozen section stained with Sudan III and Delafield's hematoxylin. Fat is represented by the heavy black. Fatty degeneration of the liver cells is marked; the fat droplets are grouped about the periphery of the liver cell and are separated from the nucleus by a clear, unstainable, degenerating cytoplasm. The fatty changes are found throughout the lobule, and are not confined to any particular zone.

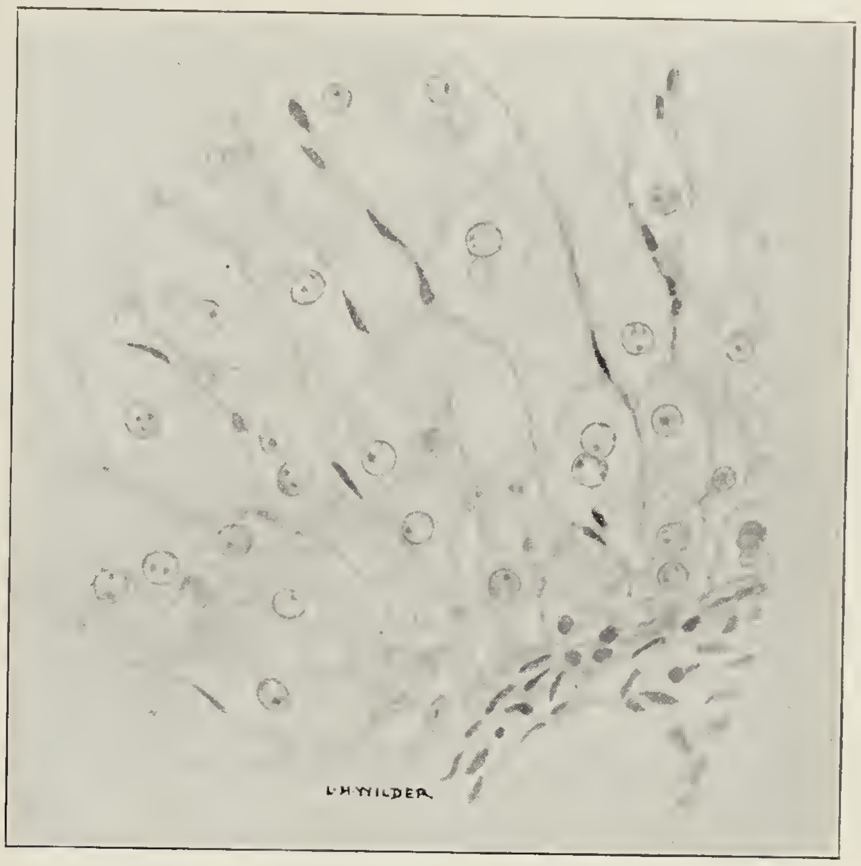

Fig. 4.—Section from liver of rabbit, which had been chloroformed for two hours and killed forty-eight hours later, stained with hematoxylin and eosin. The liver cells are swollen and vacuolated, the fat droplets having been dissolved out during the process of embedding. The nuclei stain poorly, the chromatin network having been partially destroyed. In some cells karyorrhexis is well advanced.

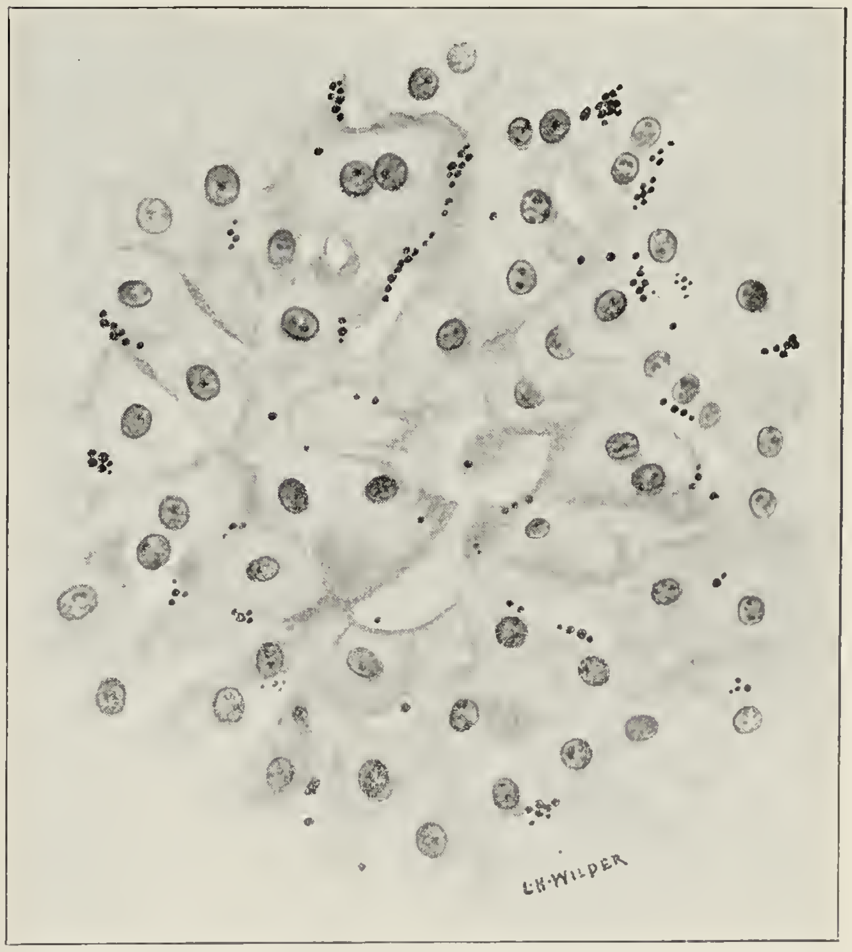

Fig. 5.—Section of liver from a rabbit, which had been etherized for two hours and killed seventy-two hours later. The animal was not sick after the anesthetic. The liver was macroscopically normal. The fat does not exceed in amount the fat found normally in the liver. It should be noted, however, that the greater part of the fat is intercellular, whereas in the normal liver it is intracellular.

in bed and cried with fright, and had to be forcibly restrained. Sleep was induced by chloral and morphin.

January 7: The patient became deeply comatose. Face reddish, cyanosis, conjunctivæ icteric; pulse small and frequent, 150. Death occurred at 8:30 p. m.

Anatomic Diagnosis.—Cloudy swelling of heart, liver and kidneys. Icteric nutmeg liver.

G. E. Brewer,[2] in 1902, reports the following case:

Patient.—S. S., schoolboy, aged 12, was admitted to Roosevelt Hospital, April 29, 1901. Two days previously he had been seized with acute abdominal pain, accompanied by nausea and vomiting. There was slight elevation of temperature and increased pulse rate. Previous health was good.

Operation.—April 29, 1901: A perforated gangrenous appendix was found in a small abscess and removed. Anesthesia produced by chloroform lasted about twenty-five minutes. The second night after the operation was a comfortable one, and the following morning temperature was normal, pulse 76. During the day the temperature remained normal and pulse did not rise above 80.

Postoperative History.—The following night (third) he slept well until shortly after midnight, when he awakened suddenly without apparent cause and uttered an agonizing, piercing shriek expressive of terror. He failed to recognize people about him; he soon fell asleep, and rested quietly until morning. He was somnolent on the following morning. When aroused he would cry out and appear much frightened. Temperature 98.5, pulse 74. He was seen by Dr. Brewer at about 11 o'clock, and when awakened he screamed so loudly that he could be heard over the whole building and was the picture of abject terror. The paroxysms lasted from a few seconds to two or three minutes. There were no symptoms on part of nervous system. Consultation was held. Peculiar sweetish odor of breath was noted. At 6 p. m. temperature was normal; pulse during day was 80. Acetone and diacetic acid were found in the urine.

At 8 p. m., 400 centimeters of blood were withdrawn from median basilic vein, and 1,000 c.cm. of normal salt solution, to which were added 15 grams of chemically pure sodium bicarbonate were injected. The paroxysms of screaming became shorter and occurred less frequently. Circulation in extremities was slower; face became slightly cyanotic and eyes expressionless. Between 4 and 5 a. m. the condition began to grow worse. Respirations became shallow and rapid. The pulse was weaker; temperature rose rapidly to 103 F., and deep and progressive coma developed. Death occurred at 11 a. m. No autopsy.

Ballin,[20] 1905: Dec. 9, 1901: Appendectomy was done on a young man, aged 20 years; lead poisoning was a possible predisposing cause, under chloroform anesthesia. A small amount of chloroform was used.

Dec. 10, 1901, 9 a. m.: Temperature normal, pulse 100, patient restless and nauseated. Urine was drawn by catheter.

December 11: There was slight jaundice of skin and conjunctiva and slight vomiting several times. He was somewhat restless in the afternoon. Temperature 97.6 F., pulse 88. The jaundice increased; patient was restless and slightly delirious in the evening. There was vomiting of greenish fluid at 5 p. m.

December 13, 8 a. m.: Temperature 98 F., pulse 86; patient was delirious all night and was noisy; he slept at short intervals; he was apparently in deep coma at these times. He threw his arms and legs about wildly and was violent. By this time he presented the classical symptoms of acute yellow atrophy.

December 14: Temperature 100.4, pulse 108. Delirium and coma seemed to increase. Gradually there was subsidence of symptoms; patient was discharged from hospital on February 11.

Ballin discusses in this paper the possible relation to chloroform anesthesia and to toxins from diseased appendix.

Guthrie,[21] in 1903, reported the following cases:

Case 1.—Woman, aged 41, was admitted to Glasgow Royal Infirmary on October 29, 1897. She had a tuberculous knee, from which she had suffered for the past twenty-seven years. During the past four years she had had occasional attacks of gallstone colic. Otherwise her health was good. The limb was put in carbolic acid dressings preparatory to operation. After twenty-four hours the patient vomited bile-stained matter; urine was greenish, becoming darker on standing. The dressings were immediately removed, but the patient remained seriously ill for eight days. After subsidence of vomiting, she remained well for nearly three weeks; urine was free from albumin and casts.

November 24: The knee was excised under chloroform. During the night, vomiting commenced and increased; nothing would stop it. Afternoon of November 26 patient was drowsy. At night she could not be aroused to answer questions. Urine was passed in small quantities and contained casts. She died comatose, November 27, three days after operation.

Autopsy.—Liver was markedly fatty. Heart was small, but musculature healthy. Kidneys were fatty, with some interstitial nephritis. Spleen was normal.

Case 2.—Boy, aged 3, admitted under care of Mr. Burghard, for webbed fingers and toes, April 6, 1903. Patient was healthy looking and well nourished. Described as "dyspeptic," subject to "bilious attacks," "night terrors," and very passionate.

Operation.—April 7, at 3 p. m., webs between second and third fingers of each hand were divided under chloroform. Operation lasted twenty minutes. Chloroform was taken well.

Postoperative History.—On April 9 patient was slightly sick, drowsy and apathetic. On the afternoon of the same day, he became slightly, but distinctly, jaundiced. In the evening, he began to scream loudly, the screaming occurring in fits and paroxysms; he was seemingly semi-conscious. There was possible slight tenderness in liver region. Liver was slightly enlarged. Urine was passed involuntarily. Screams of shrill meningitic type continued until after 3 a. m., when they ceased after administration of chloral and bromids.

April 10: He lay in a practically unconscious state. Jaundice was about the same as on previous day. Liver could be felt two fingers' breadth below the ribs. Leucin and tyrosin were not found in urine. Toward night he became comatose. The conjunctival reflexes were lost. There was slight lateral nystagmus, especially in the left eye, with a tendency in both eyes to turn upward. Respirations were loud, quick, but not typical Cheyne-Stokes. Death occurred at 2:45 a. m. on April 11; 84 hours after the operation. Temperature was between 97 and normal throughout.

Autopsy.—Liver weighed 1 pound 12 ounces; pale and fawn-colored.

Microscopic Examination.—Osmic acid preparations showed a ring of fatty cells, occupying the outer zone of each lobule; intermediate zone, a few fatty cells; none in inner zone. Cloudy swelling and fatty degeneration. Small petechiæ were found in pleuræ. Brain, meninges, kidneys, suprarenal capsules, spleen and intestines were normal.

Case 3.—Healthy-looking female child, aged 1 year and 10 months, was admitted to the Children's Hospital, Paddington-Green, under care of Mr. Burghard, February 24, 1898. Partial removal of nevus had been made in June of previous year. At 10 a. m., February 25, Mr. Burghard removed remaining portion of nevus under chloroform. The operation lasted twenty minutes. Carbolic acid was used only in strong mixture to purify skin at beginning of operation. Wound was dressed with cyanid gauze.

Postoperative History.—At 4:30 p. m. the child was slightly nauseated. Temperature, 9 p. m., 102. Child slept well during night; at 5 a. m. she awoke, restless and nauseated; at 7:15 a. m. she was restless, somewhat cyanosed, conscious. Pulse was feeble and rose to 136 and 160. At 11 a. m. the child vomited dark colored matter. At noon she became unconscious, though still restless and thirsty. At 2 p. m. there was a slight general convulsion. Saline injection was given. Death occurred twenty-eight hours after operation. Pulse was 160, temperature 106 at time of death.

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[20] Ballin, Max: "Acute Yellow Atrophy of the Liver as a Sequela to Appendectomy." Ann. of Surg., 1903, xxxvii, p. 362.

[21] Guthrie, L. G.: "Some Fatal Effects of Chloroform on Children Suffering from a Peculiar Fatty Condition of the Liver." Lancet, 1903, II, p. 10.

Autopsy.—Liver weighed 13 ounces. Slight increase of fibrous tissue along portal canals. It was preserved in alcohol, preventing good demonstration of fat, but is reported as "undoubtedly fatty in places."

Case 4.—Girl, aged 3. Dr. Lack opened postpharyngeal abscess from behind sternomastoid. Chloroform was taken well. The operation lasted from ten to fifteen minutes. Twenty-four hours later the child appeared well, but was often nauseated. Temperature was 102 F. At 8 p. m., thirty-three hours after operation, the child had a "cold fit;" there was some shivering and extremities were blue and cold. Temperature rose to 107. Death occurred one-half hour later. Carbolic acid was used at operation, but no carboluria had developed. No autopsy was permitted.

E. G. Brackett,[3] in 1904, J. S. Stone and H. C. Low reported the following:

Case 1.—M. J. B., girl, aged 8, entered Children's Hospital October 6, 1903. There was extensive infantile paralysis involving most of the muscles of both lower extremities. During preceding year frequent attacks of severe and persistent vomiting, accompanied by marked prostration and rapid pulse, closely resembling condition existing first day of fatal one, may have been predisposing causes.

Operation and Postoperative History.—Oct. 10, 1903: The child was etherized and three tendons were transplanted. She took ether badly, was cyanotic and had rapid pulse. During recovery from ether the child vomited and then seemed comfortable and in good condition for twelve hours. She suddenly began to vomit; the pulse became rapid; rose to 190, and temperature to 106. Vomiting lasted about thirty hours. The child passed from restlessness into a delirious stupor, and died forty-two hours after operation, thirty hours after vomiting began. No test was made for acetone and diacetic acid in this case, but it was later recalled that the breath had a peculiar sweetish odor.

Autopsy.—Liver weighed 510 grams. Surface was smooth and irregularly mottled with yellowish areas from 3 to 5 cm. in diameter, scattered over a reddish-brown surface. Cross-section, yellowish-brown in color. Microscopically, sections of liver, spleen, kidneys and lung were negative.

Case 2.—Girl, aged 5½ years, entered Children's Hospital, November 16, 1903. Infantile paralysis, four years before, and contracted fasciæ, causing permanent flexion of the thighs. A slight trace of diacetic acid was present in urine.

November 17, 1903: Fasciæ at upper and outer part of each thigh were divided, open method. Operation was short, little ether being used.

Postoperative History.—At 11 p. m., thirteen hours after operation, she vomited a small amount of dark brown thin fluid; during the next ten hours she vomited several times. She slept in all three hours. When awake she was very restless and noisy. Twenty-four hours after operation the condition of patient was very poor. Extremities were cold; pulse weak and rapid; expression anxious; sweet odor of breath noticeable during morning. Twenty-six hours after operation 5 ounces of urine were passed, containing large traces of acetone and diacetic acid. Thirty hours after operation the child became delirious. Pulse was very weak. Thirty-six hours after operation, 12 ounces of 2 per cent. bicarbonate solution were given intravenously; also under each breast. On second morning following operation, child became dull and apathetic; she gradually lost consciousness and coma supervened. Odor of breath became more pronounced. Cyanosis was marked during last few hours. Temperature after operation remained at about 102.

Autopsy.—Liver surface smooth, and pale yellow; in places reddish color. Cut surface, pale yellow; oily and homogeneous. Fresh examination showed marked fatty infiltration. Kidneys, fatty infiltration.

Case 3.—Girl, aged 4, entered Children's Hospital, February 15, 1904, with double congenital dislocation of both hips. Right hip had been reduced five months previously under ether. Urine was acid, free from sugar and albumin. Three days after entrance to hospital patient was etherized, and in manipulating both femurs were broken.

Postoperative History.—Child was under ether between one-half and three-quarters of an hour. She recovered from the ether as usual. In the evening, pulse was weak and rose to 150. Twenty hours after operation, pulse became suddenly weak and rapid; the color was poor. The child seemed dull; no vomiting. Breath was sweet. Acetone and diacetic acid present in urine. During the day, the child grew rapidly worse and sank into restless coma; lips blue in spite of oxygen; drawn expression of face; eyes became sunken. At 6 p. m. salt solution was injected under both pectorals, followed by marked improvement in pulse and color. Temperature was 104; at 9:30 p. m. the child was able to recognize her mother. At midnight the condition grew rapidly worse. Temperature rose to 106 at 3 a. m. Coma returned. Child died at 5:30 a. m., twenty-three hours after first collapse, forty-three hours after operation.

Autopsy.—Liver large, pale yellow, with a pink color in places. Cut surface pale yellow; lobules indistinctly marked. Knife edge scraped up fatty material. Tissue broke easily on pressure. Kidney, considerable fat in epithelium of convoluted tubules.

Kelly,[22] in 1905, reported the following case:

Patient.—Schoolboy, aged 9. Service of Dr. H. W. Cushing. Operation, May 16, 1904, for appendicitis. Ether anesthesia. The condition of the appendix did not account for the patient's serious condition, so the abdomen was explored and nothing found. A sterile gauze wick was inserted into pelvis and to stump of appendix, and abdominal wound was closed. An area about 1 centimeter in diameter of slight edema and redness was found about 2 cm. from the tip of the appendix. The appendix contained a grape seed. The patient's general condition so grave that 250 c.c. (1-50,000) adrenalin salt solution were given. He was restless after operation. Urine was negative before operation.

Postoperative History.—May 18: Sweetish odor of breath continues. Patient mildly delirious and drowsy. Urine contains acetone and diacetic acid. Vomiting continues.

May 22: General condition markedly improved. Still occasional vomiting. Acetone and diacetic acid present in urine. No delirium, but patient is drowsy and resists daily dressing.

May 26: Occasional vomiting. Expression dull. Patient sleeps most of time; refuses everything by mouth. Acetone and diacetic acid in urine. Patient slowly failed, and in spite of active stimulation died at 11:05 p. m.

No autopsy. Examination of liver during operation was negative.

REVIEW OF SYMPTOMS.

The symptoms appear in from 10 to 150 hours after the anesthesia. The average of Guthrie's first series of ten cases being 37½ hours.

In Brewer's case, a boy of 12, following an operation for appendicitis lasting twenty-five minutes under chloroform, nothing unusual was noted immediately after. The second night following the operation was a comfortable one. He slept six hours; the next day his pulse was 76, and temperature normal. He was cheerful, happy, had no pain, and was hungry.

The following night, he slept quietly until shortly after midnight, when he suddenly awakened and without any apparent cause uttered a piercing shriek, which alarmed his nurse and mother. He continued to scream for several minutes, looked wildly about him, and apparently failed to recognize those around him. A few moments later he fell asleep and rested quietly until morning. The following morning he was distinctly somnolent, when aroused would cry out and appear frightened, but could easily be soothed by his mother.

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[22] Kelly, Jas. A.: "Acid Intoxication: Its Significance in Surgical Conditions," 1905, xli, p. 161.

At 11 in the morning he awoke and again uttered an agonized cry. He continued to scream, so that he could be heard all over the building. Delirium was followed by coma. The face seemed slightly cyanosed; acetone and diacetic acid were found in the urine and blood. Death. No autopsy.

Brewer discusses the case and comes to the conclusion that it was an autointoxication, and considers ptomain poisoning, uremia and acetonemia, and concludes that acetonemia was the cause of death.

Brewer describes the three characteristic symptoms, as sweetish odor of the breath, delirium and rapidly fatal coma. Another symptom is that of air hunger, described by Kussmaul, evidenced by deep breathing and a bright red color of the mucous membranes (this was noted in our case), Cheyne-Stokes respiration and cold extremities.

Brackett, Stone and Low describe the following symptoms: Vomiting associated with collapse; a very weak and rapid pulse; an absence of fever until just before death; cyanosis in the fatal cases, causing extreme dyspnea; apathy and stupor alternating with periods of restlessness, at first, but in the fatal cases gradually deepening into coma and death; and the presence of acetone in the breath and urine.

Stocker describes the symptoms in his case as follows: The morning of the second day after the operation the patient, who had been doing well, became very restless, threw herself about in the bed, but mind was at first clear. The next day coma and death.

Guthrie says of symptoms:

> After recovery from the immediate effects of the chloroform there was usually an interval of a few hours at the end of which the child would begin to utter piercing cries at short intervals, disturbing the whole building by its shrieks, grinding its teeth, tossing, struggling and requiring constant attention lest dressings be torn off or fractured bones displaced. The pupils were often dilated, sometimes unequally, the face being flushed or pale, with a look of wild terror and anxiety. Consciousness was sometimes lost early and never regained; sometimes there were intervals in which the child would be dull and apathetic, but would answer rationally when addressed, and usually deny being in pain. Vomiting was a marked feature in all but one case. It was copious, frequent, persistent and the vomited matter sooner or later almost exactly resembled the dregs of beef tea.

In eight out of ten cases, the symptoms of a marked cerebral type were present, resembling maniacal delirium.

Temperature (10 cases): In 1 case it rose to 103 four hours after operation, and remained there throughout. In 2 cases it rose to 103.2, and 104.6, just before death. In 1 case it remained between 98 and 99. In 6 cases it varied from 99 to 102.

Two cases suggested meningitis, running unusually acute and rapid courses; except for absence of jaundice and hemorrhage, they might have been diagnosed as "acute yellow atrophy."

In Kelly's cases there was apathy, alternating with restlessness, vomiting occurring without apparent cause, following immediately on taking anything into the stomach, coma and death. The pulse was increased in rapidity, of decreased tension, and in some cases became very weak. Fever was absent except in severe cases, when the temperature would rise to 102 or 103. The face alternately pale or flushed, was at times expressive of great anxiety.

PREDISPOSING CAUSES.

Age, 1 to 10 years, 17 cases; 11 to 20 years, 3 cases; 21 to 30 years, 1 case; 31 to 40 years, 2 cases; 41 to 50 years, 2 cases. Age not mentioned in 5 cases.

Sex: Male, 9 cases; female, 18 case. Sex not mentioned in Bastianelli's three cases.

Possible predisposing or accessory causes are, alcohol, lead, carbolic acid, mercurial and iodoform intoxication. Other causes are homesickness, fright, change of food (Brackett, Stone and Low), intestinal fermentation and putrefaction; extensive fatty changes associated with infantile paralysis; starvation; sepsis. In pregnancy, in the presence of a dead fetus; the existence of a gangrenous mass, diabetes, carcinoma, anemic states from any cause and hemorrhage are also to be considered.

POSTMORTEM FINDINGS.

Liver: Fatty degeneration or infiltration occurred in 16 cases; acute yellow atrophy in 3 cases; icteric nutmeg liver in 1 case; no distinct liver changes mentioned in 4 cases; recoveries in 2 cases; no autopsy in 4 cases; total, 30 cases.

CHANGES IN OTHER ORGANS.

The following changes were noted in other parts of the body: Fatty degeneration of heart; different grades of nephritis; fatty degeneration of muscles of lower limbs; considerable venous congestion of brain; pyelitis; tuberculosis of bronchial lymph nodes and vertebræ.

CONCLUSIONS.

From the analysis of clinical and laboratory reports bearing on this subject, we believe that we are warranted in the following conclusions:

1. Anesthetics, especially chloroform (ether to a very limited degree), can produce a destructive effect on the cells of the liver and kidneys and on the muscle cells of the heart and other muscles, resulting in fatty degeneration and necrosis, very similar to the effects produced in phosphorus poisoning.

2. The constant and most important injury done is that to the liver.

3. This injury to the liver cells is in direct proportion to the amount of the anesthetic employed, and the length of the anesthesia.

4. Certain individuals exhibit an idiosyncrasy or a susceptibility to this form of poisoning which it is difficult to explain.

5. There are certain predisposing causes which favor this destructive effect of chloroform, among which are, (a) age—the younger, the more susceptible; (b) causes which lower the general vitality of the individual and probably the vitality of the liver cells, such as diabetes, previous recent anesthesias, infections from pus germs, diphtheria, intoxications from a dead fetus in the uterus, a gangrenous mass in the abdominal cavity, etc.; (c) exhaustion due to hemorrhage; (d) exhaustion due to starvation; (e) exhaustion due to wasting diseases, such as carcinoma; (f) lesions which have resulted in extensive fatty degenerations, such as occur in the limbs in infantile paralysis; (g) chronic diseases involving both liver and kidney, such as cirrhosis and nephritis.

6. As a result of this fatty degeneration and necrosis of the liver cells, toxins are produced either from the liver cells themselves or as a result of the failure of these cells to eliminate substances which, under normal conditions, they eliminate, but which under these abnormal conditions they fail to do, and these substances, therefore, may accumulate and produce toxic effects.

7. These toxins produce a definite symptom-complex which makes its appearance from 10 to 150 hours after the anesthesia. This symptom-complex consists of vomiting, restlessness, delirium, convulsions, coma, Cheyne-Stokes respiration, cyanosis, icterus in varying degree, and usually terminates in death.

8. It is probable that milder degrees of this poisoning are recovered from, and that the transient icterus noticed after chloroform anesthesia without other evident cause is due to such poisoning, and many cases which exhibit restlessness, fright, mild delirium, drowsiness, etc., after anesthesia may be due to the same cause.

9. This disease is an hepatic toxemia; the toxins producing it hepatic toxins; and possibly the previous condition making its development easily possible should be described as liver insufficiency. Just as we have for a long time recognized a condition, uremia, in which we find arising from a variety of noxious agents, anesthetics, poisons, infections, pregnancy, etc., affecting the secreting cells of the kidney and preventing their normal function, a pathologic condition, accompanied with a certain definite symptom-complex; so we must now, we believe, recognize a condition involving the liver in which we find from a variety of noxious agents (anesthetics, poisons, infections, pregnancy, etc.), affecting the secreting cells of the liver and preventing their normal function, a pathologic condition which we must describe as hepatic toxemia, accompanied with a certain symptom-complex, and showing certain changes postmortem.

We believe that the condition of acute fatty degeneration of the liver with resulting hepatic toxemia is as definite a pathologic entity as is acute pancreatitis with fat necrosis.

10. As by-products in this toxemia, but not as the essential poisons, are found acetone, diacetic acid and betaoxybutyric acid in the blood and urine.

11. Postmortem reveals fatty degeneration of the liver, fatty degeneration and mild degree of inflammation of the kidneys, and, in extreme cases, fatty degeneration of heart and other muscles. The lesion of the liver, we believe, to be the overshadowing and important one, and the one which is responsible for the symptoms and fatal result. The injury to the liver, in some cases, is so great as to result in practically a total destruction of the organ.

12. Somewhat similar hepatic toxemias resulting from fatty degeneration of the liver cells occur in other conditions, and are accompanied with very similar symptoms. In such conditions as phosphorus poisoning, diabetes, puerperal eclampsia, acute yellow atrophy of the liver.

13. This fatty degeneration of the liver with hepatic toxemia following anesthesia is almost invariably due to chloroform in the fatal cases. Ether is seldom the cause of a death of this kind.

14. This serious and even fatal late effect of chloroform which has heretofore not been generally recognized must still further limit the use of this powerful and dangerous agent.

15. The possibility of the development of hepatic toxemia makes chloroform distinctly contraindicated in those cases in which there exist the conditions which seem to favor its development, i. e., diabetes, sepsis, starvation, hemorrhage; the presence of intoxication from dead material; the presence of fatty degenerations, as already cited, after infantile paralysis, and lesions of the liver. The susceptibility of children to this hepatic toxemia must be recognized. That chloroform is capable of producing these serious late poisonous effects is a strong argument against its employment, and an argument in favor of the more general use of ether; and yet we are confronted at times with the Charybdis of ether pneumonia, on the one hand, and the Scylla of chloroform hepatic toxemia, on the other.

16. The recognition of this danger of hepatic toxemia is a strong argument against the employment of chloroform for long anesthesia, as it can be shown that a two-hour chloroform anesthesia is almost invariably fatal to rabbits and guinea-pigs, from fatty degeneration and necrosis of the liver cells; and a two-hour chloroform anesthesia in man is an exceedingly dangerous thing.

17. These facts in regard to the late poisonous effects of anesthetics and the fact that the dangers increase with the amount of the drug employed, and with the length of the anesthesia form a strong argument in favor of rapid operating and in favor of limiting in every way possible the length of the anesthesia and the dose of the anesthetic. For example, time-consuming preparations of the patient should be made before, not after, anesthesia. In the light of this present knowledge, no surgeon can claim, as some have in the past, that after the patient is once asleep, that it makes no difference whether it requires one hour or two hours for the doing of an operation. In the light of this knowledge, for instance, three-hour breast amputations with the unnecessary ligation of fifty vessels, becomes bad surgery.

18. This problem seems to us a very important one, and worthy of the most careful study and research. At present, we are practically limited to chloroform and ether as general anesthetics. Each has its danger; each has its special field in which one is safer than the other. We have, as a rule, heretofore, employed chloroform in cases in which there was a previous lung or kidney lesion, and in children, with the idea that it was less likely to produce nephritis and pneumonia, and have used ether in the bulk of our work and felt that it was specially to be selected in heart lesions. We must now add new limitations, and attempt to determine by previous examination whether there is what might be called hepatic insufficiency, the conditions present which favor the development of the late poisonous effect of chloroform on the liver. Another way of solving this problem would be the discovery of new anesthetic agents, which do not carry with them these poisonous effects, or the employment of the present anesthetic in such a way as to avoid these dangers.

For instance, it has been suggested that chloroform and oxygen combined would prevent the poisonous effects of chloroform alone, and there is some evidence to support this view. This should be determined by special research.

Again, nitrous oxid and oxygen combined can be employed for long anesthesias, and experience may show that this mixture may prove to be very much safer than chloroform and ether. Although at present there is not enough evidence on which to base such a claim, in this connection I would cite the fact that the anesthetist in Dr. Bevan's surgical clinic, Dr. F. B. Moorhead, has found that after prolonged anesthesia with gas there is a marked decrease in the amount of hemoglobin, apparently a rather serious destructive effect on the blood, which may limit the use if this mixture.

In conclusion, we believe that the dangers of late chloroform poisoning must be more generally recognized and understood; that the lessons from this study are the dangers of long chloroform anesthesias and chloroform anesthesias in patients suffering from the conditions which we cited favored its development; and, we must recognize the susceptibility of children to this form of poisoning. The problem of how to prevent these deaths confronts us unsolved. We have taken the first step in its solution, for we now recognize the cause of these deaths. We must work and find some way to prevent the occurrence of these serious and fatal accidents.

DISCUSSION.

Dr. Herbert C. Moffitt, San Francisco, stated that during the last three years he has seen in consultation six cases similar to the one reported. In each instance there had been some previous affection that might render the liver insufficient. One man had gummata of the liver, with gallstones. A woman had gallstones with frequent attacks of cholecystitis. A child had an attack of catarrhal jaundice some months before an operation under chloroform for mastoid disease. A young woman had had malaria for years, with enlarged liver and spleen, before she was operated on for acute appendicitis. Another young woman had had catarrhal jaundice some weeks before an exploratory laparotomy was done under chloroform. In four of the cases there was the clinical picture described by Dr. Bevan. It has been Dr. Moffit's rule of late, in view of such experience, to forbid the use of chloroform in any condition of suspected hepatic insufficiency.

Dr. Harry M. Sherman, San Francisco, said that Dr. Bevan has possibly explained something that puzzled him in a patient some time ago. A girl after an operation suffered from persistent vomiting and some jaundice with almost suppression of urine. One day the urine would contain casts with no albumin, and the next day albumin but no casts. Naturally Dr. Sherman thought there was some postoperative nephritis. To stimulate the kidney function he used salt solution under the skin, and the symptoms, including the vomiting, stopped and the patient began to take food, but the urine was not increased in quantity. Evidently it was not a case of nephritis and may not unlikely have been one that would fall into the class described by Dr. Bevan.

Dr. Woods Hutchinson, Portland, Ore., declared that the greater frequency of the occurrence of this condition in children is probably due to the fact that physicians have always thought it perfectly safe to use chloroform in children. It also probably explains the unexpectedly bad results that sometimes follow operations for gallstones, the liver being already disabled and unable to resist the attack of the anesthetic. The liver, Dr. Hutchinson said, is a poison filter and reduces toxins in the blood both from the portal and general systems. These toxins are changed into the harmless excretion, bile. The liver certainly is the organ which first fails in puerperal eclampsia, probably in most cases of Bright's disease, and is beginning to attract suspicion even in acute infections like pneumonia. In chronic poisoning by alcohol, arsenic or phosphorous the liver acts as chief protector of the system and first shows the result of the attack in cloudy swelling and cirrhosis. No matter what the disease, our patients die with one familiar group of symptoms—headache, convulsions, blindness, coma, Cheyne-Stokes respiration, which is called "uremia"—because urea is precisely the one substance which the liver is unable to form and hence is present in the blood in less amounts than usual. Uremia is the syndrome of liver failure. Just as long as the liver can destroy the toxins just so long the system will be able to resist.

Dr. Otto S. Binswanger, Portland, Ore., agreed with Dr. Bevan that death in chloroform poisoning is due to degeneration or death of the liver cells. Dr. Binswanger said that considering the part played in diabetic coma by oxybutyric and diacetic acids, he is inclined to believe that these acids may be responsible to some extent for the fatal results in these cases. In diabetes, he said, these acids cause an acidosis or a reduction in the alkalinity of the blood. They neutralize to some extent the carbonate of potassium or sodium. The carbonates are the chief agents for the removal of carbon dioxid. They are converted into bicarbonates, which in turn are broken up in the lungs into normal carbonates again and carbon dioxid, which latter substance is exhaled. If the quantity of carbonate of potash is reduced by the presence of oxybutyric and diacetic acid, naturally its functions as a carbon dioxid carrier will be reduced. The carbon dioxid will accumulate in the blood and give rise to carbon dioxid poisoning; exactly what happens is diabetic coma.

Dr. D. A. K. Steele, Chicago, reported one additional case of this comparatively rare condition. Two years ago he was called to see a girl aged 12, who was suffering from an acute attack of appendicitis. She had suffered an acident two weeks before by falling down stairs and fracturing both bones of her left forearm. The fracture was reduced under chloroform anesthesia. Dr. Steele had her removed to the Chicago Hospital and operated on her on the third day of her attack of appendicitis, finding an intensely inflamed and adherent appendix buried in a mass of lymph exudate, but not perforated. Chloroform was the anesthetic used during the operation. Everything went along normally for three days, when she began to be restless, delirious, and developed the classical symptoms referred to by Dr. Bevan. At the time of her death Dr. Steele attributed it to actonemia, but now he is convinced that it was a case precisely similar to the one described by Dr. Bevan.

Dr. A. D. Bevan said that Dr. Binswanger is quite correct in attributing certain results to acidosis. The primary cause is the destruction of the liver cells with the liberation in some way of a toxin which produces this symptom complex. Acetone and diacetic acid are to be regarded not as the essential cause, but as by-products in the pathologic process.

THE PRINCIPLE OF LIFE.*

MARSHALL LANGTON PRICE, M.D.

BALTIMORE.

> "The days of our age are three score years and ten; and though men be so strong that they come to four score years, yet is their strength then but labor and sorrow, so soon it passeth away and we are gone."

To many of us who travel along the level, but somewhat narrow pathway of scientific research, there doubtless comes the desire, to leave its beaten surface and to stray in those bordering fields where fact and fancy are so delightfully intermingled; where the skies are always blue, the sunshine bright, and the flowers fresh and blooming; where substance appears as shadow and shadow substance and our pet hobbies, viewed with our indulgent paternal eyes, seem beautiful and spirited thoroughbreds. In this land, we can appropriately ask, in the words of the cynical Roman Governor of Judea (freed from the rigid limitations which science imposes), "What is truth?"

An excursion into these fields is not without benefit, even to the hard-headed man of science, and we have a precedent for invading the territory usually considered the exclusive possession of the poet, the artist, and the musician, from the highest possible source. M. Metchnikoff has recently made an excursion into this fascinating country and among the pebbles which he has gathered on its shores are a number of precious stones, which can not fail to add lustre to the crown of a man already a ruler in the field of scientific research.

I have chosen to-day (rather than to attempt the difficult, if not impossible task of adding to this session on water, which has already been so fully and ably discussed) to consider some of those elementary principles affecting human life; always so near to us as hygienists; as a sort of *confession fidei*, if I may be allowed to make such for this congregation.

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

As the faithful in the three Catholic religions never part company without the confession of faith contained in the Nicene or Apostolic creed, so it seems to me proper that we should not separate in our annual meetings without reiterating some of those elementary principles which underlie our endeavors. (A practice which I commend to the consideration of our future officers.)

The primary objects on which our complicated sanitary procedures are built are, after all, the preservation and lengthening of human life; or, the problem of hygiene stated in biologic form, is the preservation, conservation and increase of those metabolic functions of the cell, the resultant of whose sum total we recognize as the phenomenon of life. We can properly leave in other hands the equally important objects of human usefulness and happiness.

I have endeavored to-day to analyze some of these elementary principles connected with a problem, obscure, but of vital interest, and in their consideration to attempt to open a door which has remained closed for over 8,000 years of human history. This problem concerning which are probably the most important and interesting of Metchnikoff's recent investigations, is that of "age," perhaps the most mysterious and insoluble of the problems with which human philosophers have attempted to deal. The question, Why should a man die? is only secondary in importance to the centuries old question of Job, "If a man die shall he live again?"

M. Metchnikoff may be credited with being the first scientist who has directly investigated this problem and who has given us anything bearing on its causation. The discordance of even the tentative theory which he pronounces will appear in the further analysis of the biologic principles connected with senility.

In the investigation of this problem, Metschnikoff has made examination of the tissues and cells of numerous men and animals who have died at advanced years. He ascribes the failure of function which we recognize as age to the inability of the highly differentiated cells to resist the action of the phagocytes which he has found, particularly in the nervous tissues, to attack the former and to destroy them by the usual digestive activities. It will be noted that this deficiency of the aged cell which M. Metschnikoff has observed—though of the utmost importance in the fate of the organism—is merely one of the defects, of which there are probably many, inherent in the senile cell, and its presence there does not explain the important problem of why the aged cell should be deficient at all; and it is difficult, indeed, to conceive, why the one-thousandth or ten-thousandth descendant of a cell should be less able properly to perform its function than the one-hundredth or five-hundredth descendant.

From our present knowledge, we can only advance three theories that would properly account for the condition known as senility in an animal organism:

First, that the failure of the cells is due to successive and repeated inflammations, and that as a result of this action of pathogenic organisms and toxins the specific cells are destroyed and are replaced by connective tissue cells, with the formation of fibrous or scar tissue, which, of course, is unable to perform the functions of the cells which it replaces.

Second, that the failure of the cell is a nutritive one, the cell becoming unable with the advance of time, to maintain and to continue those metabolic processes which are required of it in the performance of its special functions.

Third, that the failure of the cell is due to the loss of the properties which enable it to resist and to overcome the constant activities of pathogenic organisms and toxins.

If we accept the first hypothesis we must believe, other things being equal, that the functioning power of the organism is to be measured wholly by the number of cells which it contains capable of performing their specific metabolic functions, that the physiologic age of the organism will depend in turn on the number and extent of the inflammatory and toxic processes to which it has been subjected. That this substitution of functionating cells by connective tissue cells in the form of a fibrous reticulum or scar is a decided factor in the "age" of the organism there can be no doubt, but the hypothesis that it is the only condition connected with what we know as old age, is open to numerous objections.

In the first place, we would expect to find those organisms which had undergone repeated general inflammations always more advanced in the period of physiologic age than other organisms of the same years, not subjected to the results of inflammations or toxemias—a supposition not in accord with the general clinical experience of the present generation.

Second, we find the changes incident to age in certain organs and tissues which, so far as we can ascertain, have undergone neither inflammations nor toxemias. For example, in the skin of the old man we find an atrophy, a loss of elasticity, and a tendency to malignant and other morbid proliferations which are evidently independent of inflammatory or toxic influences; nor do the commonly recognized inflammations of the skin seem to have any influence in producing these degenerative changes.

The third and most forcible objection to accepting this hypothesis (and probably the most characteristic deficiency of the senile cells) is the loss of the power of reproduction and regeneration. This regenerative deficiency can not have any relation to local or general inflammation, and the general rule seems definite for all organisms of the same species: *The regenerative power of the cells composing an organism are inversely proportional to the age of the organism.* Aside from this most striking deficiency in function, we might ascribe many of the tissue degenerations to another condition practically always associated with age, viz., to a diminished blood supply dependent on arteriosclerosis. We see these degenerations frequently, however, in tissues possesed of an abundant blood supply, and in which arteriosclerosis is absent. On the other hand, involution degenerations do not occur in the tissues of the young, even when a local arteriosclerosis is present or when the vascularity of the part is diminished by reason of other conditions.

Arteriosclerosis does not in itself constitute age, although it is probably the best measure which we possess of senility in the general cellular system. We probably have in the vessels, preceding and causing their eventual sclerosis, both diminished resistance to bacteria and toxins and loss of regenerative powers of the endothelium, all acting to produce the substitution of the endothelial cells by fibrous tissue. The production of fibrous tissue is itself, no doubt, directly associated with the loss of the power of regeneration on the part of the ectodermic or endodermic cells which it usually replaces.

We are then compelled to fall back on one of the two remaining hypotheses—either the senile condition of the cell (of which loss of the regenerative function is the prominent sign) is due to failure of the metabolic activities connected with nutrition, or it is due to lack of power to neutralize and to oppose the action of pathogenic organisms, or of toxic substances.

On closer analysis, we perceive both these former deficiencies to be present and inherent in the senile cell, in common with the loss in the power of regeneration, though the latter deficiency is most evident.

Whether we regard the depreciation of the cell as metabolic or bacteriolytic the failure must be primarily nutritive, as Metchnikoff has clearly shown that the antitoxic properties of a cell are closely connected with its nutrition and growth and are probably only specific modifications of the function of nutrition to adapt the cell to the special necessities of the organism. There must be some common source from which the cell derives its metabolic, bacteriolytic and antitoxic functions. As these functions diminish with advancing years, it is natural to suppose that the source from which they are derived diminishes in like manner; our first step in the investigation of this source, therefore, would be the comparative investigation of the senile and juvenile cells. The comparative analysis of the young and old cell does not as yet show any perceptible difference in their chemical composition, nor can we detect with the microscope any structural divergence; it is in their biologic functions and properties alone that we detect their dissimilarity. That the deficiency of the senile cell is a chemical one we have reason to believe by analogy with other functionating cells. When we speak of a cell being worn out or exhausted we infer that some substance which the cell previously contained has become deficient during the performance of its functions.

We judge from the constant chemical composition of specific cells of all ages that such substance, if existant, must be present in minute quantity.

It is on the theory of the existence of this substance that I have formulated my hypothesis:

1. *That every living cell, human or animal, contains a specific substance necessary to its functions.*
2. *That this substance becomes progressively exhausted during the life of the organism, to a certain stage, beyond which the metabolic activities of the cell are brought to a close.*
3. *That this substance alone, of all the materials entering into the composition of the cell, is not renewed after a certain early stage of the life of the organism.*
4. *That the age and duration of the activities of the cell are dependent on the amount of this substance with which it is primarily endowed.*
5. *That the primary endowment of the cell occurs at a very early period of its growth.*

This substance I have called bioplasmine.

We may illustrate the relation of a bioplasmine to the organism as follows: The individual may be compared to a lifeboat cast adrift from a sinking ocean liner (the parent organism), the members of the crew representing the individual cells, and a cask of water the supply of bioplasmine from the ship's stores. This supply may be exhausted quickly or slowly, according to the demands made on it, but it will never be renewed. The water, it will be further noted, is not equally apportioned among the members of the crew.

As all the materials of the cell, except this specific cell substance, are constantly renewed, the bioplasmine molecule occupies a place apart in the cell substance.

That this molecule is independent of the composition and activities of the cell substance proper we can infer from the apparently identical composition of the juvenile and senile cells. The specific chemical composition of the cell remains the same, according to our present means of chemical analysis, whatever its age, and it is mainly by the loss of power of reproduction and regeneration and the bacteriolytic functions that we can perceive its gradual decline and final dissolution.

As regards the nature of bioplasmine, it can only be said that it remains very much the same substance during life, except that its activities become progressively lessened. This would lead us to believe that we have to deal with a comparatively large proteid molecule which has the power of splitting off some body essential for the metabolic changes concerned with nutrition. This substance may be called metaboline or nutrescine. The bioplasmine molecule may be represented by the following graphic formula (Fig. 1):*

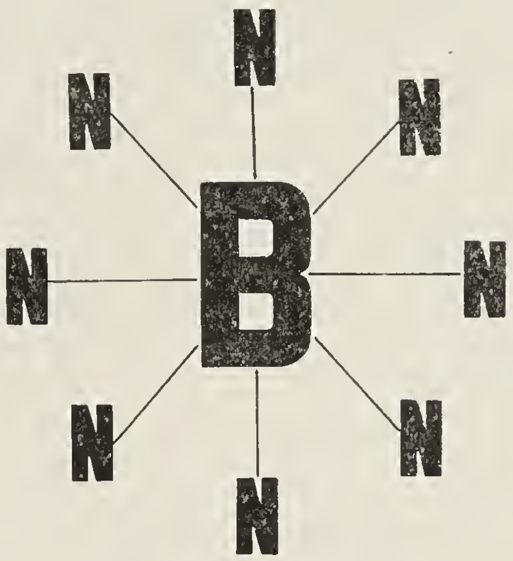

Fig. 1.—Bioplasmine.

It is not likely that this substance is formed by a single process of combination, but rather that it is the result of a series of anabolic changes.

For its origin I believe that we must look to the very earliest of the processes leading to the formation of the embryo, preceding the time when the activities of formation and growth become macroscopically manifest.

Judging by analogy, we would suppose that the substance called bioplasmine, like other substances concerned with metabolism (such as the enzymes), had a preliminary body or zymogen from which it is generated. This substance may be called *bioplasminogen.* The transformation of bioplasminogen into bioplasmine taking place in the cells during the act of absorption. We have first to consider, then, the formation of bioplasminogen.

Some of the reasons have already been briefly mentioned for placing the time of the formation of bioplasminogen in the early history of the embryo, and there are further reasons for supposing that this formation takes place at the beginning of the life of the organism as a separate entity, viz., during the act of conception. The strong physical attraction between the male and female sexual elements would indicate a basis in a strong chemical affinity, and it is during this act that a substance enters the composition of the cell that can not be renewed during its later life.

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* In all the figures B represents the central radicle proteid or binding group: and N the "side chain" group spoken of as metaboline or putrescine.

The action of the male on the female cell would appear primarily to be one of ionization, and it is possible that we may find in the nutrescine molecule a substance peculiarly capable of ionic dissociation. The nutrescine molecule need not necessarily be of proteid composition, but may consist of various mineral elements or salts combined in such a manner as to produce the degree of ionization necessary in proteid anabolism.

Loeb believes that the primary action of the male on the female cell, leading to the formation of the morula mass, to be one of ionization. As is well known, he has been able to produce the early stages of the processes following impregnation, leading even as far as the formation of imperfect embryos, by the action of dilute solutions of various salts, particularly potassium cyanid, on the unimpregnated ovum. It is interesting to note that by the action of this salt an extreme prolongation of life in certain low animal forms has been possible. It is possible that cyanogen or a similar radicle may enter into the composition of the nutrescine molecule of the bioplasmine body.

We may conceive of three, out of many intermediary stages, in the formation of bioplasmine. The specific elements leading to its production are doubtless to be found in the elementary male and female cells. These cells we may consider to contain substances possessed of strong mutual affinities which may be named spermatoplasmon and ovoplasmon, respectively (Fig. 2). By their interaction, ovoplasmon and spermatoplasmon give rise to bioplasminogen; this body is then taken up by the cells, probably during their active segmentation, and by them further transformed during absorption into bioplasmine. There would be no reason to suppose that the cells retain this power of transforming the bioplasminogen molecule and of absorbing it indefinitely, and it is probable that this function is at an end after the embryonic cells have ceased their active segmentation, i. e., after the formation of the morula mass.

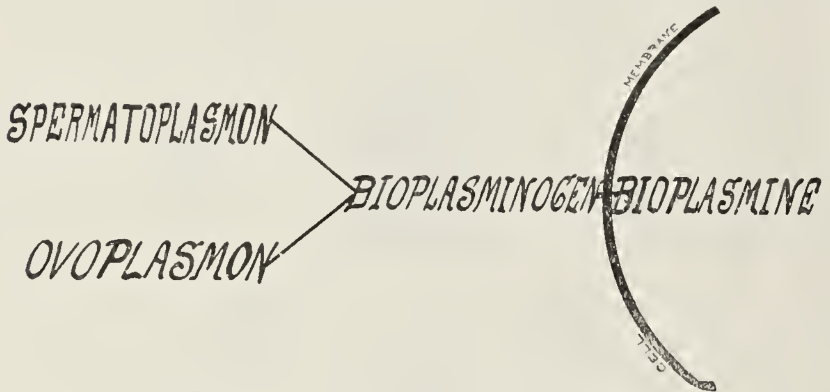
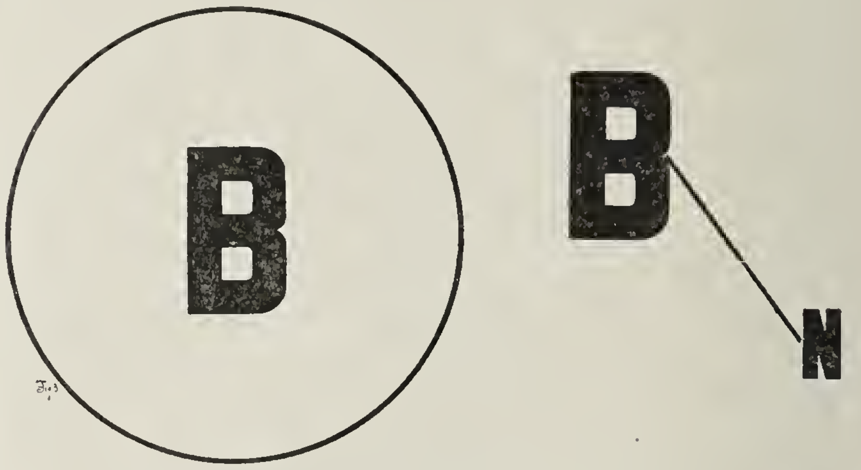


Fig. 2.—Formation of Bioplasmine.

The bioplasmine molecule is apparently quite stable, though it is capable of disassociation with great readiness under the proper stimulus.

Starting with the graphic formula (Fig. 1), bioplasmine undergoes progressive decomposition by the loss of successive nutrescine molecules, the completed reduction only occurring theoretically with the loss of all the N/ molecules (Fig. 3). More probably, however, a complete reduction would not be possible through the forces of vital chemistry; the end-product would be better represented theoretically by the graphic formula in Fig. 4. The power of parting with the N/ molecule which the bioplasmine body possesses when subjected to the action of certain stimuli depends on a sort of instability which makes it readily capable of decomposition under physiological influences. It becomes progressively more stable as the number of N/ molecules diminish until it reaches a stage where the physiologic stimuli are no longer capable of causing dissociation, so that practically the metabolic activities of a cell never survive to a stage where the whole molecule would correspond to the graphic formula shown in Fig. 3 or 4, but would cease when the number of N molecules was still relatively large.



Figs. 3 and 4.—Reduction of Bioplasmine.

We may use these formulæ as a graphic means of representing the physiologic age of the cell according to the state of the bioplasmine molecule which it contains. Dividing the age of the cell into three periods, we can represent the youthful, middle-aged, and senile cells as is shown in Fig. 5.

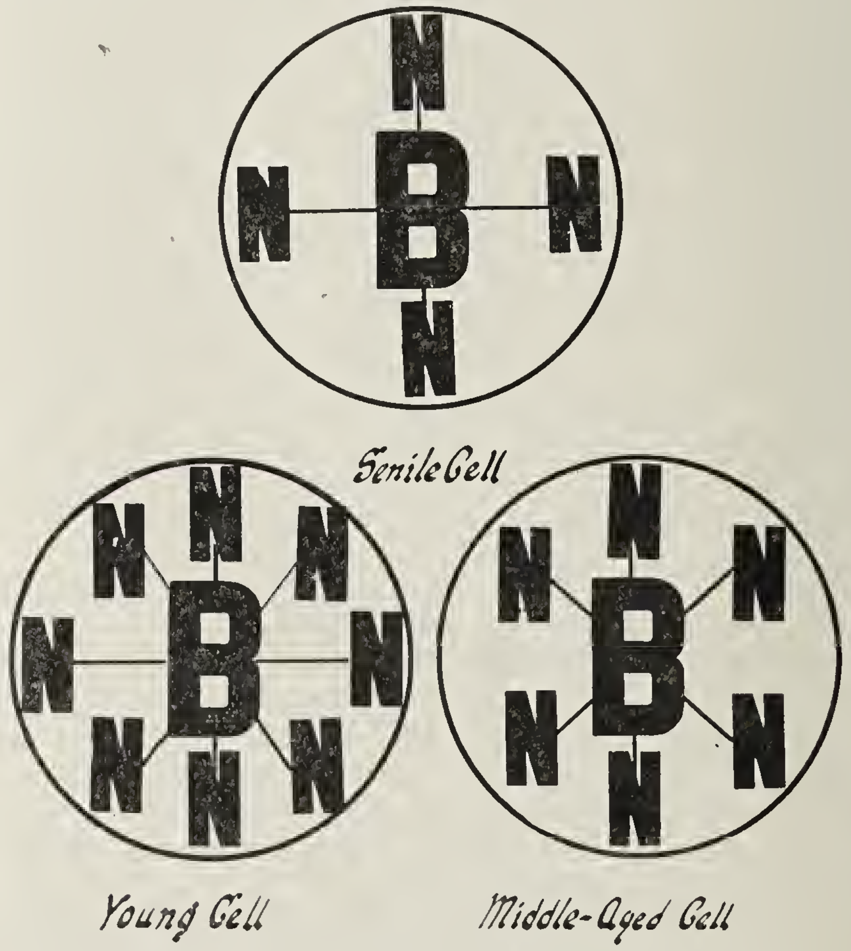


Fig. 5.—Three periods in age of the cell.

The molecule N probably represents the essential body both in metabolic processes and in the formation of antitoxins and bacteriolysins, so as the cell becomes older not only do its metabolic functions become diminished, but it is increasingly less able to cope with pathogenic organisms and toxins.

When the bioplasmine molecule reaches a certain degree of stability, the cell becomes eliminated either by the action of parasites or by the substitution of cells endowed more liberally with the essential metabolic molecule.

The supply of bioplasmine does not seem to be equally distributed among the various cells, the connective tissue cells seem to be most liberally endowed and the more highly differentiated cells appear to become deficient long before there is any marked diminution in the capabilities of the cells of the mesoderm. If we take the regenerative powers of the cell as a measure of the amount of bioplasmine with which it was originally endowed, we find a marked difference in the stage at which senility becomes evident in cells possessed of different functions. The nerve cells have been considered to have no power of reproduction after the time when they have taken on their special function, but it has recently been shown that even nervous cells have a power of regeneration during the earlier periods of the life of the animal.

The chemical properties of bioplasmine must be considered more or less unique. It seems under ordinary conditions to possess a certain stability, yet when the proper stimulus is applied it appears to part with one or more of its nutrescine molecules with great facility. Its action is different from most of those substances which cause chemical or physiologic combination by their presence in minute quantity, inasmuch as the N/ molecules do not undergo decomposition and recomposition as do bodies having the so-called catalytic action (such as the ferments), but they enter into direct combination with the nutritive bodies formed and are thus permanently lost with the cellular katabolisis. Bioplasmine is the one substance of the materials composing the cell which is not renewed during nutritive processes. It thus has a place apart from the cellular chemical changes which it influences indirectly by parting with its nutrescine molecules.

In order to arrive at some suggestive conclusion as to the nature and mode of action of this body whose existence I have assumed, I have further taken up the study of regeneration and reproduction on the basis of this theory, as these functions best mark, as already stated, the difference between the young and old cell. From this theory I have endeavored to formulate rules under which reproduction not only may occur, but to determine the conditions under which it necessarily must occur if these conditions are present in the cell and its surrounding medium. These rules may be presented in the following form:

In the young cell a certain stimulus arises from the surrounding medium for the production of N bodies, which production occurs in excess, a certain number combining to form preliminary substances which are to undergo further anabolic changes, finally to convert them into the proximate principles of the cell, the remainder being left free and uncombined within the cell. As the stimulus arises from the surrounding medium, the production of N/ bodies is most marked at the poles of the cell (which are most exposed to the medium). This overproduction soon reaches such a stage that the plasma elements can not enter the cell in sufficient amount to combine with the N bodies without an increase in the area presented by the cell to the surrounding medium. This increase is then accomplished by division of the cell, which is a necessity in order to adapt it to the changed conditions. Mitosis is favored by molecular tension resulting from the accumulation of N bodies at the poles of the cell, where the influence of the surrounding medium is most marked. This process is the basis of the chemical and vital forces of mitosis, with the physical evidences of which we already are familiar. The basis of mitosis thus is purely chemical and is determined by a stimulus derived from the plasma.

The action may not be wholly one of principles in solution in the plasma; certain cells, particularly the leucocytes, seem to have the power of exciting cell proliferation. The chemical basis of mitosis is represented graphically in Fig. 6.

The influences leading to cell regeneration are not wholly to be found in the plasma, but also depend on the number of cells among which the stimulus must be divided. The cell deficiency which occurs from traumatism is no doubt a potent influence in determining regeneration, but equal importance is to be ascribed to the effusion of lymph and to the presence of leucocytes which always collect in numbers where there is any considerable destruction of fixed cells.

It is possible that different chemical compounds act as stimuli in reproduction, on the one hand, and in regeneration, on the other. We can not consider, for example, the formation of scar tissue as the result simply of reproduction of the connective tissue cells; a special stimulus seems to be necessary to cause the connective tissue cells to form a scar. This stimulus may be derived from the mononuclear leucocytes also, as scar tissue forms in the infectious granulomata, in which the polymorphonuclear leucocytes are largely absent. There are doubtless many intermediary bodies capable of combining with the bioplasmine radicle, of which the leucocytic stimulant may be one.

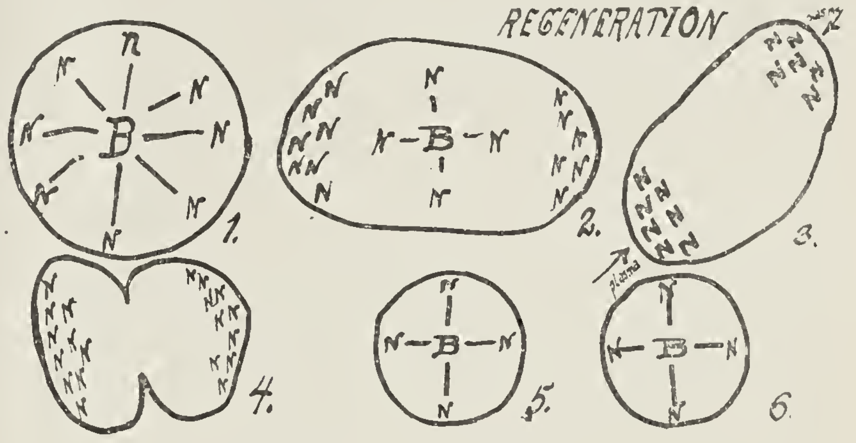


Fig. 6.—Regeneration.

The question of abnormal regeneration may be briefly touched on. Morbid proliferations play an important, if not essential, part in benign and malignant neoplasms. The bioplasmine molecule must be concerned in these processes, though not necessarily directly. The influence of the bioplasmine molecule may occur in one of two ways—either the bioplasmine molecule becomes disorganized and parts with a number of nutrescine molecules far in excess of the physiologic needs of the organism, or the same result is produced under the action of a pathologic stimulus derived from the plasma. In producing the fatal result we have both the directly injurious action of the morbid growth or growths and the exhaustion of the essential nutritive principle. It is the latter factor which is most active in producing the general organic nutritive deficiency spoken of as cachexia.

Regeneration and growth, both normal and pathologic, take their character from heredity, using the term in its largest significance, and the subject of heredity is itself capable of further analysis along these lines. The principle on which heredity depends can not be limited to the individual, family or race, but must be extended to species as well. That the properties of a cell should persist through several generations points to the conclusion that the persistence depends on persistent chemical and physical composition of the cell. Or using the term in the sense of qualities persisting in the descendant cells, heredity may be defined as the persistence of the chemical composition of a cell through several generations of descendants.

The problem becomes more complex when we deal with the higher organisms, because among these are specifically differentiated cells, possessed of varying properties and capabilities. While these properties and capabilities are derived from the ancestor, the problem is much complicated by the necessary inter-relations of the component cells forming the organism. Further, the individual functions and capabilities of the cell are more numerous. The character of the individual depends on his nutrition, the term nutrition signifying in general the chemical and physical composition of the cell in relation to its medium. In the persistence of the chemical cellular endowment in the ancestors we have the cause of the similarity of individuals forming the family, race or species.

Very generally stated, the characteristics of an individual depend on two factors: 1. The individual nutritive capabilities of the component cells. 2. The harmonious action of the various classes of cells. Since the nutrition of a cell is dependent on the bioplasmine molecule, this body must play an essential, if not the only, part in determining heredity.

Concerning the influence of bioplasmine in heredity, we have to consider in the individual the following factors:

As regards the individual cells: 1. The amount of bioplasmine with which the original cells are endowed. 2. The character of the bioplasmine molecule, particularly its facility of dissociation under appropriate stimuli; as regards the organism as a whole, the harmony or lack of harmony of nutritive energy between the variously differentiated cells.

The latter factor determines whether the resultant will be large or small.

Generally, we will look for a maximum resultant in certain functions and a minimum in others. We look for a certain similarity in the successive similar functions in the individual, and these similarities we can group under the head of characteristics.

It may be permissible to speculate on the practical results that might accrue from the isolation of a specific metabolic body from the cell. If, for instance, we could isolate and determine the properties of bioplasmine, we might consider that we had made a step toward the almost indefinite prolongation of life. The problem which would present itself would be the renewal of the tissue supply of bioplasmine whenever the original supply gave evidences of becoming exhausted. There are many difficulties in the way of renewing this material in the body, even if we had successfully isolated and manufactured it. It is probable that bioplasmine, as such, is not absorbed by the proliferating cell, but must be absorbed as the preliminary body which has been spoken of as bioplasminogen; moreover, it would not be reasonable to expect a matured cell to take up bioplasminogen if it could be injected into the blood of the organism, as it is probable, as already suggested, that the cell only possesses the function of absorbing bioplasminogen during a very early period of its embryonic life. The function may cease as early as the formation of the morula mass. It may be possible that we could extract from the embryonic cell some substance that would enable the matured cell to absorb bioplasminogen and to convert it to its uses.

I would consider, however, that the first advance to be made in prolonging life would be by the use of substances capable of stimulating the bioplasmine to yield a further quantity of its nutrescine molecules when this could no longer be accomplished by the physiologic stimulus. It is not likely that the bioplasmine molecule is ever so far reduced during life that there does not remain a considerable number of N/ molecules in combination.

It is to the physiologic chemist that we must turn for the elucidation of these and of most other obscure problems of the medicine of the future, and we can expect them to respond with the same enthusiasm with which they have already surmounted so many obstacles. A careful differential analysis of the juvenile and senile organs will well repay the time spent, though it may be yet too early to hope for the isolation of a body so unstable and present in such small amounts as the one we have described.

It is not too much to expect of the scientists of the future that they may enable our descendants of 1,000 or 5,000 years hence to realize or to surpass the years of Noah, which are said to have been over 900, or even of Methuselah, of whom Moses says in Genesis, "And all the days of Methuselah were nine hundred and sixty and nine years, and he died."

DISCUSSION.

Dr. Denslow Lewis, Chicago, referred to the time when he was a medical student at the University of Michigan, some twenty-eight years ago, and congratulated the profession and the public on the advances that have been made in medical teaching since that time. The production of such a paper was impossible then; our knowledge had not advanced sufficiently to enable us to make these researches. Dr. Lewis said that all should feel very thankful that physiologic chemistry has taken such strides of late. We can look forward confidently to the future, in the hope that these technical studies will result in vast practical benefit.

DESCRIPTION OF AN ADVANCEMENT SUTURE.

WITH COLLECTIVE SUGGESTIONS REGARDING OPERATIONS ON THE OCULAR MUSCLES.*

MARK D. STEVENSON, M.D.
AKRON, OHIO.

I am a firm believer in conservative surgery and advocate careful operative interference only in suitable cases after all other means, e. g., the use of proper lenses, prism exercises, or fusion training, have failed to accomplish the desired results, to wit: cosmetic straightening of the eyes, parallelism of the optic axes, fixation, establishment of binocular single vision, and in phorias, obtaining the normal balance. I do not intend to discuss the many excellent non-operative methods of treating or aiding these cases, but in this paper I presuppose that all of these have failed, and turn in proper cases to operative procedures as a last resort.

I think that an advancement, alone or combined with a tenotomy, is practically always to be preferred to a tenotomy alone. An external ocular muscle is seldom too strong, the rotation of an eye rarely exceeds the normal, but in squint and heterophoria, defective rotation in one or more directions is usually found in one or both eyes. Weak and *not* too strong muscles are usually to be dealt with and an operation that will strengthen a weak muscle so that it can properly functionate is required. If in one of these cases, a certain muscle exceeds the normal in strength and its opponent is normal, a tenotomy alone on the over strong muscle is, of course, good practice, providing the degree of squint or tendency to such, is not of too high a degree. All operations should be modified or elaborated, depending on the results of the tests of the relative powers of the muscles.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

If the defect to be overcome is slight, as in low degrees of squint or heterophoria, an advancement alone may be all that is necessary, but very frequently I think it advisable to tenotomize, partially or completely, the opposing muscle of the same eye. The degree of this tenotomy must vary according to the needs; when only low degrees of squint or tendencies to such are to be overcome, a slight partial tenotomy which I have recommended, only in these cases, may be done, just sufficient to weaken temporarily the strong opposing muscle. This may be accomplished with but slight or no change in the ultimate attachment of the tendon so that the rotating function of the tenotomized muscle will not be interfered with, or at most, but very slightly. If the tendon is not completely severed, Tenon's capsule not opened too freely, and the check ligaments not tampered with, the muscle cannot change its point of attachment much. It will be in a temporarily weakened condition, however, and will not strongly oppose the advanced muscle, which will in the meantime soon become attached. Thus both muscles will heal at the same time and the function of each will be temporarily and partially suspended due to traumatism.

If tenotomy is not performed at the same time as the advancement, there is a high degree of tension of the ocular muscles which tends to loosen the sutures and fresh tendinous attachments and to force the eyeball back into the orbit. The results immediately after the operation may be correct and satisfactory, but before healing takes place, some slipping of the suture is apt to occur, due to the constant tension of the strong opposing muscle, and the final result is sometimes more or less unsatisfactory. When the opposing muscle has been but slightly tenotomized, no such strain is brought to bear on the suture, and the result, after the operation, is much more likely to be a permanent one. If it is necessary to overcorrect in advancement operations, as many authorities state, it simply demonstrates that the suture used or the attachment of the tendon slips; that the operation is not scientific, especially since it would not be possible to know the amount of probable slipping, and hence of overcorrection necessary. If the suture that will shortly be described is properly made, it will not be necessary to overcorrect and the first effect will be final. Under cocain anesthesia the immediate effect should be permanent and correct. Of course good results largely depend on the good judgment of the operator, as these operations cannot be reduced to mathematical accuracy.

Among other tests I always examine the field of rotation of each eye by Stevens' tropometer in order to determine the relative strength of the muscles. I sometimes find that the total or chief weakness in the muscles of the fixing eye, and if, in such cases, the vision of the squinting eye is good and especially if there is hope of binocular vision, I operate on the muscles of the fixing eye.

The suture material should be black braided silk, about No. 8 in size, which has been boiled, dried and then soaked in a warm sterile ointment composed of equal parts of white vaselin and white wax and 0.25 per cent. carbolic acid. After removal from this ointment the suture is stiff and slips readily. The needles should be sharpened and examined with the same care as cataract knives and always kept in a dry place. Except when in use they should be handled only by forceps, never with the fingers, which might cause them to corrode. It is well before the operation to examine the needles under a strong magnifying lens such as a powerful loupe or a +20 D.S. lens, for often the ends will be found bent or forked, which would prevent the needle from passing readily.

My advancement operation is a modified Worth's, the method of suturing, the most important part, being the only essential difference. It is usually done under local anesthesia, except in very small children and exceptionally nervous people. I have performed this operation on children 7 and 8 years old under local anesthesia. If it is to be done on one of the lateral muscles, for example, a long ½ inch curved incision is made vertically through the conjunctiva, the center nearly touching the cornea, the ends curving away from it. Tenon's capsule is next opened, but not so freely as the conjunctiva, the conjunctiva and capsule are pushed well back, the muscle, capsule and conjunctiva are clamped together by advancement forceps, the toothed blade being superficial to the conjunctiva, then the tendon is cut free from the sclera. However, it is easier sometimes to cut the tendon on a strabismus hook, as afterward it can always be seized and held by fixation forceps while the advancement forceps are being adjusted. It is frequently advisable to change the relative position of the conjunctiva, capsule and tendon in the grip of the advancement forceps, pushing the conjunctiva and capsule farther back on the tendon or vice versa. In paralytic and some other cases, it is best to clamp the conjunctiva, capsule and muscle together without changing their relative positions. I have never found any difficulty in recovering possession of the tendon in case it slipped from the advancement forceps. One of two sharp needles on a prepared suture, is next passed from without inward through the conjunctiva, capsule and junction of the upper and middle thirds of the tendon or muscle. The same needle is then passed outward through the upper margin of the tendon or muscle, through the capsule and conjunctiva, then back through all three just behind the first point of entrance, forming a complete loop. It is then carried subconjunctivally almost to the edge of the cornea and stitched deeply through the episcleral tissue into the sclera. The needle on the other end of the suture is similarly used, making a loop on the lower portion of the tendon, capsule and conjunctiva and also making an episcleral and scleral anchorage near the cornea and close to the other suture, then the two sutures are tied in the first part of a surgeon's knot. Sometimes it is sufficient to pass only one needle through the episcleral and scleral tissue, tying the sutures as before. All superfluous tissue should be removed—only sufficient being left to hold the sutures and close the gap when the sutures are tied. If thought advisable, next perform the proper degree of tenotomy on the opposing muscle of the same eye. The patient is then requested to look steadily at some small distant object and the hand is passed alternately before each eye while the suture is tightened until the eyes cease to move, when the desired rotative effect is secured and the knot is completed. Under general anesthesia only an approximate correction can be expected. In such cases it is often preferable to tie the suture under local anesthesia after the patient has recovered consciousness and the cover test can be used. It is never necessary to suture the conjunctiva on the side of the advancement, but it is sometimes best to do so over the tenotomized muscle.

By this suture, the upper and lower portions of the tendon or muscle are securely held in separate loops, but not strangled, while the circulation in the middle portion is not interrupted although it is also supported by the cross piece of the suture. The more tension put on this suture, the more securely it will grasp the tendon or muscle. Only one knot is necessary, whereas four are required in Worth's operation. Furthermore, the suture can adjust itself as in the pulley operation and cartwheel motion can be influenced by the location of the anchorage into the sclera. It is simple, easier and takes less time to make than most other sutures, and it holds.

I believe that it will hold, not only in the tendon but also in the muscular tissue, especially when fortified by passing it through the conjunctiva and capsule as described. Different authorities estimate the tendon of the external rectus to be about 3.7 mm. long. I have repeatedly placed the suture farther from the insertion of the tendon than its estimated length, hence in the muscular tissue, with perfect results. If Tenon's capsule is pushed well back on the muscle or tendon, it can afford considerable support to the suture and, because of its great elasticity, it will not limit, ultimately, the rotation of the eye to the opposite side. Furthermore, a careful study of the Y shape of the muscle, tendon and check ligament will make clear why an advancement will increase rotation, and not diminish it as a tenotomy does, and also why advancement of the capsule forward will not tend to limit the rotation of the eye to the opposite side. I have frequently tested the field of rotation in eyes thus operated on and found it to be as large or even larger than before the operation was performed. The only possible objection to this suture that I can think of, is that in case any portion of its mooring should slip, it would affect the whole suture. However, this accident has never occurred in my practice.

I soon learned that the greater part of the pain in an advancement is caused by the manipulation of the forceps during the insertion of the sutures. Advancement forceps have usually had their blades at an obtuse angle to the handle and this makes it difficult for the operator to tell how the end of the instrument is placed. He is inclined to move the handle in the middle line, thus strongly pulling one side of the muscle or tendon. The long heavy handle on most forceps, when not supported, also acts as a lever, the eyeball or lids serving as a fulcrum, and pulls themuscle, causing pain. My forceps are curved on the flat so that the end of the handle is always supported by the nose or temple, while the middle portion does not rest on the eyeball or lids. The blades are at right angles to the handle, therefore the forceps are easy to manipulate, causing much less pain than the others with which I am familiar.

Cold applications should be made at regular intervals the first day. A monocular bandage with gauze pad is required for about seven days, the eye being irrigated with some mild antiseptic and dressed each day. In the eye not operated on a drop of 1 per cent. atropin sulphate solution should be instilled and it should be covered with a shade for 24 or 48 hours which may be raised when necessary. The sutures are removed at the end of one week. The patient should be cautioned to look straight forward, turning the body and head instead of the eyes for the first few days. If lenses are to be worn, pieces of adhesive plaster may be placed on them so that a narrow vertical clear space may be left through which the patient can see except when the eyes move laterally. He had best remain in a semi-dark room for the first two days and not use the eyes for at least one week.

After the above consideration of this important subject, I decided to address a circular letter to ophthalmic surgeons throughout the United States in order to have their views regarding some of the difficult questions in ocular muscle operations. I wished to learn regarding only those cases where non-operative treatment had failed or was impracticable, fully realizing its importance in the majority of cases.

That this branch of ophthalmic science is not thoroughly understood is clearly demonstrated by the wide diversity of opinions among leading ophthalmologists, and while in some phases of this interesting subject no uniformity of opinions can be found, yet regarding others, it is possible to arrive at certain deductions. Unfortunately I neglected to place the name of the opthalmologists addressed on the question sheet, therefore I am unable to state the authority for many excellent answers, owing to the failure of the writers to sign their answers.

In what percentage of your ocular muscle operations do you prefer an advancement alone and in which cases?

In over eighty replies to this question but twenty seven stated percentages, the average of which was about 15 per cent. As to the cases in which advancement alone is preferred, many replies were received. Several excellent observers advocate its use in low degrees of exotropia and in exophoric cases, the general censensus of opinion being that it is of the greatest benefit in only a low degree of squint or in a tendency to the same. Some state that it is efficient when a simple tenotomy will not correct or has failed to do so or in case of previous overcorrection. Gifford of Omaha states that it should be used in divergent squint where binocular vision may be expected. Todd of Minneapolis advises its use in a large percentage of phorias and in some alternating tropias. Savage says he uses it only rarely and in cases where the stronger muscle is not intrinsically too strong. Among those who seldom, or never do an advancement alone, are Knapp, Thorington, Hubbell, Ellet, Bradfield, Lapsley, King, Roy, Melville Black, Lukens, Minor, Theobald, Snyder, Foster and Woods.

Do you think that a suture will hold in the muscular tissue or only when placed in, through, or against the tendon?

Reber, Posey, Ziegler, Greenwood, Melville Black, Carrow, Hills, and a few others state that a well placed suture should hold in the muscular tissue. Other observers think that it would conditionally. Among those who have the opinion that the suture would not hold in the muscular tissue, but only in the tendon, are Woods, Weeks, Rogers, Veasey, Wescott, Thorington, King, Vail and Holt. Many include either the capsule or conjunctiva or both, as Holmes, Risley, Knapp, Savage, Würdemann, Dodd and Gifford. Culver and Eaton believe it is best against the tendon. Todd and Howe state that there must be a loop, knot or ligation of the muscle or tendon in order that a suture may hold. I think there may be some slipping of the sutures where the capsule and conjunctiva are not included. It is well to remember that the tendon of the external rectus e. g. is but 3.7 mm. long, and since the sutures are often placed farther from the insertion of the tendon than its whole length, they must be in the muscular tissue.

Do you pass your suture through Tenon's capsule to get additional hold and, if the capsule has first been well pushed back on the tendon, do you think it subsequently affects the rotation of the eye to the opposite side?

Eighty-five per cent. of the replies state that the capsule of Tenon and conjunctiva are included with the muscle or tendon in the suture. Tenon's capsule and the conjunctiva are not included in the suture by 6 per cent. of those who answered. Eighty per cent. of these replies indicate that if the capsule is pushed well back on the tendon before introducing the suture, the rotation in the opposite direction will not be affected. Fifteen per cent. express a belief that the rotation will be affected. About 10 per cent. of the observers seem to think that the capsule should not be pushed back on the tendon.

Do you anchor the suture deeply in the sclera? Have any serious complications been caused by so doing? To what do you attribute it if the suture in the sclera gives way?

Sixty per cent. of the ophthalmic surgeons who replied pass the suture deeply in the sclera. About 15 per cent. pass the suture only superficially through the sclera, or even in only the episcleral tissue. Among the former are Reber, Nance, Connor, Culver, Savage, Holmes, Knapp, Greenwood, Donovan, Weeks, Melville Black, Stricker, Ellet, Gifford, Wescott, Vail, Dean and Würdemann. For every man who believes that deep sutures in the sclera cause serious complications, fifteen think they do not. Several did not answer this part of the question. The great majority of observers think that if the suture in the sclera gives way it is because of its not being placed deeply enough in the sclera or in not including enough of it. Suppuration, too small or too large a thread or needle, too much cutting by the needle, careless tying of the suture, too high tension and insufficient strength of the tissues are also mentioned as explanations.

In advancement do you believe in overcorrecting at the time of the operation? a. If a tenotomy has been performed on the opposing muscle of the same eye? b. If such tenotomy has not been performed? What tests, if any, do you make at the time of the operation to learn when the desired amount of effect is obtained?

About 50 per cent. of the observers believe in overcorrecting at the time of the operation; about 30 per cent. do not; the remaining 20 per cent. are conditional. Some would overcorrect in divergence, but not in convergence, particularly if the convergence be in children. About 60 per cent. consider overcorrecting unnecessary if a tenontomy of the opposing muscle has been performed; about 20 per cent. believe in overcorrection in case the opposing muscle has been tenotomized. Among those who believe that overcorrection is necessary if tenotomy has not been performed, and who usually think it is unnecessary to overcorrect if tenotomy has been performed, are Würdemann, Greenwood, Donovan, Weeks, Eaton, Callan, Griffin, Seabrook, Roy and Ayres.

In approximately what percentage of cases of advancement do you tenotomize the opposing muscle of the same eye, making a combined operation? Name your chief reasons for so doing.

Although some strongly advise against tenotomizing the opposing muscle of the same eye together with advancement, a much larger proportion prefer the combined operation, the average percentage being about 76. It is especially advised in cases where the eye is amblyopic and where there is squint of 15 degrees or more. It is said to increase the effect and to relieve the tension on the suture, so that it will not cut through so readily, and the final result will be more nearly like that at the time of the operation. Savage says the stronger muscle needs weakening and the weaker needs strengthening, especially in internal and external squint, and that he never cuts a tendon entirely across. Some of those who advise the combined operations under different conditions are Risley, Connor, Posey, Savage, Baker of Cleveland, Culver, Todd, Ziegler, Würdemann, Woods, Greenwood, Holmes, Weeks, Theobald, Eaton, Melville Black, Stuever, Veasey, Callan, Bradfield, Griffin, Seabrook, Hulen, White, Ellet, Wescott, Crane, Martin, Hubbell, Holt, King, Roy, Lukens, Hale, Starkey and Thorington.

In what percentage do you perform tenotomy alone and in which cases?

The average of the answers gives approximately 38 per cent. A very large number advise tenotomy in cases of heterophoria, especially hyperphoria and esophoria, and in low degrees of heterotropia. Some never perform tenotomy, others do it in all cases. Several stated that if the deviation does not exceed 15 degrees, they do tenotomy alone. Several limit it to the above-mentioned cases, where the vision is good with the two eyes; some to cases where there is no hope of binocular vision, and a few where the squinting eye is amblyopic. Weeks prefers tenotomy in squint of low degree where the opposing muscle is of normal power. Ellet uses it in some cases in children where it seems nature, if helped, will cure. Savage recommends it in a very large percentage of heterophorias. De Schweinitz writes that he is more and more convinced that tenotomies are likely to be followed by excessive effects in after years, and that he inclines more to advancements in the place of tenotomies. Stevens and Risley call attention to the fact that the vertically acting muscles are sometimes at fault, when the defect is apparently in the lateral muscles.

What means, if any, do you employ to prevent sinking of the caruncle?

A majority of the answers showed that nothing was done to prevent sinking of the caruncle; several advise free dissection of the conjunctiva from the underlying tissues out under the caruncle and particularly recommend the avoidance of too free incision of the capsule, and also warn against any or too much interference with the check ligaments. Some recommend that the opening in Tenon's capsule and the conjunctiva be very small; others that the opening in the conjunctiva be large, but that it is subsequently sutured. Holt considers it important that the dissection be carried up under the caruncle in order to cut any fibers of muscle going to it.

Do you think a partial tenotomy has any appreciable permanent effect?

Seventy-five per cent. of the answers to this question are negative. Some have not tried the operation, many others believe the effect is but slight. Among those who answer in the affirmative are Savage, Connor, Ziegler, Weeks, Howe, Griffin, Minor, White and Holt. Several, especially Würdemann, Holmes, Risley, Baker of Michigan, Bradfield, Foster, Eaton, Martin, Porter of Chicago, Carrow, Crane and Grove are very emphatic in opposing it, particularly in so-called true graduated tenotomy.

If any effect is obtained by a partial tenotomy, is it to be ascribed to interference with the check ligaments, stretching or to what?

Connor and Weeks attribute it to weakening of the muscle, Greenwood to a lessened action of the muscle fibers that have been cut, Ziegler to the elongation of the tendinous attachment, Holt to the setting back of the central fibers of the tendon, Ayres to stretching. With a very little experience, I do not believe that a slight graduated tenotomy, where only the central portion of the tendon is cut, has any permanent effect, as I have repeatedly found that even the slightest strands in the peripheral portion of the tendon, or even posterior to the insertion of the tendon, often prevent the eyeball from changing its position in regard to the muscle, before the reattachment of the tendon. Cicatrization plays an important part in the final effect, no doubt making the condition worse, although at first it may have been better. I think that if an effect is obtained it is probably due to stretching of the muscle or tendon, as may be done by a strabismus hook, the complete severance of the tendon, or interference with the check ligaments. Of course, the latter two should not be described as a partial tenotomy.

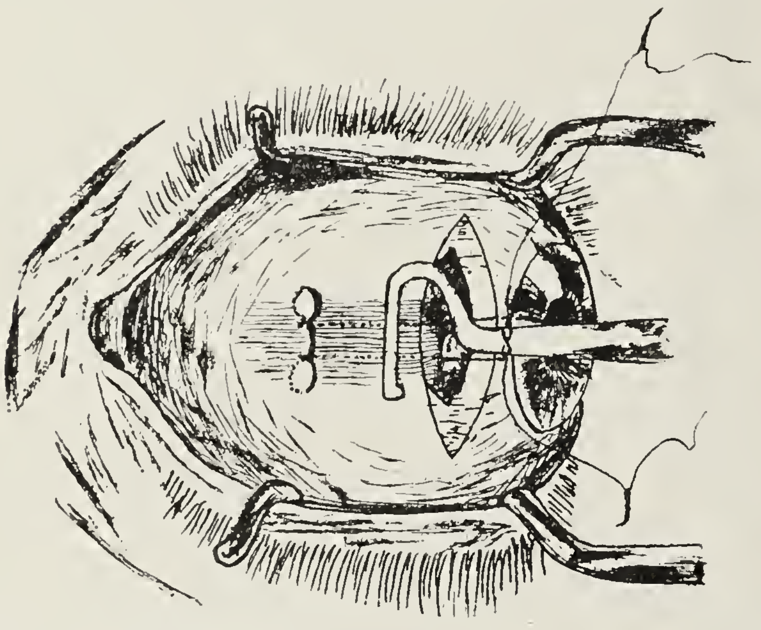

Fig. 1.—Opening in conjunctiva and capsule and position of advancement forceps, suture and knot.

Do you always operate on the squinting eye or are you guided by the degree of rotation of each eye, e. g., as measured by Stevens' tropometer?

A large majority operate only on the squinting eye. Todd, Ziegler, Weeks, Eaton and Hills depend largely on the degree of rotation of each eye. Several always operate on the squinting eye first, especially if it is amblyopic, and later on the other, if necessary.

In approximately what percentage of all your cases do you operate on the fixing eye only? a. If on both eyes separately, why? b. If on both eyes at the same time, why?

The replies show that only a small number operate on the fixing eye alone. Many operate on each eye separately to obtain the desired result, and are guided in the second operation by a knowledge gained of the patient by the first. But very few ever operate on both eyes at the same time, and then only in case the squint is of high degree, or where one eye is very amblyopic, as they fear overcorrection or accident. If the vision in the squinting eye is good and defective rotation is chiefly or wholly found in the fixing eye, and particularly, if binocular single vision is hoped for, I think that the operation should preferably be performed on the fixing eye.

Do you operate when the muscles are paretic or paralytic? What are your indications, choice of operation and results?

Nearly all answer the first part of this question in the affirmative, usually advising advancement combined with tenotomy of opposing muscle of the same eye. Some advised advancement alone. The majority claim good results, especially from a cosmetic standpoint, and several stated that the patient was relieved from the annoyance of turning the head to such a large degree. Many, among whom are Reber, Gifford, Griffin, Ball of Pennsylvania, and Hubbell, advise operative procedures where other means have failed to relieve in one or two years. Stricker of Cincinnati claims excellent results from the use of prisms. He also suggests that as other muscles may subsequently be involved, the cosmetic effect following operation may come to naught. As before stated, I think it advisable, in these cases, to pass the sutures through the muscle or tendon and also through the capsule of Tenon and conjunctiva, without changing their relation to each other.

If the wearing of proper lenses or exercises have corrected the squint and made an apparent cure, is it well ever to operate in an attempt to obtain a better result so that the eyes may be parallel without lenses?

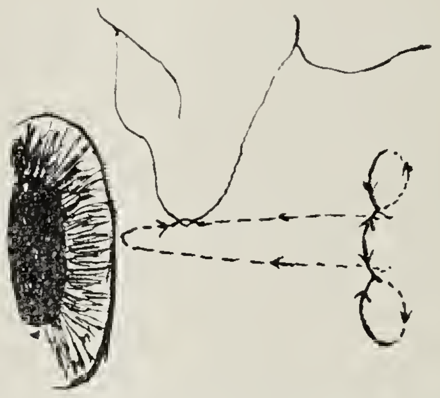

Fig. 2.—Method of inserting suture and location of knot if there is only one point of anchorage in the sclera.

Practically all answer this negatively. Some would operate for the remaining heterophoria present, especially if it is in high degree. Weeks operates where prisms are required, otherwise not.

What do you consider the best age for operation if a child from two to five years old develops squint and the proper lenses (if any are required) and exercises do not correct it? a. If a child has squinted since birth or within a few months of birth—so-called congenital strabismus? Is it a good plan in such cases to make an early approximate correction under general anesthesia?

Among those who consider operation advisable at as early a time as it is found that other means will fail are Holmes, Nance, Savage, Ziegler, Dean, King, Donovan, Dodd, Melville Black, Veasey, Bradfield, Seabrook, Carroll, Hills and Theobald. About 20 per cent. of the observers, among whom are Rogers, Hale, Roy, Baker, Culver, Snyder and Ellet, choose from 5 to 6 years as the best age for operation where good results may be expected. About another 20 per cent. prefer from 7 to 8 years. About 30 per cent. think from 10 to 12 years the best time. Knapp, Hood, Hill and Crane operate as early as the second and third years. A majority of the answers indicates that if the child has squinted since birth, or within a few months from that time, operation should be performed earlier than if the squint had developed later. Others advise waiting until various ages. A large majority of answers show that many do not believe in an approximate correction under general anesthesia, while some claim good results from this in certain cases, especially those of high degree, where other means have absolutely failed. When all means have failed, if the vision and field of rotation are good in each eye, especially if it is possible to develop fusion tendency by the amblyoscope, I think it advisable to obtain an early approximate correction under general anesthesia in order to assist the other factors in producing parallelism of the optic axes. It is well to be very careful not to overcorrect in cases of convergent squint.

In what percentage of your operative strabismic cases is binocular single vision obtained—extreme age limit, if any?

The percentages of success in obtaining binocular single vision vary greatly. Some claim to obtain it in scarcely any, others in a very large proportion of cases. The answers, as a whole, indicate that binocular single vision is often obtained. Several give an age limit from 8 to 10 to 15 years or older. Some cite instances where binocular single vision was obtained in adult life. Greenwood cites the case of a patient 20 years old; Würdemann one of 25; Wells one of 25; Hulen one of 39; Snyder one of 45, and Vail one of 50, each of whom recovered his binocular vision power. Several express the opinion that there is no age limit in these cases, and that binocular single vision might be obtained at any age. Many claimed that their recent increase of successes is the result of experience and the employment of better methods.

In what percentage of your cases do you use a general anesthetic?

A majority prefer the use of local anesthetics, except when advancements are to be performed on small or uncontrollable children or very nervous adults. Several use local anesthesia only when the child's age exceeds 6 to 8 years, as Weeks, Carrow and White. Others choose from 10 to 13 years as the usual age after which it is wise to use local anesthesia. Several never use general anesthetics for tenotomies, but always for advancements.

DISCUSSION.

DR. G. C. SAVAGE, Nashville, said that in treating simple heterophoria the only object is to equalize the tonicity of opposing muscles. In heterophoria of the recti, with cyclophoria, there are two objects in view in the operation; first, to equalize the tonicity of the muscles; second, to change the plane of the muscle. In orthophoria there is absolute rest of the muscles and basal centers, in distant vision, for the tonicity of the muscles is equal. In distant vision these eyes would cross except for the basal centers connected with the externi, and these are the right and left fourth basal centers. Whether the surgeon operates in one way or another, the object must be to equalize the tonicity, and to relieve basal centers. The tonicity may be altered by partial tenotomy, advancement, or shortening. By partial tenotomy of the stronger muscle its tonicity is diminished. By reducing the tonicity of this muscle Dr. Savage has put the fourth basal center at rest. If instead of tenotomizing the internus, it is decided to shorten the externus, its tonicity is thereby increased, making it equal to the stronger one, and thus relieving the fourth basal center. Complete tenotomy, however, should never be done. The LaGlieze operation is far beyond any other advancement operation that has thus far been devised. It is done without severing the tendon, the muscle being made to overlap its original site of attachment. If the knot should become untied the last state of the patient is not worse than the first. It is, too, an easy operation to perform.

DR. WILLIAM C. POSEY, Philadelphia, referred to De Wecker capsular advancement operation as particularly applicable to cases in which there is a divergence of not more than ten degrees. This operation causes not so much reaction as that which follows the advancement of the muscle itself, no such disfigurement and no limitation of rotation of the eye. He has employed it repeatedly, and believes that it is one of the best procedures for the correction of muscular anomalies. He thinks that the single stitch advancement operation, while technically most admirable, is not always to be depended on, as the muscle which demands advancement is so often thin and its tissues delicate, and he invariably employs the double stitch operation.

DR. JOHN E. WEEKS, New York, protested against the use of a stitch that contracts tendon and muscle and bunches them up into a cord; the single stitch does this. When the tendon and muscle are doubled up the reattachment is not a proper one; it takes place at a few points only, at and near the middle of the original insertion. The subsequent contraction of the muscle can not influence the movement of the eyeball as it should. One should select an operation that will spread the muscle out and permit of a broad linear reattachment.

DR. J. A. L. BRADFIELD, La Crosse, Wis., said that in cases of internal squint combined with hypertrophia, operation on the superior or inferior recti usually is of more importance than operation on the internal and external recti muscles.

DR. MARK D. STEVENSON said that the chief objection to the tucking operation advocated by Dr. Savage, lies in the unsightliness of the eye for a long time after the operation. These patients, often operated on for cosmetic purposes, are particularly sensitive just after an operation and do not like the lumpy appearance of the bunched muscle. There is no danger in cutting away the superfluous muscle tissue, which otherwise would take a long time to disappear, as at least an approximately good result may always be obtained. When the capsule and conjunctiva are included with the muscle in the loops of the suture, there can not possibly be much bunching of the muscle. This can be regulated somewhat by the distance between the two points of anchorage in the sclera. If the suture is left in one week, there is formed a broad, strong attachment of the muscle which need never occasion any fear of its slipping. Good scleral anchorage of the suture can nearly always be obtained, but the great difficulty has been to find a suture that would securely hold the tendon or muscle in place until it became reattached to the globe. Sutures that do not have a loop so as to securely grasp the muscle are very liable to cut their way between the fibers. Since there is no means of knowing how much the suture migh slip in such cases, it is impossible to know how much to over correct.

THE VALUE OF VARIOUS FORMS OF HEMOGLOBINOMETERS TO THE GENERAL PRACTITIONER[*]

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AND
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PHILADELPHIA.

We have undertaken this study because the general practitioner as a rule looks on hemoglobin instruments in general as a sort of medical toy, to be used largely by the consultant, and because we believe that the use of these instruments is practicable and that it does not take more time, nor nearly as much time with some forms, as is wasted over every patient by each of us.

In 1899 one of us read a paper before the Pennsylvania Medical Society in which the following points were noted:

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[*] Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. The necessity of blood instruments becoming part of the equipment of every practitioner.
2. The value of various blood examinations as pointing out the true diagnosis and treatment in many cases.
3. The fact that blood examinations done in a routine manner do not take more time than is constantly wasted in gossip with each patient.

We believe these points were well taken and that they are daily becoming better recognized. In order that we may have certain grounds for the choice of the particular instrument to be used we undertook the study of the Fleischel, the Dare and the Tallquist hemoglobin scale. The Oliver was not studied because the three instruments named above are the most widely used in this country and seem to be all-sufficient. The descriptions of each instrument and directions for their use can be found in all of the text-books on blood technic, and the reader is referred to them for information.

Comparison of Estimates by Different Instruments.

Case.	Examiner.	Fleischel.	Dare.	Tallquist.	Gowers.
1.—	M.	88	82	80	85
	F.	80	84	80	80
2.—	M.	80	76	80	80
	F.	82	76	80	82
	C.	76	74	80	80
3.—	M.	82	84	80	84
	F.	88	82	80	84
4.—	M.	84	86	85	80
	F.	88	86	85	88
5.—	M.	76	72	75	75
	F.	70	72	70	75
	H.	80	74	70	78
6.—	M.	40	42	50	..
	R.	40	42	50	..
7.—	M.	90	90	60	..
	F.	88	85	70	..
8.—	M.	87	90	90	..
	H.	86	88	85	..
9.—	M.	92	94	95	..
	L.	84	85	86	..
10.—	M.	82	75	80	..
	L.	86	80	80	..
11.—	M.	42	60	50	..
	L.	45	60	45	..
12.—	M.	65	65	65	..
	R.	65	65	65	..
13.—	M.	72	76	75	..
	R.	74	78	75	..
14.—	M.	84	85	85	..
	R.	83	86	85	..
15.—	M.	86	88	85	..
	R.	85	88	85	..
16.—	M.	72	74	75	..
	F.	72	75	75	..
	S.	76	80	75	..
17.—	M.	72	74	75	..
	F.	72	75	75	..
	S.	76	80	80	..
18.—	M.	82	86	80	..
	F.	80	83	80	..
	S.	82	84	80	..
19.—	M.	76	78	80	..
	L.	74	78	80	..
20.—	M.	52	58	60	..
	L.	58	56	60	..
21.—	M.	78	76	80	..
	L.	76	76	80	..
22.—	M.	77	73	75	..
	L.	72	75	70	..
23.—	M.	70	74	70	..
	L.	73	76	75	..
24.—	M.	65	63	60	..
	L.	67	65	65	..
25.—	M.	40	38	40	..
	B.	38	38	40	..
26.—	M.	76	80	80	..
	L.	80	82	80	..
27.—	M.	78	86	80	..
	L.	80	84	80	..
28.—	M.	90	90	90	..
	F.	88	92	90	..
	H.	84	93	..	..
29.—	M.	80	80	80	..
	F.	82	84	75	..
30.—	M.	82	88	85	85
	F.	80	84	85	85
31.—	M.	64	68	65	65
	F.	66	68	65	68
	L.	62	66	65	65
32.—	M.	80	82	85	75
	L.	78	84	85	75
33.—	M.	72	73	75	74
	F.	78	74	75	74
	L.	70	72	75	78
34.—	M.	80	80	85	82
	F.	84	82	85	84
	S.	88	81	85	84
35.—	M.	88	86	85	85
	F.	92	86	85	86
	S.	96	86	85	86
36.—	M.	54	52	50	..
	R.	56	50	50	..
	L.	50	52	50	..
37.—	M.	62	58	60	..
	L.	60	58	60	..
38.—	M.	72	79	70	..
	L.	74	79	70	..
39.—	M.	80	75	80	..
	H.	86	84	80	..
40.—	M.	80	83	80	..
	H.	82	85	80	..
41.—	M.	50	52	50	..
	H.	55	54	50	..
42.—	M.	65	60	65	..
	H.	65	64	65	..
43.—	M.	86	85	85	87
	F.	82	85	85	87
44.—	M.	78	75	75	78
	F.	78	74	75	76
45.—	M.	83	84	85	84
	F.	79	84	80	86
46.—	M.	79	78	75	78
	F.	72	76	75	74
	S.	75	78	75	76
47.—	M.	88	86	85	86
	S.	82	86	85	84
48.—	M.	84	82	85	85
	S.	80	82	85	84
49.—	M.	86	80	85	82
	F.	82	84	85	82
50.—	M.	73	72	65	60
	F.	73	70	65	65
	F.	73	68	65	64

The studies were made mostly in the wards of St. Timothy's Hospital, Roxborough, Philadelphia. Fifty cases were studied with each instrument. Each case was studied at the same time with separate instruments. Recognizing that the personal element could play a part in the reading of any one of the instruments, because a given individual might more readily use one instrument than another, the observations were always made simultaneously by at least two individuals and frequently by three, and the results compared. Dr. Marcellus was used as the basis of comparison in all the cases and his observations are found in each estimate.

In the Tallquist readings the percentage is frequently estimated at 85, that is, between 80 and 90; or 75, between 70 and 80.

In order that an individual might not be prejudiced in the use of any given instrument, the reading was done in the following manner: First the blood was examined by the Fleischel, the scale being covered. Then the Dare instrument was used and the scale was not consulted. Finally, the Tallquist was used. This was done because the scale of the Tallquist is always before the observer. If a known percentage is present, one is very apt to deceive himself in the use of an instrument afterward in the same case. The reading of each instrument was then noted and the results compared.

Differences in the Reading of the Different Instruments When Used by a Single Individual.

Fleischel and Dare: 6 4 2 2 4 2 0 3 2 7 18
0 4 1 2 2 2=61 ....Average 3.3
Fleischel and Tallquist: 8 0 2 1 1 10 30 3 3
2 8 0 3 0 1 3 3=69.
Dare and Tallquist: 2 4 4 1 3 8 30 0 1 5
10 0 1 1 3 1 1=75.
Dare and Gower: 3 6 0 6 3 3 3 7 1 2 1 2
3 0 0 2=40.
Fleischel and Dare: 4 2 6 2 4 4 2 2 4 12 0
0 6 4 2 1 0 2 2=65.
Fleischel and Tallquist: 2 6 8 2 2 0 5 0 4 2
0 0 3 1 5 3 5 4=55................Average dif., 3.1
Dare and Tallquist. 2 2 2 2 4 3 2 0 6 0 0
3 3 3 2 5 1=46.
Dare and Gower: 5 2 8=15 ....Average dif., 3.4
Fleischel and Dare: 4 7 5 3 2 5 1 3 1 1 2
2 6 1=39.
Fleischel and Tallquist: 2 2 0 0 0 0 1 3 2 4
3 1 1 8=27.
Dare and Tallquist: 2 9 3 3 2 5 0 0 1 3 1
3 5 7=44. ....Average dif., 3.3

In the fifty observations made by a single individual the variations seem to be very slight, indeed. If the reading is done with the Fleischel and Dare, the average difference in fifty cases was 3.3 per cent., with Fleischel and Tallquist 3.2 per cent., with Dare and Tallquist 3.3 per cent.

Personal Differences in Readings of Gower, Dare, Fleischel and Tallquist (Marcellus as Standard).

Tallquist: 5 0 0 0 0 5 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 5 0 0 0 0 0 0
0 0 0 0 0 0 0 5 5=0.5.
Fleischel: 8 4 4 8 6 4 0 2 8 1 12 4 0 0
2 2 1 0 4 0 4 0 2 2 6 2 5 3 6 4
4 0 0 2 2 4 2 2 2 2 2 2 2 6 2 4
8 4 8 2 4 2 2 6 2 5 3 4 0 4 7 4
Dif. 2,9 per cent.
Dare: 2 2 2 0 2 0 5 2 1 15 0 0 2 2 0 1
2 2 2 6 1 6 1 3 2 0 2 0 2 2 2 0
2 2 2 4 4 2 0 2 2 1 1 1 2 2 0 0
0 0 1 2 2 4 4 0 1 0 2 0 0 0 2...
1.85 per cent.

The personal differences in the use of the different instruments is also seen to be extremely slight. With the Dare the difference was 1.85 per cent, with the Fleischel 2.9 per cent., with the Tallquist 1 per cent. It is fair to state that the Tallquist shows a less percentage of personal differences, because there is no opportunity to judge of less than 5 per cent. difference. The greatest personal differences were with Dare, 15 per cent.; with Tallquist, 10 per cent.; with Fleischel, 8 per cent. The readings of the Tallquist scale were the same in 78 per cent. of the cases, in Fleischel 0.5 per cent., in the Dare 22 per cent. It will therefore be seen that the readings by different individuals is least likely to be just the same with the Fleischel instrument, but, as shown above, the differences are so slight that this is not a fault which interferes with the practical use of the instrument.

It will, therefore, be seen that, so far as practical purposes are, any one of the three instruments is sufficient.

The Dare and the Fleischel allow of more accurate fractional reading because of the arrangement of the scale. All of the scales are accurate.

It appears to us that the advantages of the various instruments may be fairly stated as follows: Of the Tallquist scale, first, the cost is much less, $1.50; secondly, the bulk is less, it may be carried in the inside coat pocket at all times without inconvenience.

The first advantage of the Dare and of the Fleischel is that both can be used either by day or night. The Dare is less bulky than the Fleischel and does not need a particularly darkened room for its use.

The greatest disadvantage of the Tallquist is that one is forced to use it in daylight. The second disadvantage is that an accurate observation can not be made between the multiples of ten, and one therefore feels less sure of the result. The disadvantages of both the Dare and Fleischel are, first, the cost (about $20), and, second, the bulk, though the Dare is less bulky than the Fleischel. In conclusion, we may say:

1. Any one of the instruments studied by us is sufficiently accurate for practical purposes.
2. No practitioner should neglect to use one of these instruments. The Tallquist scale is cheap and convenient.
3. The Tallquist scale can be used for routine observations, and either of the other instruments for detailed and more accurate work.
4. The Dare instrument is just as accurate as the Fleischel, and takes much less time to manipulate.
5. For the general practitioner, the value of these instruments may be fairly arranged as Tallquist, Dare and Fleischel.

A STUDY OF THE METABOLISM OF ATROPHIC INFANTS AND CHILDREN.*

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METABOLISM OBSERVATIONS ON INFANTS.

Infant's and children's metabolism has not been thoroughly investigated. The importance of such work has long been recognized, but the difficulties have appeared to be almost insurmountable. Hauser[1] reviewed the work which had been done on this subject up to 1900. In this summary, he called attention to numerous errors in the work and to the incompleteness and inaccuracy of many of the results. Metabolism investigations have little or no value unless continued uninterruptedly for several days. It is essential that the diet should remain unchanged and that the feces and urine should be completely segregated and the entire quantity of each collected during this period.

SOURCES OF ERROR, AVOIDABLE AND UNAVOIDABLE.

The chief difficulty is to collect the entire quantity of feces and urine separately. In most of the reported investigations there was either a direct loss of feces or of urine, or some of the urine escaped into the feces. In some of the earlier investigations the feces were collected on the baby's napkin and afterwards scraped off; this method, of course, resulted in an appreciable loss. In some instances the observations were restricted to one or two days, too short a time to insure accurate results. It was a long time before a satisfactory method was discovered for separating the feces of the metabolism period from the feces which belonged to the periods preceding and following it. Some of the earlier methods for the determination of fat and nitrogen were inaccurate. In some cases the food was not analyzed by the investigator, but analyses were accepted which had been made by other observers. In other cases, the usual diet was quite different from that of the metabolism period and no time was allowed for the organism to become accustomed to the change. In some instances in which the child was on a varied diet, the diet was suddenly restricted in order to reduce the number of analyses; such changes are apt to diminish the appetite and otherwise to affect the metabolism. Sometimes a quantity of food sufficient to last through the observation was prepared and samples of this food selected for analysis. This reduced the number of analyses, but the patient had to eat stale food, which may have influenced metabolism.

In addition to these errors, there still remain some that are unavoidable to a great extent and which alter the results more or less. Of these the following are the most important:

1. The effects produced on the metabolism by restraint and unusual surroundings.
2. Errors due to defects in the methods used to segregate the feces and urine of the metabolism period.

One of the ill effects which has been attributed to restraint and unusual surroundings is, that often during the time in which the metabolism is studied the feces are more watery and are passed more frequently than usual. This effect was not apparent in any of the observations which I am about to describe. In the first case, that of a child four and one-half years old, there was no restraint. Her daily habits and surroundings were unchanged. She remained at home and carried on her accustomed occupations. For the most part she remained in bed because of her condition. A trained nurse who had attended her for more than a year, continued to have the entire charge of her during the observations. This nurse was one whom I had employed many times. She understood perfectly what was required of her and I felt perfect confidence in her reliability.

In the second case, an infant one year old, the effects of restraint were rarely apparent after the first few hours. He played with toys and was happy and contented most of the time. He was always eager for his food and there was no apparent change in the number or character of the dejections with the exception of those which contained the charcoal which was added to the food to segregate the feces. He had not been accustomed to much attention, so that the constant attendance of a nurse was a source of great pleasure to him. I should say that the restraint and changed surroundings produced in his case a minimum amount of disturbance. The nurse in charge of the infant was exceptionally well adapted to the task. She was intelligent, very patient and absolutely trustworthy. During a four days' observation she never left the room for more than a few minutes at a time and she was up many times each night to see that everything was in order. A circumstance of great importance was that both nurses were deeply interested in the work. It is not going too far to say that the success of the work depended on these two nurses.

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* This work was awarded the Dalton Prize by the Massachusetts General Hospital.

[1] O. Hauser: (references to literature) Die Neueren Arbeiten über den Stoffwechsel beim Kinde, Speziell beim Säugling Zeits. f. Diatet. u. physikal. Therapie, vol. iii, 1899.-1900.

In my observations to distinguish the feces of the metabolism period, a weighed quantity of charcoal was added to the food at the beginning of each metabolism observation and to the first food which was given six hours after the close of each observation. Charcoal has a tendency to cause watery movements. To avoid this it should be finely powdered and given in the form of an emulsion and in not too large quantities. Sometimes only a portion of a dejection contains charcoal and the remaining portion looks as usual. It is not only difficult or perhaps impossible in such a case to separate, with absolute accuracy, the feces of the metabolism period from those immediately preceding or following it, but in some cases it is probable that the increased peristalsis, due to the charcoal, hurries a portion of the charcoal through the intestines in advance of the rest. This may become mixed with some of the feces which do not belong to the metabolism period; or if at the end of the period with feces that should be retained, but which in consequence of the presence of charcoal would be discarded. In this way, an error would be introduced that could not be rectified. Chocolate has been used by Bendix[2] and others in place of charcoal. This introduces an appreciable error, unless an equal quantity is reserved for analysis and the results included with the analysis of the food. This necessitates additional determinations of fat and nitrogen. I used chocolate at the beginning of one observation and charcoal at the end. The chocolate contained 0.1978 grm. of nitrogen and 2.6509 grm. of fat. This was equivalent to a little over 1 per cent. of the total nitrogen in the food and to about 2.5 per cent. of the total fat.

The method employed to segregate the urine in metabolism observations in adults can not be employed in similar observations in infants. In the case of adults, no food is taken for twelve or more hours preceding the observation. This is accomplished without inconvenience to the patients by beginning the observation in the early morning. This gives time for the products of metabolism which belong to the period preceding the metabolism observation to become excreted by the kidneys. The urine that is passed first in the morning is therefore discarded. The observation is concluded at the same time in the morning and the first urine passed is retained. Infants are necessarily fed at short intervals and prolonged fasting is therefore impracticable. This difficulty is probably obviated to a great extent by the fact that the infant takes the same quantity and kind of food at regular intervals. If, therefore, the infant's diet has remained unchanged for several days preceding the observation, it is probable that the products of metabolism which are excreted in the urine during a given twenty-four hours would approximate those of a corresponding twenty-four hours. The plan which I adopted was to omit one feeding before beginning the observation, and to begin to collect the urine about one hour after the first feeding was given. At the close of the observation the urine was collected for an hour after the last feeding.

In the case of the first child the diet was unchanged for at least two or three weeks before each observation was begun. In the first observation the diet was arranged primarily to conform to the digestion and appetite of the patient, rather than to furnish a certain number of calories, with a suitable proportion of proteids, fat and carbohydrates. It had been found by observation that certain things were digested better than others, and the diet consisted of these substances.

In the second observation, made a month later, the proteids and carbohydrates were increased and the fat was diminished. These changes were made more than two weeks before the second observation was begun, so that the organism had become accustomed to the changes. In the case of the infant the only change that was made was to increase the quantity of food during the second observation. This change was made at least a week before the second observation was begun.

To determine the quantity of nitrogen and fat that was actually ingested by the infant, the nursing bottle and nipple were rinsed with distilled water after each feeding and the rinsings were reserved for analysis. The nitrogen and fat were determined in the rinsings and the results were deducted from the total nitrogen and fat of the food.

Pepsin was used in the infant's food for both the first and second observations. An equal portion of pepsin was reserved for analysis in each observation. These two portions were mixed together and one set of fat determinations served for both observations. The nitrogen was determined as usual, that is, two determinations for each month. The results were added to those of the food.

A loss of urine or of feces is reported in every published observation on infant's metabolism with which I am familiar. I decided that if any such loss occurred during my investigations I would discard the results. A loss of urine occurred in three investigations not included in this paper, twice on the first day and once at the end of the fourth day. These observations were discarded. In the four metabolism investigations which are here reported there was absolutely no loss of urine or feces.

HISTORY OF CASE 1.

The first case was so interesting clinically that I give a brief account of it. I obtained the following history from the trained nurse who had attended the child for a year and a half previous to the time that I was asked to see her.

History.—Female, aged 4½ years, birth weight nine pounds, normal infant, breast fed until 7 months old. She gained well during this time. At 7 months, she was given barley water and milk, with one feeding of a proprietary food. Later this was increased to several feedings of the same food, with milk. The infant apparently did well and grew very fat. Up to the age of 22 months she had no illness, except influenza at 9 months. At 22 months she began to have indigestion. She was still taking the proprietary food, in addition to her other diet. A prominence of the abdomen was observed at this time. During the next six months she gained but little and her digestion was impaired. At this time, 2 years and 4 months old, she was seen by a specialist, who diagnosed the condition as intestinal indigestion. During the succeeding seven or eight months her weight remained about the same, and once in two or three months she had attacks of acute intestinal disturbance, consisting of fever, diarrhea and rapid loss of weight. During these attacks the food was reduced, and for some time afterward the diet was much restricted. When she was 3 years and 4 months old, she had such an attack, associated with bronchial catarrh. This attack appears to have been severer than any previous one. A slight edema of feet, hands and face was noted for the first time, and later the abdomen became enlarged and measured 25 inches. The quantity of urine in 24 hours did not exceed 20 ounces, and at one time was much less. The dejections were loose or watery, with a great deal of mucus in them, and had a very strong odor. This condition lasted for several weeks; then the edema subsided and her weight was found to be 25 pounds. She was at this time 3½ years old. The urine was examined during this attack and a few casts were found. The temperature during the attack was normal. The digestion gradually improved and the dejections became normal in appearance, except that the color was pale. The next attack occurred when she was 3 years and 10 months old. There had been an interval of about three months between these attacks. This attack was not accompanied by edema, it lasted about one week, and she lost 2½ pounds. Just before this attack her weight was 26 pounds, 12 ounces. Two months later (4 years old) she weighed 28 pounds, 4 ounces. The abdomen measured 19 inches. She digested well. A month later she had another attack, not a very bad one, but she was unable to digest solid food and lost one-half pound a week for three weeks. Then edema appeared in face, feet and hands. The amount of urine was 29 ounces in 24 hours. Dejections were watery and contained mucus. The urine diminished in quantity during several days and the abdomen enlarged. The watery dejections increased in number. The urine diminished to 3 ounces on one day and then gradually increased in quantity after hot air baths, etc. The edema was very marked—general anasarca and ascites. Abdominal paracentesis was performed and 18 ounces of clear pale fluid was withdrawn. The temperature was normal during the attack. The urine showed a few hyaline casts. A second examination a few days later showed no albumin, no casts. The abdomen was aspirated a second time, two days later, and about 30 ounces of fluid withdrawn. The daily quantity of urine for about a week did not exceed 9 ounces. After the digestion improved the amount of urine increased to 50 or 60 ounces daily for a few days and the edema disappeared. About one month after the beginning of this attack, she was passing on an average from 40 to 50 ounces of urine each day, and she continued to pass this excessive quantity for several months afterwards. Her weight at this time, after the edema had disappeared, was 25 pounds, 3 ounces, and her age was 4 years and 4 months. In the next three weeks, her weight increased to 27 pounds and her digestion appeared to be as good as at any previous time.

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[2] B. Bendix: Beiträge zum Stoffwechsel des Säuglings, Jahr. f. Kinderheilkunde, vol. xliii, 1896. Weitere Beiträge zum Stoffwechsel des Säuglings. Jahr. f. Kinderheilkunde, vol. xlvi 1898.

Discussion of Diagnosis.—I saw the child in consultation with Dr. Herman T. Baldwin, of Chestnut Hill, for the first time, at this period. A number of physicians had seen her at different times and had not agreed on a diagnosis. Interstitial nephritis and tubercular peritonitis had been considered among the diagnoses. From the history and physical examination it seemed to me very unlikely that it was tubercular peritonitis, and repeated urine examinations made by Prof. E. S. Wood during the next few weeks failed to detect interstitial nephritis. It appeared to me to be a case of chronic intestinal disturbance similar to infantile atrophy and associated with periodic acute exacerbations of intestinal indigestion. The occurrence of so marked an edema and ascites under such conditions was unusual, and the persistent excretion of such a large daily quantity of urine made me suspect that the kidneys were not normal, although this symptom was present in similar cases that I had seen. I attributed any alterations in the kidneys, if such were present, to the irritative effect produced by the excretion of some substance or substances unknown, which had resulted from prolonged disturbances in metabolism.

Examination.—Physical examination did not show anything abnormal aside from emaciation, a moderate degree of pallor of the skin and visible mucous membranes, and very little edema of the hands and feet. It seemed to me that a study of the child's metabolism might throw light on the nature of the process. It also offered a reasonable hope that, by means of the knowledge thus gained, the diet could be adjusted in such a way as to evert the periodic attacks of intestinal indigestion.

Course of the Disease.—These anticipations were fulfilled, to some extent, by the result of two metabolism observations which were undertaken shortly afterward. The child's digestion steadily improved and she gained in weight during the succeeding five months. At the end of five months she had gained 4½ pounds and weighed 31½ pounds. Her weight at this time exceeded by several pounds that of any previous time, and she had never in the course of her illness had so little digestive disturbance. In May, there was a period of extreme heat, which lasted for ten days, and was responsible for a great many cases of diarrhea and vomiting among infants and children. This child had an attack which lasted several days and left her considerably prostrated. About three weeks after the attack, she was removed to the seashore and appeared to be improving in general condition. A few days afterward, she was taken ill quite suddenly, had a high temperature and a fleeting, patchy erythema which disappeared within a few hours and was not followed by desquamation. The throat was not abnormal and no symptoms appeared which threw any light on the diagnosis. The temperature remained elevated for three days. On the fourth day, the urine became markedly diminished, showed a faint trace of albumin, no sugar, and nothing abnormal in the sediment. The child became stupid and finally unconscious within 24 hours, and the urine was practically suppressed. She was treated energetically with hot air baths and pilocarpin; her bowels were moved freely, and as much water was introduced into her system as possible. She roused somewhat on the following day and recognized her surroundings at times. This improvement only lasted a few hours and then she became unconscious and all treatment was without effect. She died on the sixth day after the acute onset of the disease, with all of the symptoms of uremic intoxication.

Autopsy.—I performed an autopsy about six hours after death. The macroscopic appearances of the organs were not markedly abnormal. Tuberculosis and tubercular peritonitis had been suggested at different times by various physicians, but there was no evidence whatever of tuberculosis anywhere. Microscopically the only abnormalities of any consequence were very marked fatty changes in the renal epithelium, especially of the convoluted tubules. There was no evidence of acute or chronic inflammation in the kidneys. The liver contained an abnormally large quantity of fat, but otherwise was not abnormal. The spleen contained relatively few cellular elements, so that the reticulum was more prominent than usual. Otherwise nothing of consequence was apparent. The lungs and heart and lymph nodes and peritoneum were not abnormal.

METHOD EMPLOYED IN CASE 1.

Two metabolism observations were made on this child. Each observation lasted for four days. The first observation began on Dec. 18, 1902, and ended on Dec. 22, 1902. The weight at the beginning of the first observation was 11,716 grams (25 lbs. 14 ozs.), and at the end was 11,942 grams (26 lbs. 6 ozs.).

The method employed for distinguishing the feces of the metabolism period was the same as that used in similar observations on adults. The observation was begun in the early morning, after twelve hours' abstinence from food. Charcoal was given with the first feeding and the first dejection which contained charcoal was reserved for analysis. At the close of the observation food was withheld for twelve hours, and charcoal was added to the first feeding. The feces were collected for analysis until the charcoal appeared. At the beginning of the observation the first urine passed in the morning was discarded and at the end of the observation it was retained. The weight of the fresh food ingested during the four days' observation was 5,217 grams. The weight of the same food after drying was 908.5 grams. The weight of the dried feces for the same period was 138.79 grams.

The second observation began on Jan. 27, 1903, and ended on Jan. 31, 1903. The weight at the beginning of the second observation was 12,452 grams (27 lbs. 8 oz.), and at the end was 12,791 grams (28 lbs. 4 oz.). The weight of the fresh food ingested during the four days' observation was 6517 grams. The weight of the same food after drying was 1292.5 grams. The weight of the dried feces for the same period was 111.56 grams.

In both metabolism observations on this child, the gain in weight can not be ascribed solely to a new formation of tissue. The presence of a slight amount of edema in the tissues might account for variations of several ounces in the weight. In addition to this, the child was accustomed to receive an injection of water each day in order to obtain satisfactory movements from the bowels. It is possible that some of this water may have been retained in the intestines.

The following method was employed in both observations on this child and the results are arranged for comparison in parallel columns in Tables 1, 2 and 3. The food, both liquid and dry, was weighed each day, in two equal portions, one for the child and one for analysis. When dried substances like rusks or crackers were weighed, each large piece was broken into several smaller pieces and alternate pieces were used for analysis and for the child. Every particle of food was eaten in the presence of the nurse, who was ingenious and devised means to avoid loss of food; viz., butter was spread on the crackers, using a second cracker for a knife; both crackers were eaten; paper napkins were used to collect the crumbs, crumbs were then eaten; glasses containing cream, barley jelly or broth were rinsed with water, which was drunk by the child. The glasses containing liquids or semi-solids, reserved for analysis, were cleansed in the same way as those used by the child, so that the portion for analysis represented accurately the portion actually eaten. The child could always be induced to eat the quantity of food provided for the twenty-four hours, otherwise the work could not have been carried out. The same quantity was not always taken at corresponding meals, but the entire quantity was always consumed in the twenty-four hours.

The food corresponding to that which was eaten by the child each day, was acidulated with hydrochloric acid and evaporated on a steam bath. When almost dry, alcohol was added, and evaporated several times to drive out the water. The dried food was then ground to a fine powder; weighed; mixed thoroughly, and quartered down to a few grams for a single analysis. A similar procedure was adopted for a duplicate analysis. So that each test was made from a quartered sample weighing a few grams.

In my first metabolism observation on this child, I did not appreciate how much difficulty could be caused by the presence of filter paper in the food and feces. It was necessary to cleanse the patient after each dejection and to add the fecal matter thus obtained to the total quantity of feces. A weighed amount of filter paper was used for this purpose and this weight was deducted from the weight of the dried feces and food when computing the quantity of fat and nitrogen. The presence of filter paper in the food and feces made it very difficult to reduce them to a powder. It also introduced an error in the feces which I was only partially able to rectify. It was impossible to mix the powdered feces and filter paper so that each aliquot portion contained the same weight of feces and of filter paper. One sample would contain a little more feces and another would contain more filter paper. Two final determinations of the total fat in the feces showed a difference of about 5 per cent. This introduces an error of 2.5 per cent. This was in a second series of determinations. In the meantime, the feces had been mixed and quartered repeatedly for nitrogen determinations. Filter paper was not used in the subsequent observations. Instead the parts were cleansed by means of a rubber finger cot on the nurse's finger and the fecal matter was washed off the cot into the general receptacle; by this means none was lost.

The feces for each day were evaporated on a steam bath after acidulation with hydrochloric acid. The moist weight could not be determined. At the end of the four days' observation the drying was assisted by evaporating with alcohol several times. The feces afterwards were treated in the same manner as the food, i. e., ground to powder, weighed and quartered to a few grams for each analysis. Up to the time that the food and feces were powdered and weighed, the greatest care was taken that none should be lost. All dishes or apparatus that came in contact with the food or feces, were scraped and then washed with alcohol, the alcohol evaporated and the residue added to the food or feces as the case might be.

The child was accustomed to have enemata and without them the bowels did not move satisfactorily and she was liable to attacks of indigestion. The enemata were continued during the observations.

She was always required to pass urine before receiving an enema; and to avoid any loss of urine at the time of the movement, I arranged a simple device which succeeded perfectly. It consisted of a small tin funnel, which I flattened a little from side to side. A piece of rubber tubing was attached to the outlet and from thence led to a receptacle on the floor. During defecation the funnel was pressed firmly against the labia by means of a stout piece of twisted wire, which had a loop at one end through which the end of the funnel passed.

The urine was preserved with chloroform and made up to a definite volume so that analysis was simplified. The nitrogen was determined in the urine each day by Kjeldahl's method, using sulphuric acid, sulphate of potassium and sulphate of copper. In the case of the food and feces, a weighed portion of the dried substance was used. The urine nitrogen was determined in 5 c.c. of the diluted urine measured in a pipette. The same pipette was used in all determinations.

The fat in the food and feces was determined by the Soxhlet method, using petroleum ether. The petroleum ether was subjected to two distillations and tested for a residue before using. A weighed amount of the dried substance was treated with alcohol containing 2 per cent. of hydrochloric acid and evaporated almost to dryness; alcohol was then added and evaporated several times. When nearly dry, a quantity of sand sufficient thoroughly to separate the particles was stirred in and the mixture evaporated to dryness. The sand was thoroughly washed and ignited for several hours and a blank extraction made before it was used. In all fat determinations continuous extraction was maintained for from 48 to 72 hours. At the end of this time, fresh ether was added, extraction was continued for a time and then the ether was tested for a residue. Finally the ether containing the fat was evaporated and the flask and its contents were placed in a thermostat at 95° C. for several hours. After it was cooled and weighed the procedure was repeated and a second weighing made.

All the fat and nitrogen determinations were done in duplicate. When the results disagreed, a second series of determinations was made.

The method of preparing the food for analysis was devised by McCrudden.[3]. This method was thoroughly tested by him and found to be accurate. McCrudden says:

> This makes but one analysis of the food necessary and permits giving the patient an unrestricted diet. The food given is always fresh, and the inaccuracy due to keeping is overcome by weighing the patient's food and that for analysis at the same time. . . . In quartering, the food is thoroughly mixed with a large spatula and then is made into a little circular pile a couple of inches high. The pile is divided into four nearly equal quarters. Two opposite quarters are rejected and the other two well mixed, made into another little pile and quartered again. The mixing and quartering are repeated until there is about enough food left for one set of analyses. Samples for duplicate and triplicate analysis are obtained in the same way.

The mixing and quartering can be done conveniently on a large plate of glass.

A series of heat determinations were made of the food. These tests were made in Prof. Norton's laboratory at the Massachusetts Institute of Technology. The determinations were made in a modified Berthelot's bomb under the direction and with the assistance of Prof. Norton. I am glad of this opportunity to thank him for his great kindness to me. It was my intention to have determined the heat in the food, feces and urine from each observation, but a satisfactory method for drying the urine without loss of nitrogen was not discovered until too late.

TABLE OF RESULTS IN CASE 1.

TABLE 1.

December, 1902. Nitrogen Determinations. January, 1903.

December, 1902.	Nitrogen in grams.	Nitrogen in grams.
908.5 grams dried food contained	....	20.2235
Urine nitrogen,		
December 19	3.3038	
December 20	3.8671	
December 21	3.4515	
December 22	3.6611	
	14.2835	
Feces nitro. (138.79 grams dried wt.)	5.0242	
Total nitrogen excreted in feces and urine	19.3077	19.3077
		+0.9158

Summary.

24.84 per cent. of total nitrogen excreted in feces.
3.62 per cent. dried feces consisted of nitrogen.
15.27 per cent. by weight of dried feces to dried food.

January, 1903.	Nitrogen in grams.	Nitrogen in grams.
1292.5 grams dried food contained	. . . .	28.0545
Urine nitrogen,		
January 28	4.2647	
January 29	4.5212	
January 30	4.5836	
January 31	4.3562	
	17.7257	
Feces nitro. (111.56 grams dried wt.)	5.9185	
Total nitrogen excreted in feces and urine. . . .	23.6442	23.6442
		+4.4103

Summary.

21.09 per cent. of total nitrogen excreted in feces.
5.30 per cent. of dried feces consisted of nitrogen.
8.63 per cent. by weight of dried feces to dried food.

ANALYSIS OF RESULTS IN CASE 1.

An analysis of Tables 1, 2 and 3 show certain results. There was almost one-third more fat in the food in December than in January, and a very marked difference in the percentage of fat in the feces in the two observations. In December, 19.05 per cent. of the dried food consisted of fat; in January, 9.95 per cent. consisted of fat. In December, 40.19 per cent. of the fat ingested appeared in the feces; in January, 16.45 per cent appeared in the feces.

Contrary to what one would expect, the excessive quantity of fat in the diet in December and its markedly deficient absorption by the intestines did not appear to interfere very much with the absorption of the nitrogen. A comparison of nitrogen absorption in December and January shows 24.84 per cent. nitrogen excreted in the feces in December and 21.09 per cent. nitrogen excreted in the feces in January. This is quite striking, because it is believed that excessive quantities of fat not only impair the fat digesting and absorbing functions, but also interfere with the other digestive functions. The fat offers a mechanical hindrance to the action of the other ferments on the food and gives rise to abnormal decomposition products. It must be remembered, when comparing the December and January results, that the conditions were dissimilar in these two observations. In December, the child was recovering from a severe digestive disturbance. In January both her general condition and her digestion were considerably improved. The food in January contained very much less fat than in December and was a very much more suitable one in the relative proportions of fat, proteids and carbohydrates. In December, the diet had not been adjusted, but articles had been added that previous experience had shown to agree with the patient.

TABLE 2.

December, 1902. Fat Determinations. January, 1903.

December, 1902.	Weight in grams.
908.5 grams of dried food contained.	173.1096
138.79 grams of dried feces contained	69.5797

Summary.

40.19 per cent. of ingested fat excreted in feces.
19.05 per cent of the dried food consisted of fat.
50.13 per cent of the dried feces consisted of fat.

January, 1903.	Weight in grams.
1292.5 grams of dried food contained . . .	128.6741
111.56 grams of dried feces contained	21.1753

Summary.

16.45 per cent. of ingested fat excreted in feces.
9.95 per cent. of the dried food consisted of fat.
18.98 per cent. of the dried feces consisted of fat.

TABLE 3.

December, 1902. Heat Determinations. January, 1903.

December, 1902.	
	temp. rise
1 gram of dried food . . .	2.15°
	large cal.
2.15° rise temperature	5.12
908.5 grams of dried food	4651.5
Calories per diem ingested	1162.9
	temp. rise
1 gram of dried feces. .	2.57°
	large cal.
2.57° rise temperature . .	6.12
138.79 grams of dried feces	848.9
Calories per diem excreted in feces	212.2

Summary.

Calories per diem ingested in food	1162.9
Calories per diem excreted in feces	212.2
Calories per diem actually absorbed	950.7
Calories per kilo weight per diem in food	98.3
Calories per kilo weight per diem absorbed . .	80.3
Gain in weight per diem in grams	56.5

January, 1903.	
	temp. rise.
1 gram of dried food. . .	1.975°
	large cal.
1.975° rise temperature .	4.7
1292.5 grams of dried food	6074.8
Calories per diem ingested	1518.7
	temp. rise
1 gram of dried feces. . .	2.18°
	large cal.
2.18° rise temperature .	5.19
111.56 grams of dried feces	578.8
Calories per diem excreted in feces	144.7

Summary.

Calories per diem ingested in food . .	1518.7
Calories per diem excreted in feces	144.7
Calories per diem actually absorbed	1374.0
Calories per kilo weight per diem in food	120.3
Calories per kilo weight per diem absorbed . .	108.8
Gain in weight per diem in grams	84.75

A consideration of the distribution of the calories in the component parts of the food will show this clearly. The heats of combustion of the total quantity of food taken in the December and in the January observations were accurately determined by means of a bomb-calorimeter. This permits a computation of the distribution of calories in the component parts of the food to be made with sufficient accuracy for purposes of comparison, which is all that is intended. The factor 6.25 was used to determine the amount of proteid material which corresponded to the nitrogen content of the food. This is incorrect for estimating the proteid in cream, but it was not possible to determine the nitrogen separately in the cream. The calories due to carbohydrates are estimated by difference. Table 4 shows the approximate distribution of the calories in the food for a single day in December and in January:

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[3] American Journal of Medical Sciences, March, 1903.

TABLE—4.

December.	Calories each day.	Approximate wt in grams.	January.	Calories each day.	Approximate wt. in grams.
Proteid....	129.5	31.5	Proteid....	179.7	43.8
Fat ..	402 5	43.2	Fat	299.2	32.1
Carbohydrate.	630 9	153.8	Carbohydrate	1039 8	253.6
Total	1162.9		Total	1518.7	
98.3 Calories per kilo per diem.			120.3 Calories per kilo per diem.		

The weight of the dried feces in December far exceeded the weight of the January feces, notwithstanding that much less food was ingested in December. Thus: December: Weight of dried food, 908.5 grams; of dried feces, 138.79 grams. January: Weight of dried food, 1292.5 grams; of dried feces, 111.56 grams.

This excess in December was due in part to the larger quantity of fat in the food, but the impaired state of the digestion and the general condition in December as compared with January must have exerted some effect on absorption.

In December, 50.13 per cent. of the weight of dried feces was fat; in January, 18.98 per cent. was fat.

Heat determinations of the food and feces in this case show that in December, 1162.9 calories were ingested each day and that 212.2 calories were lost in the feces each day. If one regards the difference as so many calories absolutely absorbed, it leaves 950.7 calories. This corresponds to 80.3 calories per kilo weight a day. Heat determinations of the food and feces in January show that 1518.7 calories were ingested each day and that 144.7 calories were lost in the feces. The difference is 1374 calories, or 108.8 calories per kilo weight a day. This number of calories per kilo is considerably more than is required to maintain the weight of a child of the age of this one. At any rate, in spite of impaired absorption, the child absorbed more than enough to maintain her weight; as a matter of fact, there was a steady gain in weight and improvement in general condition from this time until the following May.

HISTORY OF CASE 2.

The second case is that of an infant one year old, with a history of faulty feeding and chronic gastro-enteric disturbance. Physical examination showed very marked emaciation and a moderate degree of anemia. Nothing abnormal was detected in the various organs. The temperature was subnormal during a greater part of the time that the infant remained under observation. Weight 5490 grams (12 lbs. 2 oz.).

METHOD EMPLOYED IN CASE 2.

Two metabolism observations were made on this infant. Each observation lasted four days. The first observation began on Oct. 27, 1903, and ended on Oct. 31, 1903. The weight at the beginning of the first observation was 5955 grams (13 lbs. 2 oz.), and at the end was 6135 grams (13 lbs. 8½ oz.).

The infant received seven feedings in each twenty-four hours. The first feeding of the metabolism period consisted of 75 c.c. of whole milk and 75 c.c. of barley jelly. In order to differentiate the feces of the metabolism period, a few grams of powdered chocolate were dissolved in 70 c.c. of the milk and barley jelly mixture. Thirty-five cubic centimeters of this mixture were added to the 150 c.c. of the first feeding and the remaining 35 c.c. were reserved for analysis. Each subsequent feeding consisted of 100 c.c. of whole milk and 100 c.c. of barley jelly. The food was peptonized for ten minutes before each feeding.

The first dejection occurred at 4:30 p. m., October 27, and contained no chocolate. The second dejection occurred at 2:30 a. m., October 28, and was intimately mixed with chocolate. It was soft, smooth, chocolate brown in color and contained more fluid than normal. Following this, there were three additional dejections on October 28, at 7:30 a. m., 12:30 p. m., and at 3:30 p. m. These dejections contained less fluid than the first one, and the last one contained only a trace of chocolate. The subsequent dejections were yellow in color, of normal consistency and slightly curdled in appearance. There were two dejections daily after the first 24 hours. Three grams of charcoal were given with the first feeding six hours after the first observation was concluded.

The total weight of the dried feces for the four days' observation was 55.7418 grams. The total quantity of food taken during this time was 5550 c.c.

A second metabolism observation on the same infant began on Nov. 13, 1903, and ended on Nov. 17, 1903. The infant's weight at the beginning of the observation was 5825 grams (12 lbs. 14 oz.) and at the end was 6120 grams (13 lbs. 8 oz.).

The infant received seven feedings in each 24 hours. The first feeding of the metabolism period consisted of 100 c.c. of whole milk, 75 c.c. of barley jelly, and 35 c.c. of a mixture composed of 3 grams of willow charcoal suspended in 40 c.c. of mucilage of acacia. Each subsequent feeding consisted of 110 c.c. of whole milk and 110 c.c. of barley jelly. The food was peptonized for ten minutes before each feeding. There were four dejections in the first 24 hours. A small portion of the first dejection was mixed with charcoal. This portion was reserved for analysis and the remainder was discarded. The second dejection was completely blackened with charcoal. The dejections throughout the observation were partly formed and were well digested. After the first 24 hours, they averaged three in number daily. Charcoal was given in the first feeding six hours after the observation was concluded. In the course of the observation, the infant refused 120 c.c. of one feeding. This amount was added to the rinsings for analysis.

The total weight of the dried feces for the four days' observation was 76.4583 grams. The total quantity of food taken during this time was 6115 c.c. The daily quantity of urine passed during both observations was somewhat less than one liter. It averaged about 900 c.c. At the beginning of the second observation, the urine was found to be cloudy when passed. The reaction was acid; there was a trace of albumin present; sugar absent. The sediment was moderately heavy and was composed chiefly of pus corpuscles. A moderate number of caudate cells, corresponding in size to those which line the pelvis of the kidney, were present in the sediment. No casts were found. This pyelitis continued for several weeks. There was never any evidence that the kidney itself was affected. The patient's general condition, appetite and digestion were not noticeably affected and he gained in weight. There was never any edema. The temperature during the first few days was slightly elevated. Previous to this time, the temperature, as in many cases of atrophy, was oftener subnormal than normal. During the early stage of the pyelitis the temperature rose to normal. The cause of the pyelitis could not be determined and the condition would not have been suspected without the urinary examination.

The following method was employed in both observations on the infant, and the results are arranged for comparison in parallel columns in Tables 5, 6 and 7. A method which I devised for segregating and collecting the urine and feces will be described in a future publication.

Throughout the work, the same pipettes were used for measuring fluids. I mixed the food each day and measured the quantity of each feeding directly into the feeding bottles by means of pipettes. A certain quantity of the food was measured into a flask each day and reserved for analysis. A few drops of formalin were added and the mixture was kept on ice until needed for analysis. After each feeding, the nursing bottle and nipple were rinsed with distilled water and the rinsings were reserved for analysis. A few drops of formalin were added to preserve the rinsings.

The urine was collected in glass flasks. The flasks were changed at short intervals and the urine which they contained was poured into a large flask. The small collecting flasks were rinsed each time with a little distilled water. At the end of 24 hours these rinsings were added to the day's urine and the whole was made up to a standard quantity with distilled water. This was done to simplify the nitrogen calculation. The urine was preserved with a little chloroform. Nitrogen determinations in the urine were made each day to avoid any loss of nitrogen from decomposition. The urine was tested for albumin and sugar, and the sediment was examined before and after each observation.

The feces were collected in evaporating dishes and treated as previously described.

The nitrogen was determined in the food, rinsings and urine by Kjeldahl's method, using sulphuric acid, potassium or sodium sulphate, and copper sulphate. For this purpose 5 c.c. of the urine and food were taken for each analysis.

The nitrogen in the feces, pepsin and chocolate was determined in a weighed amount of the dried substance. Fat determinations were made by Soxhlet method. In the case of the milk mixture and rinsings from nursing bottles, 10 c.c. were used for each analysis. This quantity was spread on filter paper that had been extracted with ether previously. This was dried in the thermostat at 95° C. and subjected to 72 hours' continuous extraction. The fat was determined in weighed amounts of the feces, chocolate and pepsin by the method described in connection with the first series of metabolism observations.

ANALYSIS OF RESULTS OF CASE 2.

An analysis of Tables 5, 6 and 7 shows certain results. The composition of the food remained the same in both observations. In the second observation the quantity was increased. In October, the total quantity of food contained 106.72 grams of fat; in November, it contained 119.13 grams of fat. The percentage of fat in the food in October was 1.92 per cent. In November it was 1.95 per cent. Otherwise expressed, each liter

TABLE OF RESULTS IN CASE 2.

TABLE 5.

October, 1903. Nitrogen Determinations. November, 1903.

October, 1903.	Nitrogen in grams.	Nitrogen in grams.
5550. c.c, food contained	....	17.0625
Chocolate contained	....	0.1978
Pepsin contained	....	0.3584
		17.6187
Rinsings from feeding bottles contained	....	0.1277
Total nitrogen ingested	....	17.4910
*Urine nitrogen—		
Oct. 28 (21 hrs.)	2.8378	
Oct. 29	3.1025	
Oct. 30	3 0154	
Oct. 31 (27 hrs.)	3.5298	
	12.5155	
Feces nitrogen (55.7418 grams dried weight)	2.9818	
Total nitrogen excreted in feces and urine	15.5003	15.5003
		+1.9907

Summary,

17.06 per cent. of total nitrogen excreted in feces.

5.35 per cent. of dried feces consisted of nitrogen.

13.51 p r cent. by weight of dried feces to dried food.

November, 1903.	Nitrogen in grams.	Nitrogen in grams.
6115. c.c. food contained	....	18.5262
Pepsin contained	....	0.3540
	....	18.8802
Rinsings from feeding bottles contained	....	0.3171
Total nitrogen ingested	....	18.5631
Urine nitrogen,		
November 14	3.3640	
November 15	3.4138	
November 16	3.2021	
November 17	3.5632	
	13.5431	
Feces nitrogen (76.4583 grams dried weight)	2 9327	
Total nitrogen excreted in feces and urine	16 4758	16.4758
		+2.0873

Summary.

15.79 per cent. of total nitrogen excreted in feces.

3.83 per cent. of dried feces consisted of nitrogen.

16.55 per cent. by weight of dried feces to dried food.

* The reason for such a marked apparent difference in the daily quantity of nitrogen excreted by the kidneys in the October observation is that on the first day the urine was collected for twenty-one hours, and on the fourth day for twenty seven hours. This prevents a comparison of the nitrogen excretion of these two days with that of the other two days of the observation, but it does not alter the total excretion of nitrogen for the four days. It was necessary, in order to arrange my work, to begin the observation at about noon, and in the first observation there was an unavoidable delay of three hours. The only ways by which I could remedy the matter were either to shorten the time of collection of the urine for the first day, or else to postpone the observation. As it did not alter the result I chose the former method.

TABLE 6.

October, 1903. Fat Determinations. November, 1903.

October, 1903.	Weight in Grams.
5550. c.c. of food contained (19.22 grams of fat per liter)	104.3955
Chocolate contained	2 6509
Pepsin contained (one set determinations for Oct. & Nov.)	0.0897
	107.1361
Rinsings from feeding bottles contained	0.4163
Total fat ingested	106 7198
55.7418 grams of dried feces contained	12.5906

Summary.

11.80 per cent. of ingested fat excreted in feces.

1.92 per cent. of the food consisted of fat.

22.59 per cent. of the dried feces consisted of fat.

November, 1903.	Weight in Grams.
6115. c.c. of food contained (19.48 grams of fat per liter.)	119.8540
Pepsin contained	0.0915
	119.9455
Rinsings from feeding bottles contained	0.8100
Total fat ingested	119.1355
76.4583 grams of dried feces contained	27.7565

Summary.

23.30 per cent. of ingested fat excreted in feces.

1.95 per cent. of the food consisted of fat

36.30 per cent. of the dried feces consisted of fat.

of food contained in October 19.22 grams of fat, and in November 19.48 grams of fat. It will be seen that the fat content was approximately the same in both observations. In November, there was a much greater loss of fat in the feces, and the weight of the dried feces was considerably more than in October. The appearance of the feces when passed was not dissimilar in the two experiments and looked much more normal as a rule than is usual in cases of atrophy.

In October, the dried feces weighed 55.74 grams and contained 11.80 per cent. of the fat ingested. In November, the dried feces weighed 76.45 grams and contained 23.30 per cent. of the ingested fat. Notwithstanding the increased quantity of feces in November and double the percentage of fat which they contained as compared with October, the percentage of nitrogen lost in the feces in November was less than in October. In October the feces contained 17.06 per cent. of the nitrogen ingested, and in November, 15.79 per cent.; so that the greater loss of fat in the feces in November did not increase the loss of nitrogen. In both observations, the nitrogen retention was about the same, viz.: October, + 1.9907 grams; November, + 2.0873 grams.

TABLE 7.

Heat Determinations.

October, 1903.		November, 1903.	
	grm. dried wt.		grm. dried wt.
50. c.c. of food......	3.7009	50. c.c. of food......	3 7769
	rise temp.		rise temp.
3.7009 grams dried food	8.354°	3.7769 grms. dried food	8.659°
	large cal.		large cal.
8.354° rise temperature	19.881	8.659° rise temperature	20.609
5550. c.c. of food....	2206.8	6115. c c. of food...	2520.4
Calories per diem in food	551.7	Calories per diem in food	630.1
Calories per liter in food	397.6	Calories per liter in food	412.1
Summary.		Summary.	
Calories per diem in food . .	551.7	Calories per diem in food. .	630.1
Calories per diem in rinsings	4.1	Calories per diem in rinsings	10.6
Calories per diem ingested...	517 6	Calories per diem ingested	619.5
Calories per kilo. weight per diem ingested	90.5	Calories per kilo. weight per diem ingested	103.7
Gain in wt. in grms. per diem	45.	Gain in wt. in grms. per diem	73.75

There was no apparent difference in the infant's condition in the two observations. He ate, slept and digested about the same. In the interval between the first and second observations the urine was not examined, but as has been stated, at the beginning of the second observation a pyelitis was found. A little less urine was passed during the second observation than during the first, but the nitrogen excretion was not interfered with. The proportion of urine nitrogen to that of the food was about the same in both observations. In October, the nitrogen excreted in the urine was equivalent to 71.5 per cent. of the nitrogen in the food, and, in November, it was equivalent to 72.95 per cent. of the food nitrogen. So far as the absorption of fat in the two observations was concerned, it was evidently influenced by something besides the percentage of fat in the food. The second observation was as near a control of the first as it was possible to make it. The only difference was 125 c.c. more food each day, without any appreciable difference in its composition. The variation in the fat absorption without any discoverable reason, affords an instance of the impossibility of drawing accurate conclusions from a limited number of observations, even when the observations are very carefully carried through.

The heats of combustion of the total quantity of food taken in the October and in the November observations were accurately determined by means of a bomb-calorimeter. Table 8 gives an approximate estimation of the distribution of calories in the component parts of the food for a single day in each of the two observations. The factor 6.33 was used to convert the nitrogen into its equivalent of proteid. This is somewhat inaccurate because part of the proteid was present in a different form in the barley jelly. The results are sufficiently accurate for a rough comparison, which is all that is intended. The calories due to carbohydrate are estimated by difference.

TABLE—8.

October.	Calories each day.	Approximate wt. in grams.	November.	Calories each day.	Approximate wt. in grams.
Proteid.....	110 7	27.	Proteid.....	120.2	29.3
Fat ...	242.7	26.1	Fat	278.7	30.
Carbohydrate.	198.2	48.3	Carbohydrate.	231.2	56.4
Total	551.6		Total	630.1	
90.5 Calories per kilo each day.			103.7 Calories per kilo each day.		

VARIATIONS IN WEIGHT.

Conclusions derived from a consideration of the variations in weight during a metabolism observation of a few days' duration, are valueless unless the metabolism observation includes a respiration experiment. Without this, it is impossible to say to what a gain or loss of weight is due. In some cases, changes in weight are due to variations in the contents of the bladder and intestines at the beginning and at the end of the observation; in some cases water is retained in the organism. It has been shown by Rubner,[4] Freund[5] and others[6] that considerable quantities of nitrogen may be retained in the organism associated with but slight gain in weight or even with a loss in weight. The proteid gain in weight in such a case is balanced by a loss of fat tissue. Until these facts were appreciated great importance was attached to variations in weight during an observation and many valueless conclusions resulted. Any gain in weight associated with nitrogen retention was ascribed to the formation of new tissue. Table 9 furnishes some interesting information. It will be seen that there was a gradual gain in weight during three and one-half months from 5490 grams to 7220 grams. During this period on several occasions there occurred marked daily variations in weight. These sudden changes could not always be explained by the quantity or character of the food nor by the condition of the digestion. A probable explanation is that variations in the contents of the bladder and intestines caused it.

After the first metabolism observation in October, a night feeding was omitted, and the weight fell; but later, when the night feeding was resumed and in addition the twenty-four hour quantity of food was in-

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[4] M. Rubner u. O. Heubner: Die natürlichen ernährung eines Säuglings. Zeits. f. Biologie, vol. xxxvi. 1898. Die Künstliche Ernährung eines normal u. ein Atrophischen Säuglings Zeits. f. Biologie, vol. xxxviii, 1899.

[5] W. Freund: Chlor und Stickstoff im Säuglingsorganismus, Jahr. f. Kinderheilkunde, vol. xlviii, 1898.

[6] The following list comprises other important articles which I have consulted:

O. Huebner: Gatrachtungen u. Stoff und Kraftwechsel der Säuglings, etc. Berl. klin. Wochft., 1899.

W. Camerer: Der Stoffwechsel des Kindes, 1896.

A. Wassermann: Ueber Biologische Mehrleistung des organismus bei der Künstlichen Ernährung von Säuglingen, etc. Deuts. med. Wochft., vol. xxix, 1903.

Tsuboi: Ueber Stickstoffausscheidung aus dem Darm. Zeits. f. Biologie, vol. xxxv, 1897.

TABLE 9.—WEIGHT AND FOOD CHART OF INFANT.

Date.		Weight in Grams.	Qua'ty. of Food 24 hrs.	Character of Food.	Dejections.
Oct.	4	5490	850 c.c.	Equal parts of whole milk and barley jelly, peptonised.	Always some casein lumps; oftentimes offensive odor; some mucus; average number 2 to 4 daily.
"	5	5450	920 "		
"	6	5370	1050 "		
"	7	5300	1050 "		
"	8	5260	1260 "		
"	9	5450	1260 "		
"	10	5420	1260 "		
"	11	5410	1400 "		
"	12	5520	1400 "		
"	13	5520	1400 "		
"	14	5600	1400 "		
"	15	5620	1400 "		
"	16	5680	1400 "		
"	17	. .	1400 "		
"	18	. .	1400 "		
"	19	. .	1400 "		
"	20	. .	1400 "		
"	21	. .	1400 "		
"	22	. .	1400 "		
"	23	. .	1400 "		
"	24	. .	1400 "		
"	25	. .	1400 "		
"	26	.	1400 "		
"	27	5955	1400 "	Metabolism obser-on.	
"	28	. .	1400 "		
"	29	. .	1400 "		
"	30		1400 "		
"	31	6135	1400 "		
Nov.	1	.	1400 "		
"	2	. .	1400 "		
"	3	5900	1200 "		
"	4	5700	1240 "		
"	5	5680	1320 "		
"	6	5750	1320 "		
"	7	5740	1320 "		
"	8	5740	1320 "		
"	9	5710	1100 "		
"	10	5650	1540 "		
"	11	. .	1540 "		
"	12		1540 "		
"	13	5825	1540 "	Metabolism observation.	
"	14	. .	1540 "		
"	15	. .	1540 "		
"	16		1540 "		
"	17	6120	1540 "		
"	18	5950	1540 "		
"	19	5740	1540 "		
"	20	5710	1540 "		
"	21	5670	1540 "		
"	22	5890	1540 "		
"	23	5820	1540 "		
"	24	5900	1540 "	Whole milk ¾.	
"	25	. .	1540 "	Barley jelly ¼.	
"	26	5870	1540 "		
"	27	5950	1540 "	Pepsin omitted.	
"	28	6030	1540 "		
"	29	5760	1540 "		
"	30	5820	1540 "		
Dec.	1	5750	1540 "		
"	2	5980	1540 "		
"	3	6130	1540 "		
"	4	6130	1540 "		
"	5	6260	1540 "		
"	6	6310	1540 "		
"	7	6370	1540 "		
"	8	6370	1540 "		
"	9	. .	1540 "		
"	10	. .	1540 "		
"	11	. .	1540 "		
"	12	. .	1540 "		
"	13	. .	1540 "		
"	14	. .	1540 "		
"	15	. .	1540 "		
"	16	. .	1540 "		
"	17	. .	1540 "		
"	18	6185	1540 "	Did not take food well for several days preceding this weight.	
"	19	. .	1540 "		
"	20	. .	1540 "		
"	21	. .	1540 "		
"	22	. .	1540 "		
"	23	6495	1540 "		
"	24	6430	1540 "		
"	25	6390	1540 "		
"	26	6410	1540 "		
"	27	6350	1540 "		
"	28	6440	1540 "		
"	29	6360	1540 "		
"	30	6470	1540 "		
"	31	6510	1540 "		
Jan.	1	6370	1540 "		
"	2	6590	1540 "		
"	3	6540	1540 "		
"	4	6610	1540 "	. . . .	
"	5	6630	1549 "	Broth and beef juice; and bread added to his diet.	4 to 7 dejections daily; same character viz; offensive and contained mucus.
"	6	6730	1540 "		
"	7	6820	1540 "		
"	8	6700	1540 "		
"	9	6910	1540 "		
"	10	6890	1540 "		
"	11	7020	1540 "		
"	12	6940	1540 "		
"	13	7110	1540 "		
"	14	7110	1540 "		
"	15	7050	1540 "		
"	16	7110	1540 "		
"	17	7190	1540 "		
"	18	7060	1540 "		
"	19	7230	1540 "		
"	20	7150	1540 "		
"	21	7260	1540 "		
"	22	7220	1540 "		
			1540 "		

creased, the weight remained practically the same as during the first observation. The day following the second observation in November, the infant lost 170 grams, although the food remained unchanged. This illustrates what has been said about the valuelessness of conclusions drawn from partial metabolism observations. In all probability the marked apparent gain in weight during each observation was due to something besides the formation of new tissue and fat. Following the second observation the weight remained about the same for two weeks, although the food was strengthened. During the last month additions were made to the diet, namely beef juice, broth and bread, and the gain in weight, whether due to this or not, was steadier and more rapid than at any time previous.

UNWARRANTABLE CONCLUSIONS.

In this connection I wish to add a few words about the tendency to draw conclusions based on uncertain evidence. This is especially evident in metabolism work. It would seem as if the obscurity of the whole subject would restrain any impulse to express one's self positively about causes and results, but to judge from the writings on the subject, it would appear to inspire confidence and an inclination to formulate laws. As has been pointed out, there are many possible sources of error in the work, some of which can not be avoided. In addition to this, the number of observations on infants is limited. The power of absorption and of utilization of the food must vary in different atrophic infants, depending in part on the degree of disturbance present, and especially on the character of the food. It is reasonable to suppose that it varies at different periods in the same infant. Furthermore, with the exception of Rubner's investigations, all the metabolism observations on infants are incomplete, that is, they consist solely of determinations of the fat and nitrogen absorption and excretion. A formation or destruction of tissue can not be determined from such observations. Metabolism observations, however, more especially the complete ones, have established a number of important facts connected with the metabolism of infantile atrophy. They have shown a diminished power of absorption by the intestines for cow's milk and other artificial foods, but they do not explain the cause of this failure to absorb. They also have shown that a greater expenditure of energy is required to metabolize these artificial foods than is required to metabolize human breast milk. Furthermore, enough has been done in this direction to show that the cause or causes of infantile atrophy can not be discovered by metabolism investigations. This must be left to other lines of research.

This work was done in the Pharmacological Laboratory of the Massachusetts General Hospital in 1902-3 and 1903-4. I wish to thank Dr. Franz Pfaff, director of the laboratory, and his assistant, Dr. Vejux-Tyrode, for valuable advice and assistance. I am especially indebted to Mr. F. H. McCrudden for careful instruction in the methods which are employed in metabolism work.

Radium of Little Use in Skin Diseases.—Danlos concludes from his personal observations (*Bull. et Memoires de la Soc. Med. das Hôpitaux*) that there are only three skin disorders in which radium has a real value—tuberculous lupus, pearly epithelioma and vascular nevus. Even in these its therapeutic value is a limited one. We have other older and more effective remedies, the *x*-ray for example. We may admit for it some advantages for use in the larynx and nasal fossæ, especially if its cost is reduced.

THE PATHOLOGIC EFFECTS OF ALCOHOL ON RABBITS.

AN EXPERIMENTAL STUDY.*

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VARIETY OF ALCOHOL USED AND METHOD OF FEEDING THE ANIMALS.

One hundred and twenty rabbits were utilized in the experiments with alcohol. Most of these animals were fed on absolute alcohol diluted; some on an inferior form of whisky known as "Calumet," 70, proof 33.6 per cent. In order to be certain of the exact dosage, the alcohol and whisky were introduced into the stomach through a catheter. The catheter is easily introduced into the stomach of a rabbit; the animal is placed flat on its back and strapped to an animal board; the ears are then firmly grasped, the mouth opened by means of a large forceps and the tube forced into the stomach. By means of a funnel attached to the end of the catheter, the liquid quickly enters the stomach; with practice the introduction of the tube becomes a matter of great ease and one need not fear in any way injuring the esophagus or entering the trachea and thus producing an aspiration pneumonia. After the practice of a month all complications were avoided and in none of the autopsies could any injury be discovered in the esophagus or was there any evidence of an aspiration pneumonia.

TIME TAKEN TO PRODUCE INTOXICATION AND RECOVERY.

In from 5 to 15 minutes after feeding, the animal shows signs of intoxication, the movements become sluggish and unsteady and when urged on he is unable to move. This intoxication passes on into a complete stupor from which the animal cannot be aroused. It awakens in from 3 to 5 hours and appears well on the following day. From an average drawn from all the histories, it can be stated that intoxication begins 14 minutes after feeding, complete intoxication 32 minutes after feeding, and that the intoxication disappears in 3 hours and 5 minutes from the time of feeding. These conditions vary much with the dosage, weight of the animals and apparently individual peculiarities (species). In general it can be stated that the quicker the intoxication comes on the more rapidly does the influence of the alcohol pass off.

QUANTITY OF ALCOHOL ADMINISTERED.

The quantity of alcohol taken by the rabbits varied very much according to the size and strength of the animal, and according to the duration of its life. On account of a sudden loss of weight or apparent illness the doses at times had to be discontinued for days until the animal was again in a normal condition. The daily doses varied between 5 and 8 c.c. of absolute alcohol diluted in from 15 to 30 c.c. of water, or 10 to 20 c.c. of whisky diluted in 10 or 20 c.c. of water. The average of the weekly doses in various rabbits varied very much; thus, while one rabbit consumed a weekly average dose of 40 c.c. of absolute alcohol, another consumed 48 c.c.; and, again, while another rabbit consumed a weekly average dose of 96 c.c. of whisky, another consumed 110 c.c.

The smallest weekly dose of alcohol taken was 20 c.c., the largest 50 c.c.; the smallest weekly dose of whisky 94 c.c., the largest 136 c.c. Of greater interest is the total quantity of alcohol and whisky taken by the animals. The animal that lived longest consumed over 10 liters of absolute alcohol, another rabbit consumed 7.5 liters, while another consumed over 18 liters of whisky.

VARIATIONS IN WEIGHT.

Most animals gain in weight for a time at first; the weight then remains stationary and there is a rapid fall in weight when the animal is about to die. Rapid emaciation always signifies approaching death. When there is a loss in weight during the first month one can predict an early death. The daily variations in weight during the first month show an average gain of from 5 to 8 grams; during the second month from 10 to 20 grams; during the remaining months there is practically a stationary weight, and during the last month a marked fall averaging from 10 to 20 grams.

The monthly variations in weight taken as an average from all animals was 12.5 grams.

VARIATIONS IN TEMPERATURE.

The temperature falls from 0.1 to 0.5 degrees when the intoxication begins and from 1 to 1.5 degrees when complete intoxication sets in; then gradually rises and is normal the next day.

From the average of all the rabbits the normal temperature is 104 F.; the average temperature at the beginning of intoxication, 103.8; in complete intoxication, 102.9; when the temperature falls below 102 F. the animal dies from the immediate effect of the alcohol without regaining consciousness.

BLOOD EXAMINATIONS.

A large number of blood examinations were made; these examinations consisted in the counting of the number of red and white blood cells by means of the Zeiss-Thoma apparatus; estimation of the hemoglobin by means of the Fleischel apparatus; also staining dried spreads with Ehrlich's triple stain. It was found that while the number of red and white cells are not diminished in any case except when the animal was about to die the percentage of hemoglobin sinks rapidly after the first week and gradually runs to half its normal.

The number of red blood corpuscles in a normal rabbit varies between five and six millions in a c.mm. The number of leucocytes varies between 5,800 and 14,000. the average being 10,000. This average was found to be maintained under the influence of alcohol until the last month of feeding, when the red cells fell as low as two million and the white cells as low as 5,100. The percentage of hemoglobin in the normal rabbit before feeding varies between 80 and 90 per cent. during the first month of feeding with alcohol the average fall is to 75 per cent., during the middle month of feeding 62 per cent., and during the last month of feeding 45 per cent.

The blood spreads show in the rabbit under normal conditions the following relations: Small lymphocytes. 45 per cent.; large mononuclear, 15 per cent.; eosinophiles, 32 per cent.; undetermined, 8 per cent.

This relation is pretty nearly maintained during the feeding of the animal with alcohol except during the last month of its life. when the following percentage is found: Small lymphocytes, 48 per cent.; large mononuclear, 10 per cent.; eosinophiles, 40 per cent.; undetermined, 2 per cent.

The eosinophiles, which to a great degree represent the polymorphonuclear cells in the human being, being largely increased in number.

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* From the Pathological Laboratory of the Johns Hopkins University and Hospital.

EFFECT OF ALCOHOL ON THE GASTRIC CONTENTS.

The gastric contents were examined in a large proportion of animals; free hydrochloric acid, which was present at first, gradually became lessened in quantity and often disappeared. At the beginning of feeding with alcohol the average percentage of free hydrochloric acid equaled 0.345 per cent.; this was frequently lessened in the course of one month to 0.213 per cent., and in the course of two months to .003 per cent.

EFFECT OF ALCOHOL ON THE URINE.

The urine was frequently examined in a certain number of animals. At the beginning of treatment, neither albumin nor casts could be found in any urine. Of the specimens of urine examined in 21 animals, 7 showed constantly marked traces of albumin after two months' treatment with alcohol and two slight traces, while casts were found in 5 instances. Specimens of urine from 3 other animals showed occasional traces of albumin. Of the 5 cases in which albumin and casts were found, kidney lesions were detected after death, as will be shown in the pathologic report. It must be stated, however, that notwithstanding the absence of albumin and casts in certain other cases, changes in the kidneys were detected at the autopsy.

EFFECT OF ALCOHOL ON FEMALE RABBITS.

There can be no question but that alcohol has a marked tendency to produce abortion in rabbits. In a series of 38 pregnant rabbits, 20 died of septicemia due to abortion. The organism of rabbit septicemia was found in all cases. The animals had been entirely isolated from each other. Of the remainder, 9 had constant abortions, none of the young being born at full term. Three had their young normally, but these all died in a few days after birth.

EFFECT OF ALCOHOL ON DURATION OF LIFE.

While the tolerance of any given animal could not be positively foretold, young rabbits, pregnant females, and those weighing under one thousand grams were the most susceptible. Certain rabbits were found to be so resistant that they seemed capable of tolerating daily intoxicating doses of alcohol for an indefinite period. Thus, one rabbit was given alcohol for over four years; others were fed with alcohol for three and a half and for three years. These animals had the best of care and were kept under excellent sanitary conditions. On the other hand, some of the rabbits died from acute intoxication after a few doses, and the majority succumbed after shorter or longer periods of time, with gradual loss of weight and exhaustion. If especial care was taken to lessen or to intermit the dose of alcohol when the animal began to lose weight, it was found possible later to increase the dose and to keep a considerable number of the rabbits alive for an indefinite period.

CAUSES OF DEATH AND PATHOLOGIC LESIONS.

The causes of death in the animals varied; many died during the first days or months of feeding of acute intoxication, others died in convulsions, still others of progressive emaciation or septicemia, while one animal died directly from dropsy due to a marked cirrhosis of the liver.

Complete autopsies were made on all animals; specimens were taken from all organs and hardened in absolute alcohol, Müller's fluid and Zenker's solution, and side by side with each specimen were placed the specimens from a normal rabbit; so that a comparison of sections after cutting could easily be made.

In order to simplify the work, the lesions found in the various organs will be taken up separately.

Heart.—The heart muscle showed in the great proportion of those rabbits which died a marked degree of fatty infiltration which was absent in the rabbits which were killed after cessation of the use of alcohol, showing that the fatty degeneration is not a permanent condition even though it be produced by the action of the alcohol.

This fat was diffuse and finely granular. As is well known, rabbits are apt to develop fatty degeneration of the heart muscle when kept in captivity; but it was found that rabbits fed on alcohol develop this condition of the heart much more markedly than the control animals not fed on alcohol. In order to settle this matter more definitely, 10 rabbits were kept in the open air; five of these were fed on alcohol; in 4 of the 5, marked fatty degeneration of the heart muscle developed in from two to three months, while the heart muscles of those not fed on alcohol remained perfectly normal. There can be no question but that in most animals fed on alcohol, fatty degeneration of the heart muscle is often a very frequent early manifestation. After the third or fourth month of feeding with alcohol, a sclerotic or atheromatous patch was now and then found on the inner surface of the aorta or of other blood vessels. The aorta showed here and there small yellowish areas which on microscopic examination revealed a connective tissue thickening in the subendothelial layer of the vessel. The muscular coat showed occasionally a rather marked fatty degeneration as indicated by a deposit of fatty granules in this layer. The same changes were occasionally found in the smaller vessels, though not usually, so marked. These lesions were present, however, too inconstantly to be attributed with any certainty to the action of alcohol, especially as similar lesions are occasionally found in animals which have not received alcohol.

Liver.—The liver, in a few instances, showed a rather coarse lobular aspect; the edge showing a notched appearance as if notched along the interlobular lines. On microscopic examination there appeared in these instances a marked deposition of fine and coarse oil drops in the liver cells; quite diffuse and abundant; bands of connective tissue were found running along the interlobular lines, containing occasionally an increase in lymphoid cells. These bands were richly infiltrated with fine molecular fat. Similar fine fatty granules were in the hepatic cells, especially along their borders, apparently in the capillary walls. There were some oval pigmented cells at times in the bands of interlobular tissue; there was present occasionally a monolobular cirrhosis. Necrosis of the liver cells occasionally occurred, either singly or in groups. At times the blood vessels were found thickened in their tunica adventitia. In many instances, the liver was perfectly normal; in four instances, the liver was found somewhat cirrhotic, and in one instance markedly so, abdominal dropsy accompanying the cirrhosis.

Genuine cirrhosis has not been satisfactorily reproduced in the experiments which lends support, as Welch points out, to the opinion held by many that in human beings alcohol acts only indirectly in leading to cirrhosis of the liver, or that special predisposing or associated

SYNOPSIS OF RABBIT EXPERIMENTS.

No.	A—Adult. Y—Young.	Date of Beginning of Experiments.	Wt. at Beginning in Grams.	Quantity of Alcohol Fed Per Diem in C.C.	Total Quantity of Alcohol Consumed in C. C.	Date of Death.	Wt. at Death in Grams.	Clinical Cause of Death.	Principal Lesions Formed at Death.
1	A	12/7/1893	1510	5-8 abso. alcohol	225 abso. alcohol	1/30/1894	1480	Convulsions	Fatty heart, kidneys and liver.
2	A	12/7/1893	1720	5-8 abso. alcohol	364 abso. alcohol	3/4/1894	1705	Convulsions . . .	Fatty heart, kidneys and liver.
3	A	12/7/1893	1635	5-8 abso. alcohol	372 abso. alcohol	3/8/1894	1516	Progressive emaciation	Fatty heart, kidneys and liver.
4	Y	12/14/1893	982	5-8 abso. alcohol	40 abso. alcohol	12/30/1893	825	Acute intoxication. . . .	Fatty heart, kidneys and liver.
5	A	12/14/1893	2390	5-8 abso. alcohol	105 abso. alcohol	1/13/1898	2380	Killed.	Liver cirrhotic; kidneys fatty.
6	A	12/19/1893	1450	5-8 abso. alcohol	2392 abso. alcohol	12/20/1894	1420	Convulsions.	Fatty heart, kidneys and liver.
7	A	12/25/1893	1840	0-20 whisky.	3852 whisky . . .	10/20/1894	1832	Convulsions	Fatty heart, kidneys and liver.
8	A	12/26/1893	2510	10-20 whisky. . .	1878 whisky . . .	5/4/1894	2410	Emaciation.	Fatty heart, kidneys and liver.
9	A	12/29/1893	1780	10-20 whisky.	2021 whisky .	5/18/1894	1535	Progressive emaciation	Fatty heart, kidneys and liver.
10	A	12/30/1893	1920	5-8 abso. alcohol	1689 abso. alcohol	10/27/1894	2500	Ascites.	Cirrhotic liver, kidneys and liver.
11	A	2/16/1894	1830	3 abso. alcohol	69[illegible] abso. alcohol	10/16/1894	1810	Convulsions.	Fatty heart, kidneys and liver.
12	Y	2/16/1894	850	5 abso. alcohol	5 abso. alcohol	2/16/1894	840	Acute intoxication. . . .	Fatty heart, kidneys and liver.
13	Y	3/20/1894	875	5-8 abso. alcohol	3[illegible]0 abso. alcohol	5/21/1894	755	Progressive emaciation	Fatty heart (extreme), kidneys and liver.
14	Y	3/20/1894	910	5-8 abso. alcohol	290 abso. alcohol	5/11/1894	830	Progressive emaciation	Fatty heart, echinococcus cysts of entire lobe of liver.
15	A	4/12/1894	1695	5-8 abso. alcohol	2310 abso. alcohol	4/27/1895	1520	Abortion septicemia .	Fatty degeneration of heart and liver.
16	A	4/12/1894	2520	5-8 abso. alcohol	7884 abso. alcohol	1/13/1898	2513	Killed. . . .	Fatty liver, but heart not fatty.
17	Y	4/12/1894	875	5-8 abso. alcohol	144 abso. alcohol	5/24/1894	850	Progressive emaciation	Fatty heart (extreme).
18	Y	4/12/1894	940	5-8 abso. alcohol	152 abso. alcohol	5/16/1894	935	Convulsions	No lesions.
19	Y	4/25/1894	960	5-8 abso. alcohol	12 abso. alcohol	4/28/1894	945	Emaciation	Fatty heart, kidneys and liver.
20	Y	5/3/1894	895	5-8 abso. alcohol	83 abso. alcohol	5/17/1894	888	Acute intoxication. . . .	No lesions.
21	Y	5/3/1894	830	5-8 abso. alcohol	106 abso. alcohol	5/21/1894	840	Accidentally killed. . .	No lesions.
22	Y	5/3/1894	910	5-8 abso. alcohol	64 abso. alcohol	5/14/1894	890	Accidentally killed. . .	No lesions.
23	Y	5/21/1894	914	5-8 abso. alcohol	108 abso. alcohol	6/11/1894	900	Convulsions . .	Fatty heart, kidneys and liver.
24	Y	5/21/1894	980	5-8 abso. alcohol	104 abso. alcohol	6/14/1894	830	Acute intoxication. . . .	Fatty heart, kidneys and liver.
25	Y	5/21/1894	897	5-8 abso. alcohol	211 abso. alcohol	6/27/1894	864	Progressive emaciation	Fatty heart, kidneys and liver.
26	A	5/26/1894	2430	10-20 whisky.	10875 whisky	2/10/1897	2340	Abortion septicemia .	Fatty heart, kidneys and liver; ulcer of stomach.
27	Y	5/31/1894	880	5-8 abso. alcohol	84 abso. alcohol	6/14/1894	840	Convulsions	Fatty heart, kidneys and liver.
28	Y	5/31/1884	950	5-8 abso. alcohol	88 abso. alcohol	6/20/1894	920	Progressive emaciation	Fatty heart, kidneys and liver.
29	Y	6/4/1894	927	10-20 whisky. . .	103 whisky . .	6/22/1894	918	Progressive emaciation	Fatty heart, kidneys and liver.
30	A	6/4/1894	2180	10-20 whisky. . .	14869 whisky . . .	6/10/1897	2015	Abortion septicemia....	Fatty degeneration of heart, kidneys and liver.
31	A	6/26/1894	2040	10-20 whisky . .	10 whisky . .	6/27/1894	040	Accidentally killed. . .	No lesions.
32	A	6/28/1894	2414	5-8 abso. alcohol	6595 abso. alcohol	6/13/1898	2420	Killed.	Fatty cirrhotic liver, heart not fatty; ulcer of sto'ach.
33	A	6/28/1894	2510	10-20 whisky	18751 whisky	6/14/1898	2522	Killed.	Liver parasites. Kidneys fatty; heart normal.
34	Y	7/5/1894	922	5-8 abso. alcohol	83 abso. alcohol	7/17/1894	891	Emaciation.	Fatty heart, kidneys and liver.
35	Y	7/5/1894	881	5-8 abso. alcohol	94 abso. alcohol	7/22/1894	822	Emaciation.	Fatty heart, kidneys and liver.
36	Y	7/5/1894	938	5-8 abso. alcohol	11 abso. alcohol	7/8/1894	935	Convulsions.	No lesions.
37	A	7/5/1894	2520	5-8 abso. alcohol	25 abso. alcohol	1/10/1897	2510	Abortion septicemia....	Fatty degeneration of heart, kidneys and liver.
38	A	7/5/1894	2180	5-8 abso. alcohol	5894 abso. alcohol	1/14/1897	2020	Abortion septicemia....	Fatty degeneration of heart, kidneys and liver.
39	A	7/5/1894	1540	5-8 abso. alcohol	864 abso. alcohol	12/5/1894	1100	Convulsions. . .	Fatty heart, kidneys and liver.
40	A	7/5/1894	2530	5-8 abso. alcohol	5120 abso. alcohol	3/20/1897	2505	Abortion septicemia....	Fatty heart, kidneys and liver.
41	A	7/5/1894	1890	5-8 abso. alcohol	1032 abso. alcohol	2/4/1895	1420	Convulsions.	Fatty heart, cicatrix of ulcer of stomach.
42	A	7/5/1894	1910	5-8 abso. alcohol	1171 abso. alcohol	2/10/1895	1640	Convulsions	Fatty heart.
43	A	8/5/1894	2180	5-8 abso. alcohol	2540 abso. alcohol	1/14/1898	2165	Killed.	Heart not fatty; cicatrix of ulcer of stomach.
44	A	8/10/1894	2215	5-8 abso. alcohol	8554 abso. alcohol	9/12/1895	2135	Abortion septicemia....	Fatty heart, liver and kidneys.
45	Y	8/14/1894	080	0-20 whisky. . .	2189 whisky . .	2/5/1895	916	Progressive emaciation.	Fatty heart, liver and kidneys.
46	A	8/14/1894	2520	10-20 whisky. . .	12510 whisky . .	3/3/1897	2505	Convulsions	Fatty heart, liver and kidneys.
47	Y	8/14/1894	935	5-8 abso. alcohol	28 abso. alcohol	7/20/1894	920	Convulsions	Fatty heart, liver and kidneys.
48	Y	8/16/1894	845	5-8 abso. alcohol	72 abso. alcohol	7/29/1894	835	Progressive emaciation.	Fatty heart, liver and kidneys.
49	A	8/16/1894	2120	5-8 abso. alcohol	6874 abso. alcohol	1/14/1898	2159	Killed.	Liver slightly cirrhotic; kidneys fatty; heart normal.
50	A	8/20/1894	1742	5-8 abso. alcohol	2193 abso. alcohol	7/5/1895	1729	Abortion septicemia . .	F'ty heart, liver, kidneys; cicatrix of ulcer of sto'ch.
51	A	8/20/1894	1934	10-20 whisky.	7483 whisky . .	4/10/1896	1922	Convulsions	Fatty heart, liver and kidneys.
52	Y	8/20/1894	2550	10-20 whisky. . .	3842 whisky	5/21/1895	2501	Progressive emaciation.	No lesions except very slight fatty heart.
53	A	8/24/1894	875	5-8 abso. alcohol	10 abso. alcohol	8/27/1894	875	Acute intoxication .	No lesions found.
54	A	8/25/1894	2194	5-8 abso. alcohol	1029 abso. alcohol	3/5/1895	2189	Abortion septicemia....	Fatty heart and kidneys.
55	A	8/26/1894	1872	5-8 abso. alcohol	7182 abso. alcohol	1/14/1898	1885	Killed.	No lesions.
56	Y	8/26/1894	927	10-20 whisky	65 whisky	9/2/1894	904	Progressive emaciation.	Fatty heart, liver and kidneys.
57	Y	8/27/1894	981	5-8 abso. alcohol	725 abso. alcohol	1/10/1895	927	Progressive emaciation.	Fatty heart and kidneys.
58	Y	8/27/1894	861	5-8 abso. alcohol	5 abso. alcohol	8/27/1894	862	Convulsions. . . .	No lesions.
59	A	8/28/1894	2080	5-8 abso. alcohol	4974 abso. alcohol	1/10/1897	2088	Abortion septicemia....	Fatty heart, kidneys and liver.
60	A	8/28/1891	1945	10-20 whisky.	8241 whisky . .	9/14/1896	2540	Convulsions.	No lesions.
61	A	8/29/1894	1872	0-20 whisky. . .	18154 whisky . .	1/14/1898	1891	Killed.	No lesions.
62	Y	9/1/1894	945	5-8 abso. alcohol	824 abso. alcohol	2/2/1895	92	Progressive emaciation.	Fatty heart, kidney and liver.
63	A	9/2/1894	2478	5-8 abso. alcohol	2127 abso. alcohol	10/10/1896	2182	Abortion septicemia....	Fatty heart, kidney and liver.
64	A	9/5/1894	2048	5-8 abso. alcohol	2254 abso. alcohol	11/5/1895	2032	Acute intoxication. . . .	No lesions found.
65	Y	9/8/1894	874	5-8 abso. alcohol	10 abso. alcohol	9/11/1894	862	Convulsions	No lesions found.
66	Y	9/8/1894	897	5-8 abso. alcohol	710 abso. alcohol	12/30/1894	816	Convulsions . .	Fatty heart, liver and kidneys.
67	Y	9/10/1894	952	5-8 abso. alcohol	732 abso. alcohol	1/5/1895	924	Progressive emaciation.	Fatty heart, liver and kidneys.
68	A	9/20/1894	1679	5-8 abso. alcohol	6875 abso. alcohol	12/10/1897	1652	Progressive emaciation.	Fatty heart, liver and kidneys.
69	A	9/20/1894	1846	5-8 abso. alcohol	3420 abso. alcohol	3/3/1896	1837	Convulsions . .	No lesions.
70	A	9/20/1894	2092	5-8 abso. alcohol	4810 abso. alcohol	12/21/1896	2046	Abortion septicemia....	Fatty heart and kidneys.
71	A	9/21/1894	1872	10-20 whisky. . .	2248 whisky . . .	3/13/1895	1862	No cause . . .	No lesions.
72	Y	9/24/1894	1014	10-20 whisky. . .	1241 whisky . . .	1/7/1895	956	Progressive emaciation	Fatty heart; cicatrix of ulcer of stomach.
73	A	9/25/1894	1827	10-20 whisky	1684 whisky	11/4/1897	1803	Abortion septicemia	Fatty heart and kidneys.
74	A	9/27/1894	1894	5-8 abso. alcohol	52 abso. alcohol	10/5/1894	1802	Progressive emaciation	Fatty heart and kidneys.
75	Y	9/27/1894	742	5-8 abso. alcohol	10 abso. alcohol	9/29/1894	736	No cause	No lesions.
76	Y	9/29/1894	854	5-8 abso. alcohol	572 abso. alcohol	1/8/1895	839	Convulsions.	No lesions.
77	A	9/29/1894	1874	5-8 abso. alcohol	5027 abso. alcohol	6/12/1897	1865	Convulsions.	No lesions.
78	A	10/2/1894	2122	5-8 abso. alcohol	678 abso. alcohol	2/4/1895	2110	Abortion septicemia ...	No lesions.
79	A	10/3/1894	2389	10-20 whisky. . .	6540 whisky . . .	5/5/1896	2354	Acute intoxication. . .	Fatty heart, kidneys and liver.
80	A	10/5/1894	2542	10-20 whisky	1625 whisky . .	2/10/1895	2536	Convulsions	No lesions.
81	A	11/12/1894	2224	5-8 abso. alcohol	897 abso. alcohol	4/18/1896	2213	Abortion septicemia....	No lesions.
82	A	11/12/1894	1652	5-8 abso. alcohol	4328 abso. alcohol	12/5/1896	1644	Acute intoxication. .	Fatty heart, liver and kidneys.
83	A	11/12/1894	1984	5-8 abso. alcohol	2557 abso. alcohol	12/10/1895	1961	No cause	No lesions.
84	A	11/12/1894	2124	5-8 abso. alcohol	1285 abso. alcohol	7/2/1895	2112	Acute Intoxication. . . .	No lesions.
85	A	11/14/1894	1729	5-8 abso. alcohol	1924 abso. alcohol	10/22/1895	1704	Convulsions.	Fatty heart, kidneys and liver.
86	A	11/14/1894	1684	5-8 abso. alcohol	3688 abso. alcohol	8/18/1896	1652	Abortion septicemia....	Fatty heart and kidneys.
87	Y	11/20/1894	752	10-20 whisky. . .	10 whisky . . .	11/22/1894	720	No cause	No lesions.
88	A	11/21/1894	2127	10-20 whisky. . .	1224 whisky . . .	5/11/1897	2116	Acute intoxication. . . .	Fatty heart.
89	A	11/21/1894	2432	10-20 whisky	8420 whisky	9/2/1896	2416	Abortion septicemia . .	Fatty heart, kidneys and liver.
90	A	11/21/1894	1780	5-8 abso. alcohol	3572 abso. alcohol	10/4/1897	742	Convulsions	No lesions.
91	Y	12/5/1894	725	5-8 abso. alcohol	5 abso. alcohol	12/6/1894	720	No cause	No lesions.
92	Y	12/12/1894	842	5-8 abso. alcohol	1854 abso. alcohol	9/4/1895	82	Acute intoxication.	Fatty heart, kidneys and liver.
93	A	12/12/1894	2[illegible]96	5-8 abso. alcohol	5[illegible]55 abso. alcohol	3/10/1897	2115	Progressive emaciation	Fatty heart, kidneys and liver.
94	A	12/20/1894	1853	5-8 abso. alcohol	5[illegible]82 abso. alcohol	7/3/1897	1824	Abortion septicemia . .	Fatty heart and kidneys.
95	A	12/22/1894	2046	5-8 abso. alcohol	68[illegible]7 abso. alcohol	1/14/1898	2058	Killed.	No lesions.
96	A	12/30/1894	1736	10-20 whisky	840 whisky .	3/5/1895	1716	Progressive emaciation	Fatty heart, kidneys and liver.
97	A	12/30/1894	1846	10-20 whisky.	9810 whisky	2/16/1897	1868	Convulsions.	Fatty heart, kidneys and liver.
98	A	1/3/1895	1957	5-8 abso. alcohol	7086 abso. alcohol	1/14/1898	1964	Killed.	Fatty and cirrhotic liver; fatty kidneys.
99	A	1/5/1895	2175	5-8 abso. alcohol	2983 abso. alcohol	8/19/1896	2155	Convulsions.	Fatty heart, liver and kidneys.
100	Y	1/5/1895	891	5-8 abso. alcohol	3818 abso. alcohol	5/10/1897	885	Convulsions.	No lesions.
101	A	1/5/1895	2532	5-8 abso. alcohol	4335 abso. alcohol	6/27/1897	2528	Acute intoxication. . .	Fatty heart, kidneys and liver.
102	A	1/5/1895	2329	10-20 whisky. . .	8537 whisky . .	11/24/1896	2320	Convulsions.	No lesions.
103	A	1/10/1895	2047	10-20 whisky. . .	12840 whisky . . .	1/18/1897	2024	Abortion septicemia .	Fatty heart, kidneys and liver.
104	A	1/10/1895	1922	10-20 whisky. . .	15590 whisky . . .	1/14/1898	1916	Killed	Heart not fatty, cirrhotic liver (slightly).

SYNOPSIS OF RABBIT EXPERIMENTS—Continued.

No.	A—Adult. Y—Young.	Date of Beginning of Experiments.	Wt. at Beginning in Grams.	Quantity of Alcohol Fed Per Diem in C.C.	Total Quantity of Alcohol Consumed in C.C.	Date of Death.	Wt. at Death in Grams.	Clinical Cause of Death.	Principal Lesions Formed at Death.
105	A	1/10/1895	2040	5-8 abso. alcohol	4154 abso. alcohol	4/15/1897	2032	Acute intoxication.. .	Fatty heart. liver and kidneys.
106	Y	1/14/1895	814	10-20 whisky.	225 whisky . . .	2/4/1895	789	Progressive emaciation	Fatty heart, liver and kidneys.
107	Y	1/14/1895	773	10 20 whisky. . .	2086 whisky	7/15/1895	725	Progressive emaciation	Fatty heart, liver and kidneys.
108	A	1/14/1895	2362	5 8 abso. alcohol	6740 abso. alcohol	1/4/1898	2355	Killed	No lesions.
109	A	1/21/1895	2374	5-8 abso. alcohol	4082 abso. alcohol	1/2/1897	2326	Acute intoxication.. . .	No lesions
110	A	1/21/1895	1986	5 8 abso. alcohol	3752 abso. alcohol	12/11/1897	1965	Acute intoxication. . .	Fatty heart. liver and kidneys.
111	A	2/3/1895	[illegible]	5-8 abso. alcohol	3016 abso. alcohol	10/13/1896	2527	Abortion septicemia . .	Fatty heart, liver and kidneys.
112	A	2/3/1895	[illegible]	10-20 whisky.	14925 abso. alcohol	1/15/1898	2034	Convulsions.	Fatty heart. liver and kidneys.
113	A	3/4/1895	[illegible]	5-8 abso alcohol	5517 abso. alcohol	1/14/1898	1872	Killed . .	Heart not fatty; kidneys fatty.
114	A	3/4/1895	1931	5 8 abso. alcohol	2029 abso. alcohol	7/5/1896	1924	Acute intoxication.. . .	No lesion.
115	A	3/4/1895	2043	5-8 abso. alcohol	2873 abso. alcohol	12/2 /1896	2031	Convulsions.	Fatty heart, liver and kidneys.
116	A	3/8/1895	832	5-8 abso. alcohol	5124 abso. alcohol	1/14/1898	1818	Killed	Heart not fatty.
117	A	5/7/1895	2322	5-8 abso. alcohol	3848 abso. alcohol	7/5/1897	2328	Convulsions.	No lesions.
118	A	5/15/1895	2245	5-8 abso. alcohol	2365 abso. alcohol	8/14/1896	2202	Progressive emaciation	Fatty heart. liver and kidneys.
119	A	6/4/1895	1794	5 8 abso. alcohol	4752 abso. alcohol	1/14/1898	782	Killed	Heart not fatty ; kidneys fatty.
120	A	7/20/1895	[illegible]	5-8 abso. alcohol	5 abso. alcohol	7/4/1895	1852	Acute intoxication.. . .	No lesions.

conditions must be present in addition to the action of the alcohol. This failure to produce cirrhosis of the liver experimentally by the use of alcohol can not be attributed in our series to the too short duration of the experiments.

Lungs.—The lungs showed nothing important; frequently in the act of dying edema set in.

Kidneys.—The kidneys showed, as a rule, fine fatty degeneration of the epithelium in the tubules of the boundary zone of the pyramids; also a small amount of deposit in the cortical tubules. Here and there the arteries of the kidneys stood out prominently and on section were found thickened in the tunica adventitia; in a few cases the changes in the glomeruli were marked, a considerable number of these having undergone atrophy. In the five instances in which albumin and casts were found in the urine, these changes in the kidneys were marked. A number of the rabbits showed no changes in the kidneys whatever; an actual chronic interstitial nephritis was never produced.

Stomach and Intestines.—The examination of the stomach showed a round ulcer in two animals and cicatrices of healed ulcers in four. The ulcers were sharply defined, 2 cm. and 3 cm. in diameter, with thickened edges and base—the base being defined by the muscularis. Most frequently the mucus membrane was congested and there was an increase in mucus.

In many instances, the cells of the gastric tubules were cloudy and infiltrated with fatty granules, the interglandular tissue was infiltrated with small round cells and an increase in connective tissue was occasionally observed. There was evidence that some of these alterations, especially the more profound ones, were attributable sometimes to mechanical injuries inflicted by the stomach tube. In many other instances the stomach was perfectly normal. As a rule no pathologic changes were present in the intestine.

Generative Organs.—The testicles frequently showed a diffuse fine deposition of fatty granules scattered in the epithelium of the tubes and interstitial cells. The uterus revealed nothing abnormal except in those cases in which there had been abortions and in which the rabbit had died of septicemia. The uterus, in these instances, was enlarged, and the mucus membrane much infiltrated with leucocytes; the blood vessels were engorged throughout; in every instance the organism of rabbit septicemia was recovered.

Nervous System.—The cortex of the brains of a number of the rabbits was studied by Berkley.[1] The following is taken from his work, "Pathologic Histology of the Rabbit's Cortex in Chronic Alcoholism as Seen with Nissl's Stain," and "Pathologic Histology of the Rabbit's Cortex in Chronic Alcoholism as Seen with the Silver Phospho-Molybdate Stain:"

The smallest arteries have an altogether different appearance from the control preparations. The walls of many of them are irregularly shrunken, at intervals almost botryoidal in appearance; and the nuclei of the vascular walls, while not increased in numbers, are swollen, and project considerably into the lumen of the canal. The perivascular space is larger than in the control preparations, and the hyaline membrane separating it from the cerebral substance is a little more definite than normal. On transverse section the walls of the vessel are a little thickened, the lumen narrowed, the change affecting the intima more than the media. Very few of the arteries show any very pronounced changes. Four or five miliary hemorrhages into the sheaths of small vessels were noted in the several sections, all near the pial margin. Altogether no very definite lesions could be determined in the blood-vessels. Alterations of the nuclei chiefly in the disposition, swelling, and irregularity of contour of the nucleolar chromophilic particles are found.

After all possible allowances have been made for artefacts and for physiologic variations from the normal, as well as for inequalities in the staining process, there remain a large number of cells in our alcoholic brains that are distinctly abnormal. The principal lesions in them, are a distinct diminution in size, a shrinkage of a vast majority of all the cortical cells, particularly in the outspread of the branches, certain swellings of the dendritic processes with disappearance of the gemmulæ, and roughening of the stronger processes, and to a less extent of the cell body. A careful comparison of a control preparation, and one from an alcoholic rabbit's brain, will show the following differences: The cell bodies and main processes in the normal are smoother and more even, the dendrites are broader, the gemmulæ are more even, thicker and feathery, they apparently spread out over more lateral surface, and are very regular in appearance; while in the alcoholic there is a gap here and there as if some of them had fallen off and disappeared. Indeed, the differences between the two cells may shortly be expressed in that the whole appearance of the normal cell is stouter than its pathologic fellow.

SUMMARY OF THE PATHOLOGIC CHANGES IN EXPERIMENTAL ALCOHOLISM.

Prof. Welch[2] has summarized these changes as follows:

1. Animals exhibit marked individual differences in their susceptibility to the injurious effects of the prolonged administration of intoxicating doses of alcohol. While certain individuals succumb quickly, others may be kept alive under these circumstances for at least

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[1] Johns Hopkins Hospital Reports, vol. vi, No. 1.

[2] "Physiological Aspects of the Liquor Problem."

four years without presenting any serious anatomic lesions attributable to the alcohol. Between the extremes, there are all gradations in susceptibility, young animals and pregnant ones being generally the most susceptible.

2. The experimental reproduction in animals of certain of the more characteristic diseases of human beings, attributable to the abuse of alcohol, such as cirrhosis of the liver, chronic Bright's disease and arteriosclerosis, has not been satisfactorily attained. The most common pathologic condition noted is a fatty metamorphosis affecting especially the cells of the liver, the heart muscle, and the kidneys. This lesion soon disappears after stopping the use of the alcohol. Death or necrosis of limited groups of cells in the liver and kidneys may occur, but is inconstant. More common is an acute or chronic catarrhal gastritis, but this, too, is often absent or but slight. Changes in the central nervous system, similar to those in acute alcoholism, as well as certain additional ones, may be present in experimental chronic alcoholism. Hyperemia and small hemorrhages may occur, especially in the stomach, the kidneys and the brain. In view of considerable differences in the results reported by different experimenters, and of many still unsolved problems, additional experiments on the pathologic effects of the long-continued use of alcohol and of alcoholic drinks are needed.

3. Alcoholic intoxication increases the susceptibility of animals to many infections, and influences unfavorably the process of immunization. Pregnant rabbits repeatedly intoxicated by alcohol are likely to abort, and to die soon afterward from some accidental infection. Many of their young die a few days after birth.

In conclusion, I wish especially to thank Prof. William H. Welch, who directed this work, for his many suggestions and his encouragement in the performance of these experiments.

This work was aided by a grant from the "Committee of Fifty."

PULMONARY STREPTOTHRICOSIS.

A REPORT OF TWO CASES AND A REVIEW OF THOSE HITHERTO REPORTED FROM A CLINICAL STANDPOINT.

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It is not our intention in the present paper to discuss the morphology or the classification of the streptothrix. This subject has been very ably considered in the papers of Norris and Larkin,[1] Flexner,[2] Warthin and Olney[3] and others. It may be said, however, that no definite conclusions have been reached. The consensus of opinion seems to be that there are several distinct varieties of steptothrix, and that the various cases reported as instances of streptothricosis have been due to different varieties of this micro-organism.

From a study of the thus far reported cases of pulmonary streptothricosis it seems that the majority of the cases present the clinical picture of pulmonary tuberculosis. Bronchiectasis is frequently encountered, and hemorrhage is quite a common symptom. The majority of cases ended fatally, often as the result of metastasis to different parts of the body, the central nervous system being frequently involved. We have collected only those cases of streptothricosis which showed evidences of pulmonary involvement; numerous cases are on record in which other organs were the seat of the morbid process. Thus, for example, Ucke has reported a case of tonsillitis due to the streptococcus. Of course, it is not proved that this micro-organism was primarily etiologic in all the cases here collected, although in the majority it would seem eminently probable.

The streptothrix belongs to a rather ill-defined class of vegetable micro-organisms which, while in many respects closely simulating bacteria, yet possess certain features resembling the hyphomycetes. The dividing line between the streptothrix and bacteria is hard to draw, inasmuch as some of the latter, such as the *B. diphtheriæ* and the *B. tuberculosis,* at times exhibit branching and other characteristics of the former. Flexner says that the streptothrices, like the moulds, develop from spores into "cylindrical, dichotomously-branching threads, which alternately grow into colonies, the appearance of which suggest a mass of radiating filaments (mycelia)." The streptothrix, then, stands in a class between the moulds and the bacteria.

Doubtless one reason why streptothricosis of the lung has not been reported more frequently is that it is not readily demonstrable by the carbol-fuchsin method of staining, and, therefore, unless the sputum is examined by the Weigert-Gram method the organism may be overlooked. In a number of the cases which we have collected, the sputum was examined repeatedly for tubercle bacilli by the usual carbol-fuchsin method, with negative results, and it was only when the Gram process was employed that the micro-organism was found. The obvious conclusion is, of course, that all cases of suspected tuberculosis in which the tubercle bacillus is not found should be carefully examined by the Gram process for streptothrix.

The mere presence of the streptothrix in the sputum or in the tissues does, of course, not prove it to have been the primary pathogenic factor; it may be there simply as a secondary infection; that there are cases on record, however, in which this organism played the main and probably sole rôle in the production of organic lesions, we think, has been incontestably shown. It is a well-known fact that the tubercle bacillus tends to produce different pathologic changes, which present different clinical pictures when it is associated with varying micro-organisms, and it is quite probable that similar variations occur in streptothricosis when mixed infections exist. From a study of the reported cases, it seems that in the acute, bronchopneumonic type of streptothricosis, metastasis is quite common. The skin and the brain seem to be the most frequent locations for such processes, but the bones, the peritoneum, the pericardium, the liver, the spleen, the kidney and the bladder at times have also shared in the involvement. Animal inoculations were made in several cases, and in quite a number typical, although not always fatal, lesions were produced. The tendency to metastasis was also well marked in most of the inoculated animals.

Mayer,[4] in his *"Briefe aus Ostasien,"* mentions having seen ten cases of streptothricosis of the respiratory tract.

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[1] Norris and Larkin: Jour. of Exp. Med., 1890.

[2] Flexner: Trans. Assoc. Amer. Phys., 1898, vol. xiii.

[3] Warthin and Olney: Amer. Jour. of Med. Sciences, October, 1904.

[4] Mayer: Muenchner med. Wochft., 1901, p. 1775.

The organism was found in the sputum in small yellowish lumps resembling actinomycosis granules; elastic tissue blood and alveolar cells were also present. One case which came to autopsy showed encapsulated gangrenous areas in the right upper lobe of the lung, in which, as also in the pleural cavity, streptothrix could be demonstrated. These cases, occurring, as they did, after a sandstorm, suggested that infection occurred by inhalation. Another case is also mentioned in which apparently well-marked cavity formation healed completely, together with a disappearance of all symptoms.

Streptothricosis of the lung occurs in two forms: 1. The acute variety, which presents the symptoms of bronchopneumonia, with mucopurulent expectoration, yellowish or greenish in color, at times hemorrhagic or containing elastic tissue and bespeaking a necrotic process. Later in the course of the disease we may encounter purulent metastases in other parts of the body. Such have been reported in the skin by Scheele and Petruschky,[5] and in the liver, spleen, heart and brain by Engelhardt and Löhlein.[6] This form, therefore, presents in the advanced stages the clinical picture of a pyemia and seems to run to an inevitably fatal termination.

The gross pathology of the lungs resembles, to a certain extent, that of tuberculosis, with caseous areas and softening, surrounded by zones of round-cell infiltration or induration; occasionally multiple abscesses are encountered.

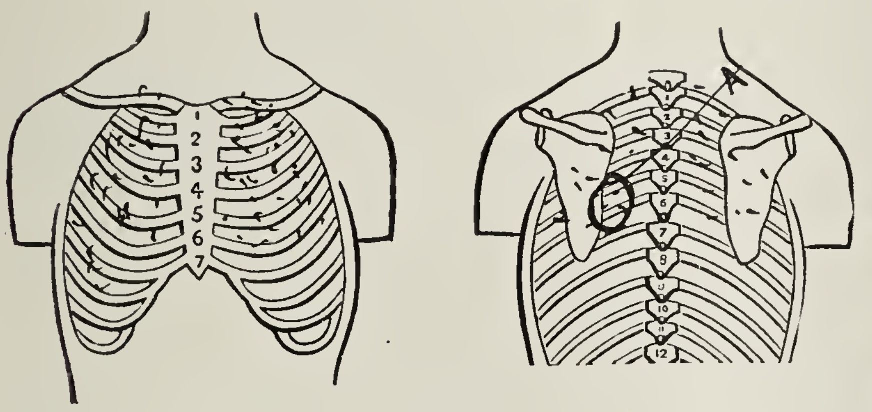

Fig. 1—Showing râles throughout chest. A. Amphoric whispered pectoral râles.

Microscopically, the streptothrix appears as long, fine, homogeneous, glistening threads, occurring in clumps and exhibiting a true branching, staining poorly and especially irregularly with Gram's stain, and thus, too, on superficial examination, resembling cocci (Fraenkel).[7]

2. The chronic variety, first described by Flexner[2] in 1897, presents almost an identical picture with chronic pulmonary tuberculosis. The case here reported showed in the lungs extensive areas of consolidation and necrosis, together with numerous tubercle-like bodies, the latter being also found in the peritoneal cavity.

Case 1.—W. S., mulatto, aged 22, was admitted to the Philadelphia General Hospital Sept. 7, 1904, on account of inguinal buboes of several weeks' duration, which were the sequelæ of gonorrhea. After undergoing the operations of circumcision and extirpation of the inguinal glands, the patient having a cough and signs of pulmonary apical disease, was transferred to the medical wards.

History.—Father died of unknown cause, mother of pulmonary tuberculosis. There is no history of malignancy or of syphilis. Patient had convulsions in childhood; later measles and diphtheria. He had chancroid of the penis fourteen months ago. He uses alcohol in moderation, but does not use tobacco.

Present Illness.—On admission to the medical wards, the patient complained of persistent cough, with copious fetid expectoration, and of pain in the left side and back.

Examination.—Pulse 90, respirations 35, temperature 102 F. Dyspnea was marked.

Lungs: There was marked dullness of the left chest, extending from the base up to the seventh rib. There was impairment of resonance at the left apex, anteriorly, at which area a few subcrepitant râles were heard. Posteriorly there was dullness at the left apex, with bronchovesicular expiration and great numbers of mixed râles. Over both bases, anteriorly, laterally and posteriorly, resonance and fremitus were diminished, breath sounds were feeble and distant. Posteriorly, beneath the lower third of the left scapula, there was an area of about two and one-half inches in diameter, over which amphoric respiration, aëgophony, whispered pectoriloquy and moist resonating râles were heard. The entire left chest was tender on percussion, and respiratory motion was restricted.

Heart: There was marked accentuation of the second sounds at the bases; otherwise examination was negative. Other organs showed nothing abnormal.

Urine: Urine was amber colored, acid, sp. gr., 1024. There was a trace of albumin, no glucose; there were hyaline casts and epithelial débris. It was deficient in amount.

Blood: On several different occasions, this showed a leucocytosis ranging from 9,000 to 13,600, chiefly of the polymorphonuclear variety.

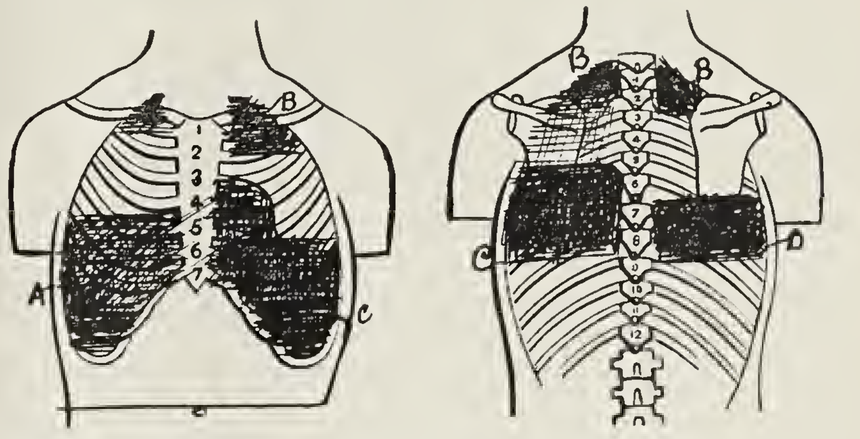

Fig. 2. Impaired resonance, vocal fremitus, and bronchovesicular expiration; C, distant breath sounds, fremitus and resonance feeble, pain, flat to percussion; D, friction sounds.

Course of the Disease.—The patient continued to lose weight and suffered from night sweats, accompanied by cough and large amounts of mucopurulent expectoration. He had several profuse pulmonary hemorrhages, and presented the clinical picture of chronic pulmonary tuberculosis.

Sputum: The sputum was examined for tubercle bacilli on sixteen different occasions, with negative results.

On January 14, Dr. Rosenberger reported the presence of streptothrix in the sputum.

March 7, the following report was received: "A great variety of bacteria. Organisms corresponding in morphology and tinctorial characters to the *B. fusiformis* of Vincent; cocci resembling pneumococci, a few streptococci, and various other unidentified species. No tubercle bacilli are demonstrable. A streptothrix is also present."

March 26, a special examination for Pfeiffer's bacillus proved negative.

March 29, the following physical signs were recorded: Clubbing of the fingers which has existed since admission has increased in degree.

Diagnosis.—Until the streptothrix was demonstrated in the sputum the diagnosis had been: "Chronic bilateral fibroid pleuritis, with infiltration and bronchiectasis (or cavity formation) of the left lung, probably tuberculous in origin."

Treatment.—This consisted mainly of stimulation with strychnin and forced feeding. Pain in the left chest was greatly relieved by strapping. Hemoptysis was treated by recumbency, ice bag to the chest, glonoin internally, etc. Santal oil was administered for a time in the hope of lessening expectoration and decreasing its fetid character, without any apparent result. Creosote in ascending doses was tried at another time and proved hardly more efficacious.

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[5] Scheele and Petruschky: Deut. med. Wochft., 1897.

[6] Engelhardt and Löhlein: Deut. Arch. f. klin. Med., vol. lxxv, p. 118.

[7] Fraenkel: Pathologie und Therapie der Lungenkrankheiten, 1904.

Diet: During the greater part of the time the patient was given the regular "house diet." In February eggnogs were given between meals, and the patient was encouraged to take as much milk as possible. Soon after beginning improvement was noted, manifesting itself by gain of weight and strength. As soon as the patient was able to be out of bed he was made to spend the greater part of the day out of doors on the fire escape.

April 3, patient left hospital at his own request, against advice. His temperature, pulse and respiration were still irregular and abnormally high. The nephritis, according to chemical tests, had disappeared, but the patient had never voided more than 48 ounces of urine, the average being about 35 ounces. He had gained considerably in weight and said that he felt strong enough to "work on the farm."

Case 2.—P. T., Italian, aged 26, a laborer, was admitted to the Philadelphia General Hospital March 23, 1905, with the symptoms of left-sided pleuritis.

No.	Reported By	Age.	Sex.	Symptoms.	Occupation.	Course of Disease.	Result.	Cultures.	Inoculation.	Associated micro-organisms.	Organs Involved.	Coincident Tuberculosis.	Sputum.	Remarks.
1	Flexner[2]. . . .	70	M	Pulmonary tuberculosis.	Not stated.	. . . . .	Death....	—	—	None.... .	Lungs, peritoneum, omentum, liver, spleen.	None	None	
2	Eppinger[8]. . .	52	M	Cerebrospinal meningitis.	Glass cutter.	20 days..	Death ...	+	+	None.... .	Br in, l'ngs, bronchial glands, spinal cord.	Old focus lungs	Not stated . .	
3	Sabrazes & Riviere[9]. . .	..	..	Abscess of neck, renal infarct.	Not stated.	. . . .	Death....	+	+	None... .	Lungs, brain, kidney.	None	Not stated . .	
4	Sabrazes & Riviere . . .	..	..	Bronchopneumonia, multiple cutaneous abcesses.	Not stated.	. . . . .	Death....	+	+	None.... .	Lungs, skin.. . .	None	Mucopurulent.	
5	Scheele & Petruschky[5] .. .	56	F	Pleuropneumonia, pyemia.	House work.	5 mos....	Death....	—	—	None.... .	Lungs, skin, kidney, bladder.	None	Mucopurulent.	First case diagnosticated intra vitam.
6	Buckholtz[11]. .	38	M	Tuberculous pneum'ia, empyema.	Steel moulder.	7 weeks..	Death....	—	—	Str'cocci secondary.	Lungs, pleuræ..	None	Fetid mucopurulent.	Hemoptysis; cavity formation.
7	Petruschky[5]..	12	F	Pulmonary tuberculosis.	School.	Several weeks.	Not stated.	—	—	Infl'enza B. diplo'cci.	Lungs..	None	Mucopurulent.	Mother and sister died of tuber'losis, streptothricosis?
8	Rullmann[12]. .	..	F	Tub'cul'is bronchial glauds.	House work.	. . . . .	Not stated.	+	+	Diphtheria?	Lungs.. . . .	None	Aqueous and cheesy nodules.	
9	Foulerton[13].. .	46	F	Chronic pulmonary tuberculosis.	House work.	2 years...	Not stated.	—	—	None.... .	Lungs..	None	Aqueous, at times hemorrhagic and "sulphur granules."	
10	Norris & Larkin [1].	45	M	Fever, cough, dyspnea.	Carpenter.	7 weeks..	Death....	+	+	Streptococci.	Lungs, bronchial glands, pleuræ.	None	Copious, fetid mucopurulent.	Clinical diag. pulmonary gangrene, bronchiectasis.
11	Norris & Larkin [1].	23	M	Chronic pulmonary tuberculosis.	Laborer.	13 years?.	Death....	+	+	Streptococci.	Lungs, bronchial glands, pleuræ.	Yes.	Mucopurulent.	Scoliosis and 10 yrs. cough; diagnosis bronchiectasis.
12	Aoyama & Migamoto[14]..	..	..	Cough, expectoration.	Not stated.	7 days...	Death....	+	+	None . . .	Lungs, brain?. .	None	Copious, nonfetid homogeneous, yellowish.	
13	Musser[15] . . .	37	M	Chronic pulmonary tuberculosis.	Business man.	1 week...	Death....	—	—	Strepto- and pneumococci?	Lungs.			
14	Birt & Leishman [6].	26	M	Empyema, pericarditis.	Soldier.	5 mos	Death....	+	+	Hyo. micr'-örganisms in pericardium.	Lungs, pleuræ, pericardium, liver.	None	Reddish, mucopurulent.	
15	Warthin & Olney[3]. . . .	45	M	Pulmonary tuberculosis.	Farmer.	3 years...	Death....	0	0	None.... .	Lungs.	?	Mucopurulent, no fetor.	
16	Engalhard & Loehlein[6].. . .	22	M	Dyspnea, cough, fever, pleuritis.	. . . . .	3 mos....	Death....	+	+	None.... .	Lungs, heart, pleuræ, peritoneum, liv r, spleen, brain.	None	Mucopurulent.	
17	Von Hoke[17]. .	48	M	Chronic tuberculosis.	Laborer.	2 years...	Death....	*	*	Streptococci.	Lungs, pleuræ..	None	Mucopuruleut.	Hemoptysis, clubbed fingers.
18	Ucke[18]	..	..	Pulmonary abcess, empyema.	. . . . .	. . . . .	Improved.	—	—	None.... .	Lungs, pleuræ..	None	Mucopurulent.	
19	Ucke..	..	.	Pulmonary gangrene..	. . . . .	. . . . .	Death....	—	—	Cocci. . . .	Carcinoma, esophagus; rupture, bronchus	None	Fetid, mucopurulent.	
20	V. Giemssen[19].	Y'n'g	F	Cough, expectoration.	House work.	Several years.	Stationary.	0	0	None.... .	Lungs.	None	Mucopurulent.	Hemoptysis round masses in sputum like actinomycosis granules.
21	Ashton & Norris	22	M	Fibroid pleuritis, bronchiectasis.	Laborer.	3 mos....	Improved.	0	0	Very numerous.	Lungs, pleuræ.	None	Mucopurulent.	Hemoptysis; clubbed fiugers, mother died of pulmonary tuberculosis.
22	Ashton & Norris.	26	..	Pulmonary tuberculosis.	Laborer.	6 mos....	Stationary.	0	0	None.... .	Lungs, pleuræ..	None	Mucopurulent.	Hemoptysis; clubbed fingers.
23	Rivicre[10].. . . .	..	..	Pulmonary tuberculosis.	. . . . .	Not stated.	Death?...	+	+	None.. . ..	Lungs, skin. .	None	Mucopurulent.	
24	Aoyama[14].. . .	..	M	Pulmonary tuberculosis (kakke).	. . . . .	. . . . .	Death?...	+	+	Tubercle	Lungs, pleuræ..	Yes. .	Mucopurulent.	
25	Chiari[21]	43	..	Cerebral hemorrhage.	Brick-maker.	7 days...	Death?...	—	—	Pneumococci.	Lungs, pleuræ cerebellum, cord.	Old sc'rs?	Mucopurulent.	Bronchiectasis.
26	Ohlmacher[22]...	..	..	Pulmonary tuberculosis.										

Note.—In cultures and inoculation columns + signifies positive; — signifies negative.

History.—Parents are dead from unknown causes. Four brothers and one sister are well. There is no history of tuberculosis or of malignant disease in the family. Patient denies

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9. Sabrazes and Riviere: La Semaine Médicale, 1895.
11. Buchholtz: Zeit. f. Hygiene u. Infectionskrankheit, 1897, vol. xxiv.
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19. von Ziemssen: Verhandl. d. Cong. f. innere Med., 1898.
20. Riviere: Archiv. Clin. de Bordeaux, 1895, vol. iv, p. 469.
21. Chiari: Zeits. f. Heilkunde, vol. xxi, 1900, No. 10.
22. Ohlmacher: Quoted by Warthin and Olney.

all history of preceding diseases, even in childhood; also of venereal disease and alcoholism.

Present Illness.—This began one month ago with cough, which increased as time went on and was accompanied with mucopurulent expectoration. During this time he lost weight rapidly, developed night sweats and anorexia, and had on two or three occasions attacks of hemoptysis.

Examination.—The patient is a well-developed man, fairly nourished. Pupils are normal. Moebius' sign was present in right eye. Chest is well formed. There is marked clubbing of the fingers.

Heart: There was marked accentuation of the aortic second sound; otherwise negative.

Spleen: This organ was palpable two inches below the costal margin.

Reflexes: The reflexes were apparently normal.

Lungs: There was diminished, delayed and restricted respiratory movement on the left side. Breathing was painful. The lower two-thirds of the left chest was flat on percussion, breath sounds feeble and distant, fremitus absent and resonance diminished. At the left apex, anteriorly, there was bronchovesicular expiration, fremitus and resonance were increased, and there was cog-wheel inspiration. Posteriorly, there were the same findings, with the exception of the last-named. At the right apex, anteriorly and posteriorly, there was vesiculobronchial expiration. Moist râles were heard from time to time diffusely throughout both lungs, mostly in the left.

Urine: Amber, acid, trace of glucose, no albumin, triple phosphates and amorphous urates.

March 26, 1905, pain in left side, incessant cough and copious, thin, mucopurulent expectoration remain the chief symptoms. There were irregular fever, night sweats (Figs. 1 and 2). The foregoing examination led us to believe that we had to deal with a case of pulmonary tuberculosis, with extensive involvement of the pleura. The sputum was examined for tubercle bacilli five times, with negative results. Finally a special examination by Dr. Rosenberger revealed the presence of streptothrix.

May 9, 1905, patient was more dyspneic and emaciated. Clubbing of fingers was more marked. Two urine examinations were entirely negative. Pain in the chest was relieved by strapping. Expectoration was thin, mucopurulent, sometimes almost aqueous in character and not infrequently amounted to over a quart in the course of twenty-four hours, thus pointing strongly toward the existence of a bronchiectasis. No definite physical signs pointing toward the existence or localization of such a lesion, however, could be made out, but the pleural thickening obscured the breath sounds almost entirely. Exploratory puncture of the left pleural sac yielded negative results. Despite the absence of chemical and microscopic findings in the urine indicative of nephritis, the patient persistently voided very small quantities of urine. This possibly was, in part, due to the large quantity of fluid eliminated in the sputum.

May 29, 1905, patient was in the same condition. He looked very ill, almost cachectic. He took nourishment badly and did not seem much benefited by extra diet of milk and eggs with which he was supplied. It was thought that he would, perhaps, do better if outdoor life could be instituted. To check the excessive expectoration, ascending doses of creosote were administered, without benefit, but the dosage amounted to only fifteen minims thrice daily. Further than this, treatment was stimulating—strychnin, glonoin, digitalis, caffein, etc. Temperature was still irregular.

Blood:

Erythrocytes, 3,560,000; leucocytes, 7,400. Differential count of leucocytes, as follows:

Lymphocytes	13.5 per cent.
Polymorphonuclear	77 per cent.
Hyaline forms	7 per cent.
Eosinophiles	2.5 per cent.

SUMMARY OF CASES.

The accompanying tabulation of twenty-six cases of pulmonary streptothricosis includes the hitherto reported cases, together with the two here recorded. The cases have been compared and contrasted from a clinical standpoint, the preceding articles having dealt almost exclusively with the pathologic and bacteriologic side of the question. From the study of these the following facts may be summarized:

Thirteen cases occurred in males, 5 in females, 8 no data. The youngest individual attacked was 12 years, the oldest 70. The course of the disease varied from one week to several years; the majority showed a duration of several months. Seventeen cases had the symptoms of pulmonary tuberculosis, most of these of the chronic variety. Twenty of the cases died—76 per cent.—2 improved, 2 remained stationary, 2 no data. Cultures and animal inoculations yielded positive results in 11 instances. Hemoptysis was recorded 6 times (23 per cent.) Pure streptothrix infection existed in 14, in 12 other organisms were coincidently encountered. Tuberculous lesions—old pulmonary scars—were found twice, tubercle bacilli once, scoliosis once. Various methods of treatment have been tried without definite or satisfactory results. The inhalation of medicated vapors had no effect. It would seem rational to presume that the best results would be attained by a therapy such as is employed in the various sanatoria for tuberculosis.

It will be noted that the two cases here reported present numerous features in common. Both suffered from inflammation of the pleuræ, accompanied by evidences of marked infiltration. Both expectorated very large amounts of mucopurulent matter and had irregular fever, hemoptysis and symptoms of vasomotor ataxia. Both continuously voided very small quantities of urine —often only from 14 to 16 ounces a day—without marked evidences of nephritis, despite the fact that they were imbibing large amounts of liquid diet. In their response to treatment, however, there was a marked difference in the two cases. The patient in Case 1, in whom the condition had apparently existed for a longer time, improved under treatment and left the hospital. The patient in Case 2, in whom the infection seemed more acute and virulent, became progressively worse. Despite the assertions of the patients to the contrary, we are inclined to believe that the disease had existed in both cases for a much longer period than the histories would lead us to believe; for it is hardly credible that such extensive and massive pleural thickening, even without the bronchiectasis, could take place in a short time. It is more than likely that, similarly to many cases of pulmonary tuberculosis, the incipient symptoms were of such slight and insidious nature that they were overlooked by the patient.

In closing we would like especially to emphasize our conviction that some of the many apparent cases of pulmonary tuberculosis, in which there is seemingly extensive tissue involvement, often associated with copious expectoration, in which repeated analyses of the sputum fail to reveal tubercle bacilli, if examined with the proper tinctorial agents, would reveal the presence of the streptothrix.

Improved Technic of Spinal Anesthesia.—Le Filliatre states that all the by-effects of spinal cocainization can be avoided by reducing the pressure of the cerebrospinal fluid as a preliminary. Whatever the pressure, he allows the fluid to flow until, instead of spurting, it drips slowly from the needle. He then reinjects always the same amount—10 c.c.—mixed with the anesthetic to be employed. In an illustrated communication in the *Journal de Médecine de Paris*, he announces that he has never had a mishap in a total of 452 cases in which he has followed this technic. He thinks the varying experiences of others are due to the differences in the pressure of the cerebrospinal fluid at the moment of the injection.

Special Article

IMMUNITY.

CHAPTER XXV.

CHOLERA.

In 1883 Koch recognized microscopically in the stools of cholera patients, and by proper technic obtained in pure culture, the *Vibrio choleræ*, which stands to-day as the unquestioned cause of Asiatic cholera. The organism may be cultivated from the stools in every case of cholera, and is never found in the stools of normal individuals, except in the case of non-susceptible persons who are often encountered in the presence of an epidemic. Such persons are often a source of danger as unsuspected "cholera carriers." No other intestinal disease is accompanied by the presence of the vibrio of cholera.

Characteristics of the Organism.

Typically the cholera vibrio is about 1.5 microns long and one-fourth as broad. When freshly cultivated from the stools the cells of young cultures have the so-called comma shape which has given the organism the name of the comma bacillus. The form in reality is that of a segment of a spiral. When two cells are attached end to end an S-shape is commonly produced, and long spirals are made up of many cells which are joined at the ends. Old cultures show many deviations from the typical form, the cells assuming the form of thick rods or even appearing coccus-like. The vibrio possesses a single long flagella, which is situated at an end. Although two, four and six flagellæ have been described, Kolle states that such organisms are not cholera vibrios, but vibrios of another nature. In the character and rapidity of their movement, as seen in a hanging-drop, Koch compares the organisms to a swarm of mosquitoes. Old cultures may lose their motility to a large extent. The cholera vibrio does not form spores, although certain involution forms simulate them. It stains readily with the ordinary anilin dyes and is Gram negative.

Cultivation from the Stools.

Identification.

The comma bacillus grows readily in various culture media of an alkaline reaction, certain appearances being characteristic; it is an obligate aërobe under artificial conditions, in spite of the fact that it flourishes in the intestines. The optimum temperature lies between 30 and 40 C. A very simple method of obtaining the organism in pure culture from the stools was discovered by Koch. In tubes of peptone bouillon which have been inoculated with the feces of a patient, the vibrio proliferates rapidly and within a few hours exists in almost pure culture at the surface of the liquid. Isolated colonies are obtained by transferring a small amount of the surface fluid to tubes of liquefied gelatin, then plating the latter. The colonies of cholera vibrio appear in a few hours as small translucent points from which pure cultures are made on a suitable medium. For more positive identification of the organism agglutination tests are performed with an artificially prepared anticholera serum. The Royal Institute for Infectious Diseases (Berlin) keeps on hand a dried serum of known strength (1-10,000) for this purpose. Tests are made in dilutions of 1/50, 1/100, 1/1000 and 1/2000, the final dilutions being so great that coagglutinins for other vibrios are practically eliminated. To the agglutination test may be added the "Pfeiffer experiment," in which the protective power of an anticholera serum is determined when guinea-pigs are infected intraperitoneally with the suspected culture. If the serum shows a protective power against this organism which approximates that shown against a known cholera vibrio, the diagnosis of cholera is justified. In performing such experiments the serum is mixed with the culture before injection.

Resistance.

The resistance of the cholera vibrio is very low. It dies in about two hours when dried (Koch) and on this account dust infection is thought not to occur. It is killed instantaneously by the boiling temperature, and in five minutes at 80 C. It is extremely susceptible to carbolic acid (killed by 1 per cent. in five minutes), corrosive sublimate (1 to 2,000,000 or 3,000,000 in from five to ten minutes), and to acids. Calcium chlorid is an efficient disinfectant when thoroughly mixed with the stools. The micro-organism lives in distilled water not longer than twenty-four hours, in ordinary water for several days to several weeks, and in one instance it was cultivated from the water of an aquarium after several months. Its life is short in the presence of putrefactive bacteria and rapidly-growing saprophytes, dying in sewer water in from twenty-four to thirty hours (Koch). Because of the large overgrowth of other organisms, the vibrio can rarely be cultivated from the stools of cholera patients for a longer period than from one to three days after death. Its life in and on foods depends on the reaction (alkalinity is favorable), and on the presence or absence of moisture. It lives longer in sterilized milk (ten days) than in that which contains other micro-organisms.

Infection Atrium and Dissemination.

The only infection atrium is the small intestine by way of the mouth and stomach. Infection by way of the lungs or through wounds does not take place. In the patient the living vibrio occurs only in the intestines, and it is excreted only with the feces. So far as known, it has no normal habitat outside the body, although a stream or other water supply may contain the vibrio over a long period through constant reinfection of the water. This can only occur, directly or indirectly, through the stools of patients. The washing of soiled linen or bathing in water which is used for drinking and other household purposes have caused outbreaks of cholera. The water supply of a city may be infected by the discharges of patients who are confined to a ship. Convalescents may retain virulent organisms in their stools for forty-eight days (Kolle), and, as stated, healthy persons who are insusceptible to cholera and who have resided in a cholera infected district, may carry virulent vibrios in their intestines. These conditions have contributed to the futility which to a large degree has met attempts to restrict cholera to limited districts by ordinary quarantine measures. In its extension from country to country cholera finds its way along the lines of travel. In some instances in which cholera has existed in pandemic proportions it has been possible to trace its source to the delta of the Ganges in India, a region in which the disease is endemic. Pilgrims from India have carried the infection to Mecca, and pilgrims from Egypt have carried it to their native land on their return from Mecca. Either from Egypt, or through Arabia, Asia Minor and Southern Russia or Turkey, cholera has with more or less rapidity extended to Western Europe. The development of rapid transit has increased the rapidity with which cholera may extend to distant parts. From Europe the disease has been carried to various ports of the western continent, Canada, the West Indies and southern ports of the United States, from which extension has occurred to different sections. Out of six widespread epidemics which occurred in the past hundred years, three have involved the United States, reaching considerable proportions. The means of introduction is not always apparent.

Epidemics.

As in typhoid, two types of epidemics are known, the two often being associated: First. that caused by water infection and, second, that in which the disease spreads by other means of indirect contact and by direct contact. The explosive character of an epidemic caused by infection of a water supply is much more striking than in the case of typhoid fever. In large cities hundreds, or even thousands, may be stricken within a single day. The brief incubation period, from twelve to twenty-four hours, contributes to the acuteness of the outbreak. The distribution of a "water-borne" epidemic corresponds with the distribution of the infected water. A remarkable occurrence illustrating this point was noted in the epidemic which attacked Hamburg in 1892. In certain streets in which the residents of the two sides obtained their water supply from different sources, one of which was infected, cholera was limited to that side which was supplied with infected water. Only irregular cases due to contact infection occurred on the opposite side of the street.

Epidemics which are due solely to contact infection develop slowly and irregularly. A common incident is the successive involvement of the members of a family, whereas others in the immediate neighborhood are unaffected. Water borne epidemics are invariably complicated by the occurrence of contact infection. The methods of contact infection are not different from those mentioned under typhoid fever. Food or milk which has been infected by contaminated water or by other means may cause the development of isolated groups or cases.

Susceptibility of Animals.

So far as known, no animal undergoes spontaneous infection with cholera. By rendering the gastric contents of guinea-pigs alkaline and introducing cultures into the stomach through a tube, Koch induced a cholera-like process from which the animals died within from twenty-four to thirty-six hours; an intraperitoneal injection of opium, to quiet peristalsis, seemed to be necessary for the success of the experiment. Similar results were obtained in very young rabbits by feeding cultures to them (Issaeff and Kolle, Metchnikoff). Guinea-pigs withstand the subcutaneous inoculation of moderate amounts, but are very susceptible to intraperitoneal inoculation. Intravenous injections are exceedingly toxic for rabbits, and a fatal cholera-like condition with localization of the organisms in the intestines and intestinal mucosa has been produced in this way (Thomas).

Susceptibility of Man.

A number of cases are recorded in which investigators while working with cultures have become infected with cholera, the cases running typical courses which sometimes ended fatally (Pfeiffer, Pfuhl and others). That not all persons are equally susceptible to the disease is shown in the few instances in which infection has been attempted deliberately; some contracted the disease, at least one case ending fatally, whereas in others either a mild infection or none at all took place.

Endotoxin.

The essential poison of the cholera vibrio is intracellular, and becomes free only after solution of the bacterial cells. Cultures which are killed carefully as by chloroform vapor (Pfeiffer) are highly toxic, although the fluid alone is non-toxic. Young cultures entirely free from bacteria have little or no poisonous action. The toxicity of older bouillon filtrates is due partly to solution of the bacteria with consequent liberation of endotoxin, and perhaps also to secondary disintegration products which have a certain toxicity. The soluble toxin of Metchnikoff, Roux, and Taurelli-Salimbeni is a dissolved endotoxin and not a secretion of the living cells, according to Kolle.

Pathogenesis.

Koch considers that cholera is an acute infectious process involving the intestinal epithelium, whereas the general condition is one of acute intoxication. It is assumed that the condition in the intestines corresponds to that in the culture media, i. e., that here,too, no true soluble toxin, comparable with that of diphtheria or tetanus, is secreted, but that the toxin which eventually reaches the circulation is that which is liberated from the bacteria after the latter have been dissolved by the bacteriolysin of the plasma, or perhaps by the leucocytes. Doubtless a great deal of endotoxin is liberated in the intestinal canal, but it is Koch's conception (cited by Kolle) that the primary intoxication comes from those organisms which have penetrated between and beneath the epithelial cells and here have undergone solution. One effect of the toxin in this situation is to cause desquamation of the intestinal epithelium, as a consequence of which rapid absorption of the toxin from the intestinal canal takes place through the denuded surface. This theory supposes that the toxin is not readily absorbed through the intact epithelium. The living vibrio has never been cultivated from the blood.

The changes in the intestines depend on the duration of the infection. In cases which prove fatal within a few hours the mucosa shows only moderate general reddening, which is intensified at the borders of Peyer's patches and the solitary follicles. The intestinal contents are of a rather clear fluid nature in which are suspended flakes of mucus and epithelium; the fluid may be tinged with blood. With a longer duration of the disease the destructive processes in the mucosa become more intense, and consist largely of desquamation of the superficial epithelium and intense congestion of the denuded submucosa. In the more prolonged cases, "cholera-typhoid," the mucosa, especially above the ileocecal valve, may show diphtheritic necrosis. The serous surface of the intestines is injected. The kidney shows parenchymatous degeneration.

(*To be continued.*)

Clinical Report

A CASE OF GENERAL INFECTION BY THE DIPLOCOCCUS PNEUMONIÆ.

BLANCH N. EPLER, M.D.
KALAMAZOO, MICH.

Patient.—Mrs. P., aged 26. Family history negative. The patient had lived a questionable life, and about three years ago, after failing in general health, she was thought to be dying. No specific history could be obtained.

Examination.—The physician called found the patient with a high fever, coughing and expectorating. Right lung was tympanitic in areas and dull in other areas. The sputum was examined several times for the tubercle bacillus, but none was found. There were macular-like blotches on hands and face, especially on the forehead; there were lesions of herpes on the lips, which were swollen; there was no itching, no pain.

Treatment.—No diagnosis was made, though the patient was put on tuberculosis treatment. She seemingly recovered and the macular eruptions scaled off.

Subsequent History.—On June 22, 1905, my attention was called to the patient, who had been treated by the city physician, Dr. John B. Jackson. Seven days previously the patient complained of fever, vomiting and slight discomfort in the left elbow. During the five days after onset, temperature, pulse and respiration increased, but with no signs in the lungs or elsewhere to account for the symptoms. At the end of five days, the right lung showed distinct signs of pneumonia in the upper lobe and the elbow became swollen, red and tender. The urine showed much albumin, with coarsely granular and hyaline casts.

June 22: The seventh day after coming under medical care the pulse was 150, temperature 102, respiration 78, and the abdomen was distended. Till she died she was conscious, not especially weak, but very cyanotic and distressed.

Autopsy.—The autopsy showed some interesting points, and these only will be mentioned.

Pleuræ: Under the sternum, there were pleural thickening and adhesions, which, on examination, showed no tubercles; there were many pus cells, many blood vessels containing pus cells, hyaline degeneration and small, round-cell infiltration.

Lung: In the right upper lobe, there was gray hepatization; the remainder of the lung was edematous and congested. There were hemorrhagic areas and many pus cells.

Glands: The bronchial lymph glands showed congestion.

Kidney: The kidneys were congested, and in the cortex there was some small round-cell infiltration and an increase in the connective tissue.

Pelvic organs: These were normal; except for one or two small ovarian cysts.

Heart: This organ was slightly enlarged; the right ventricle was empty except for a large white clot, which obstructed the valves and extended into the auricle and pulmonary artery, the wall of which was of unusual firmness, white and glazed.

Right elbow: This was swollen, firm and red. On opening the joint a thin yellow pus presented, smears and cultures from which gave pure *Diplococcus pneumoniæ*. There was no erosion. Cultures and smears from the heart's blood and lungs gave pure cultures of the *Diplococcus pneumoniæ*.

Pathologic diagnosis: Purulent pleurisy: gray hepatization of right lung; antemortem clot; general infection and localized infection, with *Diplococcus pneumoniæ*.

Compulsory Notification of Tuberculosis.—This is a notifiable disease in Victoria. The *Intercolonial Med. Jour.* states that a physician has been fined for not complying with the law.

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THE AGGRESSIN THEORY.

Virulence, resistance, susceptibility and the like are terms commonly used with reference to infectious diseases to express certain properties of the infecting and the infected organisms. While they are useful, still it is true that very little is known of the real nature of the conditions designated. A great part of the experimental work now being done in infectious diseases is carried on with a view of making our knowledge on such points more precise and it is probable that in time these words will be replaced by more exact ones as new facts accumulate. Metchnikoff's phagocytic theory, Ehrlich's side-chain theory, the opsonic theory of Wright and Douglas have been of great service in elucidating many of these little understood phenomena and are opening up new problems of great practical importance.

A further contribution has recently been made to the problems of virulence and immunity in the form of the "aggressin theory" of Bail.[1] Apparently it grew out of an attempt to explain the so-called "phenomenon of Koch"—an observation made years ago by Koch—to the effect that tuberculous animals when inoculated intraperitoneally with a fresh culture of tubercle bacilli succumb quickly to an acute attack of the disease, the resulting exudate containing almost exclusively lymphocytes. Bail found that if tubercle bacilli, together with sterilized tuberculous exudate were injected into healthy guinea-pigs, the animal died very suddenly, i. e., in 24 hours or thereabouts. The exudate alone had no appreciable effect on the animal, while inoculation with tubercle bacilli alone produced death in a number of weeks. He, therefore, concludes that there is something in the exudate that allows the bacilli to become more aggressive, and hence has called this hypothetical substance "aggressin." He thinks it is an endotoxin liberated from the bacteria as a result of bacteriolysis and that it acts by paralyzing the polynuclear leucocyte, thereby preventing phagocytosis. Heating the exudate to 60 C. increases its aggressive properties rather than diminishes them and small doses act relatively more strongly than larger ones. These facts he explains by assuming the presence of two properties, one that prevents rapid death, is thermolabile and acts feebly in small doses, and one that favors rapid death and is thermostabile. He assumes that in a tuberculous animal the tissues are saturated with the aggressin and when fluid collects in the body cavities, as it does on injection of tubercle bacilli, it contains large quantities of aggressin which prevent migration of the polynuclear leucocytes, but not the lymphocytes, and hence allows the bacilli to develop freely, producing acute symptoms. In the peritoneal cavity of the normal animal, injected with tubercle bacilli, on the other hand, are large numbers of polynuclear leucocytes which engulf the bacilli, thus inhibiting their rapid development, there being here no aggressin to prevent phagocytosis.

Now this theory has been applied to a number of infections, including typhoid, cholera, dysentery, chicken cholera, pneumonia and staphylococcus infections. In all similar results have been obtained as with tubercle bacilli. When exudates, produced by virulent cultures of these various organisms and properly sterilized, are injected with fresh cultures into an animal, death occurs in much shorter time than when the organisms alone are injected.

Moreover, it has been possible to immunize animals against these various infections by repeated injections of the aggressin in the form of exudates. This results in the formation of an "antiaggressin," which opposes the action of the aggressin, thereby enabling the leucocytes to take up the bacteria and thus to protect the animal. This has been done in staphylococcus, dysentery, typhoid, cholera, pneumococcus, and chicken cholera infections in animals. In addition a very marked agglutinative property of the blood is acquired for the bacteria in the animals so immunized.

Naturally, a theory of this kind is certain to be criticized and we find that Pirquet and Schick[2] have raised the objection that is entirely unnecessary to assume the presence of an "aggressin," concluding that all the facts observed can be explained by the formation of antibodies by the tissues. They also call attention to the fact that analogous phenomena of hypersensitiveness occur in other conditions than bacterial infections, as, for instance, in the so-called "serum disease" (*Serumkrankheit*) in which after one injection of alien serum a second injection of serum may cause very profound and acute symptoms.

It is a curious fact that in the several contributions already made on this subject by the German investigators apparently not one word has been said with reference to the possible rôle that the opsonins of Wright and Douglas may play in the explanation of the phenomena described. The opsonic theory, i. e., that certain substances in the serum prepare bacteria for phagocytosis, certainly rests on a secure basis. In the normal animal phagocytosis may be assumed to take place freely because opsonins are present in the fluids; in an infected organism the opsonins may be reduced in amount; we know that many bacteria, living and dead, absorb opsonin. Consequently, the exudates and the tissues of the infected animal would contain less opsonin. Hence phagocytosis would be diminished, and bacteria injected under these circumstances would develop more freely and largely unimpeded by the natural defenses so far as represented by phagocytosis. When sterilized bacterial exudates are injected, the opsonins normally present may be fixed by bacterial remnants and possibly neutralized also by proteins and other substances in the exudate. We know that complements and opsonins are very sensitive to chemical and other influences, and the introduction of exudate with bacteria, as in Bail's experiments, may, therefore, neutralize so much opsonin that active phagocytosis is suspended. Opsonins are destroyed by heating serum from 60 to 65 C. and this may explain the greater activity of infection described by Bail on injecting heated exudate; in this case, the little opsonin possibly present in the exudate was destroyed and phagocytosis still further crippled. Bail's explanations of the effect of heat on the exudates certainly appear somewhat labored. Now, what has been said here with reference to opsonin and its fate in infected animals and by mixture with exudate applies with equal force to complements on which depends the destruction of bacteria by lysis. For these and other reasons that can not be discussed now, it is evident that Bail's "aggressin theory" requires much further investigation, with special reference to opsonins and complements before its real value may be determined.

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[1] Wiener klin. Wochft., No. 9, 1905. Wiener klin. Wochft., Nos. 14, 16, 17, 1905. Berliner klin. Wochft., No. 15, 1905. Zeit. f. Hyg., vol. 1, No. 3, 1905. Arch. f. Hyg., vol. lii, pp. 272 and 411.

[2] Wiener klin. Wochft., No. 17, 1905.

CELL PROLIFERATIONS IN GROWTH CENTERS AND THEIR RELATIONS TO REGENERATION AND TO TUMOR FORMATION.

Through the researches of embryologists it has been learned that, during the development of the more highly differentiated multicellular organisms, the cell divisions by karyokinesis, which are at first diffusely and more or less evenly distributed over the whole "cell state," gradually come to be definitely localized and regularly grouped. This localization and grouping of the karyokineses is a process which stands in intimate causal relation to the shaping of the form of the embryo, inside and out, as well as to the differentiation of the individual organs. In the places, then, where karyokinetic figures are met with in numbers, we have to deal with "construction centers" of the living substance, with areas of most intense growth; a study of the disposition of areas rich in karyokineses is, therefore, of the greatest importance for the localization of growth processes in a developing organism.

In the earliest embryonic period of higher organisms, all the tissues and organs grow by an increase of all their cellular components as long as the cells retain a more or less embryonic or indifferent character. As soon, however, in the course of the histologic differentiation of an organism and its parts, as the individual cell components have assumed a special structure and function and have become, to a certain degree, different from the type of the embryonic mother cell, the conditions of growth change. The specialization of function of the different cells occurs *pari passu* with a depreciation in omnipotence. The more highly differentiated a cell becomes, the more limited it is in the morphogenetic and physiologic potencies of the embryonic cell, until finally it loses temporarily, or even permanently, the capacity for proliferation. Thus, the majority of cartilage cells, bone cells, nerve cells, sensory cells, etc., are largely excluded from proliferative processes relatively early in development. Certain cell groups in these tissues, however, remain embryonic in character, more or less undifferentiated; these are the so-called growth centers, and in them alone is the capacity for cell proliferation retained. Schaper and Cohen[1] have recently made an exhaustive analysis of these growth centers in epithelial tissues and organs and in the central nervous system and sense organs. Their studies, they believe, have an important bearing on regeneration and tumor formation.

Schaper and Cohen assert that it is the persistence of a latent capacity for proliferation in these special growth centers that accounts for the phenomena of regeneration after pathologic disturbance of local correlations of cell function. If the pathologic condition destroys these growth centers, regeneration is impossible. For some tissues in man (ganglion cells, for example), no growth centers persist in the adult at all, and they never regenerate when once destroyed. A few tissues possess the power, even after differentiation, to regenerate by proliferation under special environmental conditions. The lower the degree of differentiation, the greater the power of regeneration; the connective tissue cells, for example, which are but little differentiated, possess great proliferative capacity, as do the epithelial cells which are arranged in one layer. In most tissues, however, only special areas or centers of undifferentiated cells persist, and it is these which participate especially in the processes of repair. When bone is injured, repair, if it is to take place, must be brought about by proliferation of the layer of osteoblasts on the inner surface of the periosteum. If the epidermis is to be regenerated, the palisade cells of the Malpighian layer are the ones to multiply. In necrotic processes in the intestine with formation of ulcers, as in typhoid fever, healing occurs through multiplication of groups of cells at special sites in the crypts of Lieberkühn, where the cells permanently retain an undifferentiated, embryonal character. In the uterus, after menstruation or during the puerperium, the mucous membrane is regenerated from the special "growth centers" in the fundi of the uterine glands. In glands like the liver, kidney and pancreas, some portions of the gland tubules remain less differentiated than others, and it is the cells of these which multiply in regenerative processes. Thus, in cirrhosis of the liver, the regenerative capacity of the finest interstitial bile ducts becomes evident; in diseases leading to regenerative processes in the kidney, the cells of the straight tubules (not the convoluted) are able to multiply.

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[1] Schaper, A. u. C. Cohen, "Ueber zellproliferatorische Wachstumzentren und deren Beziehungen zur Regeneration und Geschwulstbildung," Arch. f. Entwckgsmech d. Org., Leipz., xix, 1905.

In view of the demonstration of the relation of these "growth centers" to normal development and to physiologic and pathologic regeneration, it is not surprising, perhaps, that Schaper and Cohen should attempt to press them into service to help to explain the origin of atypical non-inflammatory new growths or tumors. It is remarkable how frequently the "growth centers," or the places where embryonal karyokinesis persists longest, turn out to be sites of predilection for the development of tumors. It seems likely that the more exact localization of the "growth centers" will permit us better than ever to localize the starting point of tumors. Thus, if the theory be correct that tumors begin in the "growth centers," then it is likely that primary tumors of the liver will be found to begin in the finest biliary passages, tumors of the intestine in the depths of Lieberkühn's crypts, tumors of glands in the portions of their tubules which are least specifically differentiated, tumors of the epidermis in the Malpighian layer, chondromata in the perichondrium, gliomata in the ependymal wedges in the central nervous system. Thus far but little is known regarding the exact beginnings of tumors, but certain observations tend to support Schaper and Cohen's hypothesis. Partsch, for example, has found that the so-called "root cysts" of the teeth arise from elements of the epithelial sheath of the enamel organ; Ribbert believes that primary tumors of the liver do actually begin in the interstitial biliary capillaries; epithelial cerebral tumors appear to rise most often from the cells of the lowly differentiated choroid plexus.

The view that tumors have their origin in the "growth centers" accords very well with the Cohnheim-Ribbert hypothesis regarding the origin of neoplasms. The latter assumes (1) the presence in the body of cell material capable of proliferation, and (2) a stimulus which incites the abnormal proliferative activity, probably the result of the separation of the particular "embryonic" cell material from its normal organic connections and inhibitions. Schaper and Cohen localize the "proliferative cell material" in their "growth centers."

CONGENITAL TUBERCULOSIS.

There is evidently to be another swing of the pendulum of medical opinion with regard to the inheritance of tuberculosis, and, indeed, it is already well on the path of its next excursion. While a quarter of a century ago tuberculosis was universally conceded to be mainly a matter of heredity, in recent years medical opinion has gone almost entirely to the other extreme and has considered that the direct inheritance of tuberculosis is rather rare. Very few physicians were ready to concede that there was not at least an inherited predisposition to tuberculosis, but the actual transmission of the bacillus *in utero* was considered to take place only very rarely. The idea of contagion, then, practically entirely replaced that of heredity, and if children suffered more frequently from tuberculosis than older persons it was mainly because they were more exposed, and then, too, because they had less vitality resistant to the disease.

One excellent feature of this set of medical opinions with regard to the contagion rather than to the heredity of tuberculosis we hope will be maintained in spite of the change in medical opinion that we foresee. With the idea of contagion in mind, it is recognized that children playing about the floor are much more likely to come in contact with the bacilli of tuberculosis if there are any inmates in the household suffering from the disease and who are at all careless of the precautions necessary to protect others. This means not only carelessness in the matter of direct expectoration, but lack of care when coughing to keep something before the mouth in order to prevent the widespread distribution of material from the lungs on the atomized particles of sputa, which may be coughed to a considerable distance under such circumstances. As the result of the recognition of these dangers much good undoubtedly was accomplished.

There seems no doubt now, however, that the direct transmission of tuberculosis from mother to child is much more frequent than has been imagined. At the meeting of the National Association for the Study and Prevention of Tuberculosis, Dr. Wm. H. Welch of Baltimore declared that there are now many cases in which the presence of congenital tuberculosis has been noted. The principal proof for this is the great frequency with which tuberculosis of the placenta occurs in tuberculous women. Very few mothers who are suffering from tuberculosis in an active form fail to present tuberculous lesions of the placenta, when a careful investigation of that organ for this purpose is made. These lesions occur not only in advanced cases of tuberculosis, but also in the placentæ from patients who present scarcely more than the manifestations of incipient pulmonary tuberculosis. The disease must be in an active and not in a quiescent form, but it has been noted more than once that the strain of pregnancy itself seems to be sufficient to make a hitherto latent tuberculosis awaken into an activity that may prove dangerous for the offspring.

Dr. Welch considers that the rise in infant mortality from tuberculosis, which occurs during the second quarter of the first year of infant life, indicates that there has been a probable infection of the child during the latter part of the intrauterine existence. The incubation period of tuberculosis is not definitely known, but it is considered to be at least of several months' duration. If infection should take place, then, during the last three months of pregnancy it would be within the bounds of probability that the active manifestations of the disease would appear only some three to six months later.

It is not at all surprising that lesions of the placenta should be found. It is now well known that whenever tuberculosis is active and progressive, even though it may be only in an incipient stage, tubercle bacilli find their way into the circulation. They have been discovered repeatedly in the urine, having passed through a healthy kidney without causing serious effects. Not infrequently, however, their passage through the kidney gives rise to an irritative congestion causing a sense of weight in the loins of which consumptives not infrequently complain. That bacilli thus present in the circulation occasionally should find a resting place in the large vascular spaces of the placenta, where the circulation is less active, is only to be expected.

THE RED LIGHT TREATMENT OF SCARLET FEVER.

The treatment of the eruptive fevers by red light is no new proceeding, as there is some evidence that the Chinese and also some European nations employed it centuries ago. That they applied the treatment in the form now suggested seems doubtful, and there is evidence that they neglected to exclude ordinary light from the sick room, and that the hanging of the room with red draperies, and sometimes wrapping the limbs in red cloths, constituted the red light treatment of early days. Toward the end of the last century the work of Finsen put the matter on a scientific basis, and renewed the interest in this form of treatment. The philosophy of the treatment is based on the well-known fact that the so-called chemical rays in light, the blue, violet and ultraviolet, are capable of setting up inflammation in the healthy skin, and therefore are certain to aggravate the inflammation in a skin already diseased from some other cause. Finsen suggested the use of the red light treatment in smallpox particularly, and the results reported have varied, though they have been most encouraging, when the reporter closely followed Finsen's directions. This method of treatment has also been followed with some success in erysipelas, especially by Krukenberg, who has reported both improvement in the skin condition and rapid decrease in the temperature.

Quite recently Cnopf[1] of Nürnberg has reported some results with the red light treatment of scarlet fever which are distinctly encouraging. The method of applying the treatment in these cases is important, as all daylight must be permanently excluded until the eruption of the disease has completely disappeared. The windows for their lower two-thirds should be covered with some tissue completely impermeable to light, while the upper one-third should be covered with ruby red silk. At night the room should be treated as a photographic dark room and only lights with red shades should be allowed. The importance of completely excluding everything but the red rays is demonstrated by some of Cnopf's experiences. He found that even after the scarlatinal rash had apparently disappeared exposure to daylight for two or three minutes sufficed to bring it back. He was compelled, therefore, to make this test in all cases before allowing patients to be subjected to ordinary light. The effect of the red light treatment on scarlet fever is twofold. The fever, which under ordinary treatment usually persists until the rash fades, falls, almost by crisis, and reaches normal in three or four days instead of in seven or eight days, as is the case under ordinary treatment. The skin lesion is also markedly affected, the red color so characteristic of the disease gradually fading. The complications of the disease are apparently not affected, as in several of Cnopf's cases secondary angina or pneumonia served to cause an increase in the fever as usual.

The question naturally arises whether it is the red light or merely the exclusion of all light which is responsible for the changes noted by Cnopf. The query is an old one. Years ago it was noted that exclusion of all light from smallpox patients led to less pitting than daylight treatment. Cnopf, however, thinks that the mere exclusion of daylight is not the responsible agent, but that the red rays have an actual curative effect. How this effect is produced he does not pretend to say. However much we may be lacking in explanations of these observations, and however much we may doubt the actual value of the treatment, the success achieved seems to indicate that the method is worthy of more extended trial.

COLLIER'S WEEKLY AND PATENT MEDICINES.

One of the most encouraging signs of the times is the fact that several lay journals have come out against the patent medicine evil. The opposition in most instances, however, consists in simply refusing to accept patent medicine advertisements of any kind. The most persistent, consistent and logical fight is being waged by *Collier's Weekly*, and there is scarcely a week but something appears that is to the point. Here is its comment on peruna and yellow fever, to which we referred editorially last week. It bears the heading, "Murdered by Advertisement."

> Patent medicine horrors never reached a point of deeper degradation than in the yellow fever troubles of the South. Mr. Samuel H. Adams, whose series of articles will begin probably in five or six weeks, will hardly have anything more startling to narrate than the incredible performance of "Peruna" in alliance with the New Orleans *Times-Democrat*. This sheet has accomplished a feat of prostitution which, considering its pretense to respectability, probably sets the record. While the South is struggling to check a peril of the direst magnitude, this newspaper publishes an interview with "Dr. Hartman," with the familiar allegation that he "said in part," and all other devices to make it look like an important piece of news. Its headlines are: "How to Avoid Yellow Peril. An Interview with Dr. Hartman Concerning the Yellow Plague." To the reader this is the genuine opinion of a physician. He can not know that Dr. Hartman is the head of the Peruna Company, and that the *Times-Democrat*, in whom the reader presumably has some trust, is selling itself and the safety of its constituents for a bag of gold. "A summary of this interview," the *Times-Democrat* informs us, "is being spread broadcast over the United States *for the benefit of yellow fever sufferers.*" The gist of it is that, while screens

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[1] Münch. med. Wochft, No. 32, 1905.

and other precautions are advisable, Peruna should be taken at once and continued during the whole course of the epidemic. "'I feel sure,' the doctor went on to say (!), 'that any person following this advice is in no danger of taking yellow fever.'" For anybody who believes we have taken too seriously the patent medicine evil and newspaper complicity therein, this unspeakable outrage should be a lesson. Is there anything to which men can not be led by money? To own a newspaper and hire it out to perilous fraud in an emergency like the yellow fever danger almost surpasses one's belief in human greed. No more disheartening proof of the need of the crusade which we have begun could possibly have been offered.

Evidently the writer of this article thought that the *Times-Democrat* was the only newspaper at fault. This is not true. Many of the Southern newspapers had the same advertisement inserted as telegraphic news, and these should accept with as good grace as possible the righteous castigation given them by *Collier's Weekly*. We understand that Mr. Samuel Hopkins Adams, who for months has been quietly conducting an investigation for this purpose, is preparing a series of articles for the weekly which will state facts regarding patent medicines in plain language. Judging from the following, he will also take up the quack doctor side:

> The quacks are not to be omitted. The same investigator, whose inquiries into patent medicines are almost completed, is gathering material about medical abuses also. He hopes to have the opening article ready for publication in September. It will give an outline of the patent medicine industry, and will be followed by a number of articles on particular medicines and groups of medicines, beginning with Peruna. The quacks will follow in their turn.

Collier's Weekly deserves the support of every member of the medical profession.

THE EPIDEMIC RECEDING.

The situation in New Orleans continues to improve, while in the remainder of Louisiana there are some seriously infected points, but there is no longer a general increase of new cases and foci. The storm center of news for the past week has rested in Mississippi, with a lively subsidiary center at Memphis. Another town conspicuous for its boasted "air-tight" shotgun quarantine—Vicksburg—has been compelled to admit the presence of infection. In the case of several towns, infection has been discovered, or admitted, only after a person recently from the town has fallen ill with the disease elsewhere, thus leading to a tracing back of the infection. A notable and welcome feature of the week's news has been the *volte* face of Governor Vardaman. His views on quarantine and on methods of fighting the epidemic have come quite into accord with those of the best posted medical men, and for this much credit is due his willingness to be convinced. Arkansas has witnessed the most depressing of the week's events. Governor Jefferson Davis set aside the quarantine methods of the State Board of Health and four medical members, including the president and secretary, promptly resigned. Governor Davis also refused Surgeon-General Wyman's request to permit Passed-Assistant Surgeon Goldberger to pass by rail through a few miles of Arkansas in order to reach another point in Louisiana where his services were badly needed. From Southern Illinois comes news that persons turned back by the quarantine at Cairo are going up the Ohio and Wabash rivers and then entering the state. Along the Gulf coast the infection steadily spreads in mild form. So far as New Orleans is concerned, it now seems possible to state that modern methods have won. It is depressing to read that it was necessary to arrest a physician for failing to report cases. As a whole, the medical profession and the majority of the citizens are pulling together splendidly, and the result already is a matter for pride.

HEPATIC TOXEMIA AS A LATE EFFECT OF CHLOROFORM.

Of late years chloroform has been generally recognized as a more dangerous anesthetic than some others. Its toxic action, however, is usually manifested early, and as regards late effects it has been considered, perhaps, even safer than ether, the irritant action of which on the lungs, etc., is often dreaded. The communication of Drs. Bevan and Favill in this issue of THE JOURNAL and the extensive literature of similar cases which they quote suggest a peril in the late effects of chloroform which is evidently not generally recognized by the profession. It is probable, as they point out, that in many cases hepatic toxemia from chloroform is slight and shown only by transient jaundice and nervous symptoms of comparatively slight import, but that it may be overwhelmingly fatal seems to be indicated by the case they report and by others that they quote. The dangers of prolonged administration of chloroform are shown by the fatty liver degeneration produced in animals, which should itself be a warning against its prolonged use in any surgical operation. Its danger in young children and under the special conditions which Bevan and Favill enumerate as increasing the susceptibility to these late effects should be considered. It is not likely that chloroform will pass altogether into disuse, at least not until some efficient substitute, with all its advantages, has been discovered, but we are learning apparently more of its dangers all the time. It is something of a question whether, while underestimating the possible late effects of chloroform, we have not also overestimated those of ether. There seems to be much yet to be learned about anesthetics and their use.

THE SANITARY PROBLEM OF PANAMA.

Professor Vaughan's communication elsewhere in this issue states the conditions of success in the construction of the Panama canal as succinctly and forcibly as can be done. That the problem is first of all a sanitary one is well known to all medical men who have paid any attention whatever to the conditions existing on the Isthmus. Nevertheless, the difficulties which it involves have been too much ignored and, as Dr. Vaughan says, this was the main reason of the failure of the French canal company to complete its work. The canal can be built, as he admits, without special measures for sanitation, but at a cost of human life and treasure that is almost incalculable, to say nothing of the danger he mentions of involving other regions. The first thing to do is to render the region habitable for the great number of laborers of whatever nationality that will have to be employed for years in the excavation and construction work. The task will be easier for us than for our predecessors, since we know more of the natural history of the diseases that must be combated. It is not the yellow fever that really is the most formidable of these. The ever-present malaria, especially in its pernicious form that is so common on the Isthmus, is a far more dangerous because a more persistent and less manageable foe. That the mosquito can be absolutely eliminated as a disease factor, especially on the low Atlantic side, is perhaps too much to expect, but malaria can be controlled even there to a great extent. It is a comparatively small part of the work at most that remains to be done in that region, and over the rest of the line of the canal the natural conditions are far more favorable. It is possible, moreover, that besides the protective vaccination from yellow fever suggested by Professor Vaughan, a careful study of the subject may develop some method of procuring sufficient immunity against the more serious forms of malarial disease or some parasite, as he intimates, that may be fatal to the mosquito. If the canal work can develop such results, it will be worth more to the world than the commercial value of the completed link of transit from ocean to ocean. Such an idea is not altogether visionary. No one expected from our contest with Spain sanitary results such as were attained, and which have been justly said to have been worth more than all the conflict cost. Aside from such possibilities, however, the sanitation of the Isthmus, to a very large extent, is practicable with the means at hand and it is a misfortune that these have not been fully utilized before. There are encouraging indications that the present executive management of this great work appreciates these needs and is taking steps to meet the conditions much in the way that our correspondent indicates. The undertaking is a national one. Our reputation as a people is largely involved in its success. It will be a pity if, through failure, it discredits American intelligence and efficiency. It is only by availing ourselves of every possible aid that sanitary science can give that the work can be creditably and successfully accomplished.

CASUALTY FRAUDS.

Continued exposure of the methods of those who make a business of getting injured and of collecting damages gives strong promise of ruining the industry. Theodore Waters contributes a fourth paper (in September *Pearson's*) recounting his own experiences in alleging accidents that never happened. In one city he was "hurt" early in the morning, and before noon lawyers' runners urged him to sue on a contingent fee contract, offering to furnish without additional charge all necessary witnesses and testimony. Once the retainer contract is signed the really injured person is thereby prohibited from accepting any proffered settlement, except through the retained lawyer. This shyster lawyer fees court attachés, hospital internes, police, notaries and factory foremen, all of whom can furnish valuable information and assistance. It is alleged that Chicago presents the largest number of illustrations of the "fake doctor" working with the "shyster lawyer" to defraud corporations. "For it can be laid down as an axiom that if there were no shyster lawyers, or doctors whose practices are without the code of medical ethics, there would be no profession of getting hurt." The strenuous methods of the medical profession to rid itself of this and similar impediments are not mentioned, probably because unknown to the writer. On the other hand he speaks decidedly of the evident degeneration of the morale of the legal profession during the last fifty years.

THE SIGNIFICANCE OF ACETONURIA FROM THE SURGICAL STANDPOINT.

The appearance of acetone in the urine has long been recognized as a danger signal in cases of diabetes, although investigation leads to the belief that the symptoms of intoxication often present under such conditions are in reality due to diacetic acid and B-oxy-butyric acid, of which the acetone appears to be a forerunner. The important practical significance of the detection of this state of acidosis resides in the possibility of neutralizing the condition by the administration of sodium bicarbonate. It has been observed further that a similar condition is not rarely encountered in cases that pursue an unfavorable course when submitted to anesthesia for the purpose of surgical intervention. With the object of determining the validity of previous observations and inferences in this connection, Dr. Joshua C. Hubbard[1] examined for the presence of acetone and diacetic acid the urine from 145 patients admitted during the summer of 1904 to one of the three surgical services of the Boston City Hospital. Acetonuria was found in 9 cases, associated with diacetic acid in 4, but all of these pursued a course perfectly consistent with the injury or disease present, and in none could any abnormality in convalescence be discovered that could be attributed to the state of the urine. In 4 of these cases diacetic acid also was present in the urine. In 5 cases in which acetone or diacetic acid or both were found during convalescence there was possibly a momentary disturbance, which yielded readily to treatment with sodium bicarbonate, administered in doses of 30 grains thrice daily or oftener. In 2 cases in which alarming symptoms developed and acetone was found in the urine, death ensued. The conclusion is accordingly reached that the presence of acetone in the urine, alone or in association with diacetic acid, in conjunction with symptoms of themselves alarming, especially vomiting, adds to the gravity of the prognosis.

COMMENDABLE SOCIETY WORK.

As the organization movement gathers momentum, medical societies here and there meet emergencies with effective society action. These deserve mention both to receive merited praise and, more particularly, to let all other societies know of the work accomplished and of the methods employed. By knowing what others are doing, local societies will be stimulated to do better work for the public and for the profession. A notable recent instance of collective medical aid to a suffering community is a "Circular of Information addressed to the Medical Profession for distribution among Trained Nurses and others entrusted with the care of yellow fever patients," that has been issued in attractive, well-printed form by the Orleans Parish Medical Society—at New Orleans. The circular is composed especially of an extract from the proceedings of the society's meeting on August 12, 1905. At this meeting Dr. Rudolph Matas addressed the society on "New Duties and Responsibilities Imposed on Trained Nurses and Other Persons Entrusted with the Care of Yellow Fever Patients, in Consequence of the Newly-acquired Knowledge of the Mode of Transmission of this Disease by the Mosquito." He pointed out the fact that the physician could only give the directions as to the new methods of prophylaxis, while others must execute them. In all, the brochure contains but 13 pages of well-digested and well-classified information regarding mosquitoes, fumigation, prophylaxis, etc., and it is admirably adapted to its purpose as well as being a very creditable medical society enterprise.

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[1] Boston Med. and Surg. Jour., June 29, 1905, p. 744.

Medical News

ILLINOIS.

Smallpox.—Four cases of smallpox are said to have developed in Monmouth.——An inspector for the State Board of Health was sent to Hull, White County, August 28, where an epidemic of smallpox was reported.

Personal.—Dr. William C. Clarke, Cairo, has resigned his position as chief health inspector.——Dr. William A. Balcke, Cropsey, has returned from Bloomington, where he underwent an operation for appendicitis.——Dr. W. R. Hamilton, an aged physician of Peoria, was knocked down by a buggy and seriously injured, August 30.

Hospital Notes.—The hospital fund for Taylorville Hospital now amounts to more than $2,300.——The Misses Alice and Caroline Graham, Washington, D. C., formerly residents of Canton, propose to furnish the necessary grounds and to erect a public hospital building thereon at Canton, to cost about $15,000, and containing about twenty rooms, under the condition that an endowment of $20,000 shall be provided, that the hospital shall be free to all schools of medicine, and that at least five rooms shall be available for charity patients.

Illegal Practice.—John Pattie, Peoria, who was found guilty of practicing medicine without a license and fined $100 and costs, has appealed from the decision of the court, claiming that he practiced under the special direction of a licensed physician.——Dr. James M. Fernan, a "Quaker medicine man," known as Brother Paul, who is under indictment at Freeport under fourteen counts, five for selling drugs in violation of the state law, five for practicing medicine without a license from the State Board of Health, and four for selling medicines in the city without a license, has been found guilty and sentenced to pay fines with costs amounting to more than $2,000. Brother Paul has left town.

Chicago.

Personal.—Dr. Casey Wood has returned from Europe.——Dr. Louis L. McArthur has gone to attend the International Surgical Congress at Brussels.

Corner-stone Laid.—The corner-stone of the new Washington Park Hospital, Vincennes Avenue, was laid September 4. Among the speakers were Professor Mauritzon of Augustana College and Rev. A. J. Lofgren. The building will cost $50,000 and is expected to accommodate 105 patients. Dr. Carl O. Young is physician to the institution.

Deaths of the Week.—There was a reduction in the annual death rate, as compared with the week previous, from 14.68 per 1,000 to 13.25 per 1,000. The total number of deaths was 510. Of these 130 were due to acute intestinal diseases, 63 to consumption, 40 to violence, including suicide, 37 to heart diseases, 30 to Bright's disease, and 22 each to pneumonia and cancer.

August Mortality.—During August 2,436 deaths were reported, equivalent to a death rate of 14.31 per 1,000. The death rate for August, 1904, was 12.90, and that for July, 1905, 13.48 per 1,000. Of the deaths 727 were of infants under 1 year, and 246 of children between 1 and 5 years. Among the causes of death were: Acute intestinal diseases, 638; consumption, 224; violence, including suicide, 210; heart diseases, 153; Bright's disease, 149; pneumonia, 119, and cancer, 111.

INDIANA.

State Board Enjoined.—The State Board of Medical Examination and Registration has been temporarily enjoined from revoking the license of Dr. John Milton Rhodes, Indianapolis, who is charged with gross immorality.

Fined.—Dr. Albert E. Sterne, Indianapolis, was fined $25 and costs, August 1, for exceeding the speed limit with his automobile.——Dr. Joseph A. Hallanan, Logansport, was found guilty of assault and battery July 29, and fined $25 and costs.

Medical School for Purdue.—At the meeting of the trustees of the Purdue University, held September 1 in Indianapolis, the university accepted the gift of the Medical College of Indiana, which has a property value of $100,000. The college will not be moved to Indianapolis, but will continue its work as a part of the university.

Appointments.—The newly appointed Board of Health of Jeffersonville, of which Drs. David C. Peyton and William H. Sheets, Jeffersonville, are the medical members, has organized and elected Dr. Sheets secretary.——Dr. Mary L. Widdop, Indianapolis, has been made a member of the medical staff at the Indiana State Soldiers' Home, Marion.——Dr. William S. Walker has been elected secretary of the school board of Lafayette.——Dr. William R. Cravens, Bloomfield, has been elected surgeon to the Illinois Central Railroad.

Ill and Injured.—Dr. James N. Hurty, secretary of the State Board of Health, is confined to his bed with lumbago.——Dr. Percy E. Terry, Rochester, is reported to be critically ill.——Dr. Rufus F. Blount, Wabash, fell down the stairs leading to his office August 25, fracturing his clavicle.——Dr. Arthur W. Tucker, Logansport, was operated on for appendicitis August 20.——Dr. Omer P. Phares, Liberty, fell down stairs August 7 and sprained his ankle.——Dr. Seymour C. Wilcox, New Albany, is reported to be critically ill.

Abroad and at Home.—Dr. Charles E. Barnett, Fort Wayne, will start for Europe early in October.——Dr. David E. Mattison, Marion, sailed for Europe August 20.——Dr. James E. Johnson, Marion, has returned from Europe.——Drs. Thomas W. Moorhead, Myron A. Boor, Joseph H. Weinstein and Leo J. Weinstein, Terre Haute, have returned from an extended trip to Europe.——Dr. Austin Funk, New Albany, leaves for Europe this month.——Dr. Frank A. Morrison, Indianapolis, returned July 27 after five months in Europe.——Dr. David R. Ulmer, Alexandria, is in Scotland.——Dr. William F. Clevenger, Indianapolis, returned from Europe July 28.

Sickness and Deaths in July.—The deaths in July numbered 2,774, and in the same month last year 2,772. Diarrheal diseases were reported as more prevalent and the deaths from this cause numbered respectively 361 and 296, an increase this year over last of 21.9 per cent. Almost 80 per cent. of all diarrheal troubles occur in infants and very old persons. The deaths from preventable causes were: Consumption, 321; typhoid fever, 62; diphtheria, 16; whooping cough, 23; pneumonia, 63; cerebrospinal meningitis, 32; influenza, 6; puerperal fever, 9; violence, 174, and smallpox, 3. The cancer deaths numbered 110, or 6 fewer than in July of 1904. The deaths under 5 years of age numbered 791, or 29 per cent. of the total, and the deaths 65 years of age and over numbered 592, or 21.9 per cent. of the total. The consumption mortality was less than in July, 1904. Of the 321 deaths from this cause 229, or 71.3 per cent. of the decedents, were between the ages of 15 and 50. Only 20 cases of smallpox with 3 deaths in 7 counties were reported. In July, 1904, there were 114 cases, with 5 deaths in 21 counties.

KENTUCKY.

Did Not Report Fever.—For failure to report a case of scarlet fever Dr. David A. Coyle, Lexington, was fined $25 and costs August 22.

Typhoid Epidemic.—An epidemic of typhoid fever is reported at Vine Grove.——There have been reported more than 50 cases of typhoid at Clay. The epidemic is now said to be under control.

Diphtheria.—Diphtheria is so prevalent in Elmsville and Harvieland, Franklin County, that the county board of health has prohibited all public gatherings.——Diphtheria is prevalent in Owensboro.

Personal.—Dr. Thomas E. Moss, Woodville, sailed from Seattle August 31 for the Philippine Islands.——Dr. William T. Leachman, Louisville, who has been in bad health for several months, has been taken to Martinsville, Ind.

LOUISIANA.

Stricken by Fever.—Drs. James T. Wolfe, New Orleans, and Louis A. Mereaux, St. Bernard, were stricken by yellow fever August 30.

Premedical Course.—The authorities of the Louisiana State University have decided to establish a premedical course, beginning in 1906.

Clinic for Women and Children.—The New Orleans Dispensary has been established at 1824 Annunciation Street for the purpose of giving free medical aid to poor women and children. Dr. Sara T. Mayo is in charge of the enterprise.

Personal.—Dr. D. N. Fletcher, Poland, was thrown from his horse, fracturing his arm near the elbow.——Dr. Thomas H. Watkins has been elected secretary of the Lake Charles Board of Health, vice Dr. Melvin F. Howe, resigned.

MARYLAND.

Baltimore Personals.—Dr. Eugene F. Cordell has resigned the position of editor of the *Hospital Bulletin* of the University of Maryland.——Dr. Charles F. Blake is critically ill with typhoid fever.——Dr. Emily Petersen has gone to Minnesota for several weeks.

Health Report.—The weekly report of the Baltimore health department for the week ended September 2 shows but 5 deaths from typhoid fever, although 143 cases of the disease were reported. For the entire month of August the following figures are here given: Deaths, 875; births, 915; deaths under 5 years of age, 361; deaths from typhoid fever, 34; cases reported of same, 324; mortality from Bright's disease increased from 36 in August, 1904, to 69.

Crisfield Marine Hospital.—A meeting was held in the Crisfield opera-house last week in the interest of the General Marine Hospital of that city, Dr. Jacob F. Somers presiding. The hospital is intended for poor sailors, who are brought there during the winter and are dependent on the charity of the place. The Woman's Christian Temperance Union has the work in charge and has almost enough money in hand to begin with. Among the directors are the state comptroller, Drs. Gordon T. Atkinson and W. F. Hall. Crisfield is one of the greatest centers of the Chesapeake oyster industry.

Embalming Legislation.—The question of legislation governing the embalming of bodies is being discussed by the Baltimore health commissioner, the state's attorney and the coroners. At present undertakers are allowed to embalm bodies prior to the issuance of death certificates by attending physicians, and it is consequently possible for a crime to be committed and for the perpetrator to go undetected, since arsenic and bichlorid of mercury enter largely into the fluids used. Dr. C. Hampson Jones suggests the creation of the office of state chemist, whose duty it should be to be ready at all times to make an analysis.

MASSACHUSETTS.

Bequests.—By the will of the late Dr. Louis A. Prefontaine there is devised to Mercy Hospital, Springfield, a powerful magnet, and $5,000 to be applied on the indebtedness of the institution.

Medical Frauds Denied Use of Mails.—Fraud orders have been issued against J. Tige, S. Ray, Amos Ball & Co., Dr. Charles C. Rothfuchs, Dr. Longest and Dr. Herrick Medical Co., all of Boston.

Will Build Leper Hospital.—The State Board of Charity has purchased the island of Penikese, in Buzzard's Bay, and a leper hospital will be constructed there. It is expected the building will be ready for occupancy in the autumn.

Typhoid in Worcester.—At the present time there are more than 40 cases of typhoid fever in Worcester and four deaths have occurred, caused by milk supplied by a single milkman, who has been forbidden by the Board of Health to sell any more milk.

Personal.—Dr. Maurice H. Richardson, Boston, has gone to Brussels to attend the International Surgical Congress.——Dr. Henri T. Gabowry, Taunton, was thrown from his buggy August 29 and sustained a slight fracture of the base of the skull.——Dr. William F. Whitney, Boston, has succeeded the late Dr. Edward S. Wood as expert on blood.

MISSOURI.

Personal.—Dr. Franz J. T. Specht, physician in charge of the North Side Dispensary, St. Louis, has resigned.

Low Death Rate.—The death rate for St. Louis for July is reported to have been at the rate of 16.39 per 1,000. During the month 887 deaths were reported, 277 of which, or 31.2 per cent. of the total, were in children under 5 years.

Expected No Deaths.—In the construction of the new City Hospital, St. Louis, it was recently discovered that no provision had been made for a dead house, and ground has been broken for the construction of this relatively important department of the hospital.

Illegal Medical Practice.—H. H. Morris, an osteopath, who has been practicing osteopathy at Marshall without a license, has pleaded guilty and thrown himself on the leniency of the court. The penalty provided ranges from $50 to $500.——Dr. B. H. Westfall, arrested at Craig, charged with being an itinerant vender of drugs and nostrums without a license, was fined $5 and costs at Oregon.

Hospital Notes.—The St. Louis Skin and Cancer Hospital, which has been established through the influence of the charitable women of the city, has opened its new building at Jefferson avenue and St. Charles street.——About 360 patients, lame, halt, blind and victims of disease or accident, have been moved from the old City Hospital into the new building recently completed.——Arrangements have been made to equip a room in the new Salvation Army Hall, Webb City, for a dispensary for injured miners.——The Knox County General Hospital, Rockland, was formally opened August 14.——A new Emergency Hospital for St. Joseph is now completed and ready for occupancy.——On August 21 the Kansas City Council voted an appropriation of $150,000 from the hospital fund to be used in the construction of a new general hospital.

NEBRASKA.

Hospital Site Bought.—A large new site has been purchased for the Clarkson Memorial Hospital, Omaha, at Twenty-first and Howard Streets.

Asked to Cease Practice.—Dr. George A. Angus, Lincoln, who was charged with cheating during his examination before the State Board of Medical Examiners, has been notified to cease practice, pending a rehearing of his case.

Peculiar Decision.—The Supreme Court holds that the State Electro-Medical Institute of Omaha can not be licensed to practice medicine as a corporation, but that, as a corporation, it may make contracts with physicians to do business and may collect for the services thus rendered.

Personal.—Dr. John K. Maxson, Lincoln, was committed to the Nebraska Hospital for the Insane, Lincoln, August 29.——Dr. Sidney S. Wilson, Nebraska City, is spending the summer in Europe——Dr. F. H. Redmond, Tecumseh, has been appointed ward physician in the incurable ward of the State Hospital at Osawatomie, Kan.——Dr. Edwin W. Cook, Plattsmouth, has been appointed head physician, for Nebraska, of the Modern Woodmen of America——The residence of Dr. Ulysses S. Ammerman, Reynolds, was totally destroyed by fire, August 26. The loss is about $2,000, with no insurance.——Dr. James W. B. Smith, Albion, has been appointed assistant surgeon, N. G., Neb., with the rank of first lieutenant, and has been assigned to the Second Infantry.

NEW YORK.

Permit Refused.—Thomas F. O'Brien, Buffalo, against whom a "no bill" was returned by a grand jury on the charge of violating the tenement laws, applied to the health department for a permit to run a lodging house and was denied.

Fraud Order Issued.—A fraud order has at last been issued by the government against the New York Institute of Physicians and Surgeons and "Prof." Thomas E. Adkins, its president, of Rochester. They advertised in newspapers and magazines extensively of their wonderful "vitopathic" cures (?).

All Bids Rejected.—The board of award of the Treasury Department, which has been examining the bids for the construction of the Marine Hospital to be built in Buffalo, has just reached the decision to report in favor of the rejection of all the bids. At present the Marine Hospital patients are being cared for by contract at the new Niagara Hospital.

Buffalo Personals.—Dr. Roswell Park has subscribed $1.000 for the formation of a school of liberal arts at the University of Buffalo, and Dr. Edward Clark $100 for the same purpose.——Dr. Benjamin G. Long has returned from the Pacific Coast.——Dr. Monroe Manges has returned from Atlantic City.——

Dr. Irving P. Lyon returned from a month's stay in the Adirondacks.——Dr. Allen A. Jones has returned from the coast of Maine.——Dr. Ray H. Johnson is taking a trip up the lakes.——Dr. Lawrence G. Hanley has resigned from the civil service board.

Fair for German Hospital.—A gift fair for the benefit of the German Hospital is to be held in the fall. Arrangements are being made on a large scale and it is expected not only that the entire indebtedness of the hospital will be paid, but that sufficient cash will be forthcoming to erect nurses' quarters and a new wing for private wards.——At a recent meeting of the medical staff sufficient was subscribed to pay for a team and ambulance.

New York City.

Bequests.—The German Hospital, Brooklyn, has received a bequest of $5,059.87 from the estate of Christopher Kunzel, deceased, and one of $1,000 from the estate of the late Mrs. Julie Achelis.

Laboratory Almost Ready.—The new laboratory of the Health Department at the foot of East Sixteenth Street, which has been in process of construction for a long time, will be ready for occupancy in a few days.

Personal.—Dr. Albert H. Ward, retiring house surgeon of St. Catherine's Hospital, Brooklyn, on leaving the hospital was given a dinner, at which he was presented with a case of surgical instruments.——Dr. Henry A. Baker, New York City, has been made medical director of the Washington Life Insurance Company.

OHIO.

Donations.—John M. Niles has presented to the Champaign Sanitarium his property, valued at $75,000, retaining a life interest in the estate.——The floral festival recently held in Van Wert netted $2,000 to the Van Wert County Hospital.

Hospital Notes.—Dr. William J. Gillette has erected a hospital in Toledo to accommodate 75 patients, which he expects will be ready early in the spring.——Delaware County Hospital, at Delaware, which is now almost complete, will be ready to receive patients early next month.

New Medical Society.—The physicians of Wellsville and East Liverpool have organized a society to be known as the Wellsville and East Liverpool Academy of Medicine. Dr. William M. Calhoun, East Liverpool, was elected président, and Dr. Arthur B. Holland, Wellsville, secretary.

Personal.—Dr. William H. Kanauss, Newark, who was accidentally shot while at target practice last May, has retired from personal work, as he has not yet fully recovered from the effect of the wound.——Dr. Louis L. Syman, Springfield, has resigned as a member of the hospital staff and has been succeeded by Dr. Wallace Ort.

The Afflicted.—Dr. D. B. Van Buren Burkett, Columbus, who was seriously injured a few weeks ago in a street car accident, is convalescent and will soon resume practice.——Dr. Arthur E. Hobson, Flushing, sprained his ankle in jumping from his buggy August 10.——Dr. Lewis J. Feid, Cincinnati, was thrown from his buggy in a runaway accident August 20 and painfully bruised.——Dr. William H. Booth, Salem, is seriously ill with typhoid fever at Lakeside.——Dr. Charles E. Reese, Lancaster, was thrown from his buggy in a runaway accident August 19 and seriously injured.——Dr. John A. Wright, Toledo, was seriously injured by the overturning of his buggy August 24, sustaining bad cuts and bruises.——Dr. Jerome Bland, Bucyrus, is in a serious condition from a recent cerebral hemorrhage.

OREGON.

Medium Fined.—On July 29, Judge Cameron found Louis Schlessinger, Portland, a medium who was accused of practicing medicine without a license, guilty, and fined him $75.

New Building for Medical Department.—Plans have been completed for the erection of a $15,000 building for the medical department of Willamette University, Salem. The building will be of brick and three stories high.

Health Board Changes.—The Mayor of Portland, Dr. Harry Lane, has appointed Drs. Esther C. Pohl, Andrew J. Giesy and George F. Wilson as members of the Medical Board of Health, succeeding Drs. Mae H. Cardwell, William Jones and James F. Bell.

Surgery Dedicated.—A new surgical department for the Good Samaritan Hospital, Portland, was dedicated August 8. Bishop B. Wistar Morris presided, and Drs. Simeon E. Josephi and George F. Wilson delivered addresses. The surgical equipment was presented to the hospital by members of the Couch family at the cost of several thousand dollars.

PENNSYLVANIA.

Philadelphia.

Will Study Cholera.—Dr. Fairfax Irwin, chief of the United States Public Health and Marine-Hospital Service in this city, and chief of the Reedy Island and Delaware Breakwater quarantine stations, has been ordered to Hamburg, Germany, to study the cholera situation.

Bequests.—By the will of Hannah Burgess, St. Mary's Hospital will receive $300.——By the will of Thomas Woolman, the Frankford Insane Asylum receives $2,000; Red Bank Sanitarium Association, $1,000, and the Children's Country Week Association, $1,000.——By the will of Louisa Baumann each of the following institutions receives $1,000: German Hospital, Orphans' Home of Germantown, and the Philadelphia Home for Incurables.

Personal.—Dr. E. J. Beardsley sailed for Europe on the *Friesland*, September 2.——Dr. Francis D. Patterson has been appointed examining physician of the State Constabulary.——Dr. Joseph Roberts, Camden, N. J., has been appointed skiagrapher in St. Joseph's Hospital, vice Dr. Flynn, resigned.——Dr. John Stanton has been appointed assistant chief of the out-patient nose and throat department of the Children's Hospital.——Dr. J. L. Harkness has been appointed chief of the laryngological department of Jefferson Hospital.

Health Report.—The deaths from all causes during the week aggregated 437, or one less than the number reported the three previous weeks, a coincidence never before known in the health bureau's history. For the same period of last year the deaths numbered 371. There is a decided decrease in contagious diseases, particularly typhoid fever. The principal causes of death were as follows: Typhoid fever, 15; diphtheria, 5; whooping cough, 7; consumption, 41; apoplexy, 20; heart disease, 25; acute respiratory diseases, 29; enteritis (under 2 years), 45; enteritis (over 2 years), 9; Bright's disease, 36; appendicitis, 4; injuries, 13; suicides, 5. There were 117 cases of contagious disease reported, with 20 deaths, as compared with 142 cases and 15 deaths for last week. The deaths from typhoid fever numbered 15, an increase of 5 over those of last week. There were 62 cases reported during the week, as compared with 82 cases the previous week, and 125 three weeks ago.

UTAH.

State Hospital Changes.—Dr. David H. N. Calder has been appointed medical superintendent of the State Mental Hospital, Provo, vice Dr. Milton H. Hardy, removed——Dr. Frederick Clift, Heber, has been appointed assistant medical superintendent of the State Mental Hospital, Provo.

Hospital Notes.—The White Cross Sanitarium and State Emergency Hospital has been established in Salt Lake City, at 253 S.W. Temple St.——A building permit has been issued for a brick addition to the Dr. Groves Latter Day Saints Hospital at Salt Lake City, to cost $10,000.

Personal.—Dr. John S. Gordan, Ogden, has been appointed physician of Weber County, vice Dr. Harry B. Forbes——Dr. Charles F. Wilcox, Salt Lake City, was struck over the eye by a horseshoe thrown by a boy and suffered an extensive scalp wound——Dr. Chauncey M. Benedict, Salt Lake City, has been reappointed assistant surgeon general of the National Guard of Utah.

VERMONT.

Personal.—Dr. Marcello Hutchinson, superintendent of the State Hospital for the Insane, Waterbury, has been seriously ill with nephritis, but is now improving.——Dr. Charles L. Ervin, Newport Center, has been appointed trustee of the State Asylum for the Insane at Waterbury.

Hospital Officers Elected.—At the annual meeting of the St. Alban's Hospital Association the following officers were elected: Vice-president, Dr. Theodore R. Waugh; secretary and clerk, Dr. E. I. Brown, and managers of the institution, Drs. Theodore R. Waugh and Dr. Stephen W. Paige.

Impure Food.—The State Board of Health has been investigating the food products for sale there, making 118 tests. Of 38 samples of maple sugar and syrup, 5 were adulterated; 2 samples of oysters had boric-acid preservatives; 12 out of 15 samples of lemon extract were impure, 3 containing coal-tar dyes; other adulterated products were, vanilla extract, baking powder and ginger champagne.

Dedication of College.—The dedication of the new medical college building of the University of Vermont, Burlington, took place June 27. The building was presented to the Board of Trustees by Dr. Henry C. Tinkham, dean of the medical department and chairman of the building committee. The building was accepted in behalf of the Board of Trustees by Mathew H. Buckham, president of the University. A history of the medical department was then given by Dr. J. H. Woodward, class of 1882, New York City.

VIRGINIA.

Hospital Notes.—Mrs. Thomas F. Ryan will shortly begin the erection of a hospital in Lynchburg, three stories high and fireproof throughout, to cost $100,000——A new story has been added to St. Luke's Hospital, Richmond.——The Dunlop Memorial Hospital, Petersburg, which has just been completed and is now ready for use, was erected by Mrs. Mary Corling Dunlop in memory of her husband, the late David Dunlop—— The new King's Daughter Hospital, Staunton, erected at a cost of $20,000, was dedicated July 1.

Personal.—Dr. Stuart McGuire, Richmond, has been made president of the University College of Medicine, vice Dr. Allison Hodges, resigned——Dr. Robert H. Whitehead of the medical department of the University of North Carolina, Chapel Hill, has been elected professor of anatomy and dean of the University of Virginia Medical Department, Charlottesville—— Dr. Joseph M. Burke, Petersburg, has been appointed general surgeon of the Seaboard Air Line——Dr. Edward L. W. Ferry, Miller's Tavern, was injured in a runaway accident, August 6, sustaining a fracture of the jaw.

GENERAL.

Plague at Panama.—A case of plague which terminated fatally is reported from La Boca.

Cholera in Manila.—Eleven new cases of cholera have been reported from Manila. The total number of cases since the outbreak is reported as forty, with twenty-five deaths.

Quarantine Against Panama.—The president of Nicaragua has issued a proclamation declaring the ports of that country closed to all vessels from Panama because of reports of the presence of bubonic plague in the latter republic.

New York and New England Association of Railway Surgeons.—The fifteenth annual meeting of this association will be held at the Academy of Medicine, New York City, Nov. 17-18, 1905, under the presidency of Dr. G. P. Conn, of Concord, N. H. One-half day of the meeting will be devoted to a symposium on "Injuries to the Head and Spine."

Mississippi Valley Medical Association.—At the next meeting of the Mississippi Valley Medical Association, to be held at Indianapolis, Ind., October 10-12, the annual addresses will be delivered by Dr. Arthur R. Edwards, Chicago, on "Certain Phases of Uremia, Their Diagnosis and Treatment," and by Dr. W. D. Haggard, Nashville, Tenn., on "The Present Status of Surgery of the Stomach."

Pacific Coast Surgeons Meet.—At the third annual meeting of the Pacific Association of Railway Surgeons, San Francisco, August 17, the following officers were elected: President, Dr. Thomas W. Huntington, San Francisco; vice-presidents, Drs. Thomas C. McCleave, Berkeley, Cal., and William O. Spencer, Huntington, Ore.; Secretary, Dr. James P. Dunn, Oakland, Cal., and treasurer, Dr. Frank L. Adams, Oakland.

Seaboard Air Line Surgeons Meet.—Surgeons of the Seaboard Air Line recently met in annual convention at Old Point Comfort, Va., and elected the following officers: President, Dr. Gottlob A. Neuffer, Abbeville, S. C.; vice-presidents, Drs. W. C. Monroe, Sanford, Fla., Gray G. Holladay, Portsmouth, Va., and Jarrett W. Palmer, Ailey, Ga.; and chairman of executive committee, Dr. Southgate Leigh, Norfolk, Va. The 1906 meeting will be held in Savannah, Ga.

American Roentgen Ray Society.—The sixth annual meeting of the American Roentgen Ray Society will be held at the Johns Hopkins Hospital, Baltimore, September 28-30. The Stafford Hotel has been selected as headquarters. The program includes papers by foreign as well as by American workers in this special department of medicine. All regular practitioners are eligible to membership in the society and are invited to attend the scientific sessions and to view the exhibition of apparatus. Further information can be obtained from the secretary, Dr. Russell H. Boggs, Empire Building, Pittsburg, Pa.

Cumberland Valley Medical Association.—At the third annual meeting of this association held at Mount Holly Park, Md., the following officers were elected: President, Major James Evelyn Pilcher, M.D., Carlisle, Pa.; vice-presidents, David F. Unber, Mercersburg, Pa., Augustus C. Maisch, Hagerstown, Md., and George C. Borst, Newville, Pa.; secretary, Dr. John J. Coffman, Scotland, Pa.; assistant secretaries, Drs. Philip R. Koons, Mechanicsburg, Pa., Henry C. Devilbiss, Chambersburg, Pa., and DeWitt C. R. Miller, Mason and Dixon, Pa.; and treasurer, Dr. John J. Koser, Shippensburg, Pa. Major Pilcher presented a memoir on the "Medical Lessons in the Far East," in which he illustrated by the success of the Japanese medical department, the importance of state medicine and of the active participation of physicians in public affairs. At the annual banquet Major Pilcher presided as toastmaster.

Postal War on Medical Pretenders.—According to the Philadelphia *Record*, the postal authorities are attempting to rid Philadelphia of "quack" doctors, fake medical men, etc. On August 28 over a score of persons "who have been advertising in a manner which the authorities consider objectionable were summoned to the postoffice to identify themselves before they could secure mail addressed to them." All the visitors were questioned by the postal inspectors and warned against carrying on their business through the medium of the mails. The position of most of them is such that the federal authorities can take no legal steps, because no overt act has been committed of which the authorities have any knowledge. Several of those summoned had written very plain letters, ostensibly to some woman, but really to the inspectors, offering to perform an illegal operation for a special price; but it is necessary to show that an operation was performed in consequence of the writing of the letter. The empty promise to commit a prohibited act for pay does not constitute a crime. According to the *Record*, publications which have been printing the offending advertisements were also notified by the postal authorities that they must cease publishing them or suffer prosecution.

THE YELLOW FEVER SITUATION.

Louisiana.—The situation among the fishing settlements in Jefferson parish has become very bad.——On the sugar plantations the disease still spreads.——Quarantines are being modified.——During the week the following new cases have been reported: Havelona plantation, 6; Patterson, 16, 2 deaths; Port Barrow, 2; St. Rose, 19; Amelia, 12 and 1 death; Bayou Bœuf, 9; Houma, 2; Ardoyni, 3; Kenner, 19, 2 deaths; Hanson City, 13, 1 death; St. Bernard, 7; Point La Hoche, 2; Pecan Grove, 8, 1 death; Belmont, 1; Elizabeth, 1, 4 deaths; Donaldsonville, 4; St. Gabriel, 1; Alexandria, 1; Smoke Bend, 2; Shaffer plantation, 30; [illegible]endale, 1; Belle Grove, 6; Terrebonne parish, 2, 1 death; Riverside (to August 31), 134, 5 deaths; Leeville (to September 1), 321, 29 deaths; La Place, 7.——Dr. Milton F. Smith, health officer at Shreveport, writes that only three cases have occurred there, with one death. All the patients came from New Orleans and were held in detention.

New Orleans.—Surgeon White has ordered compulsory fumigation of houses, including those whose occupants are out of the city.——As a step to educate the public and in addition to lectures, the city newspapers have reprinted in full the medical papers recounting the steps in the discovery of mosquito conveyance.——The federal officers on August 22 decided to put a quietus on Dr. Leach and the arsenic fad. It was published that he had, in 1890, urged arsenization for yellow fever, cholera and bubonic plague. Surgeon-General Sternberg's unfavorable report was reprinted. Further, Surgeon White showed that arsenized persons were then under treatment for yellow fever. This proved to be too much for Dr. Leach, who beat a retreat to Minnesota, bewailing his "unfair treatment." It is estimated that up to August 22 some 7,000,000 arsenic tablets "prepared under the direction of Dr. Reginald Leach, arsenical expert," had been taken by New Orleans people in the last two weeks. Just before he left his supports voted to aid the federal service in all its work, thus closing the arsenic incident.——The Orleans Paris Medical Society has issued and distributed an attractive and practical pamphlet addressed to physicians, trained nurses and others entrusted with the care of yellow fever cases.——New Orleans people who have been away on vacations are now freely returning.——Dr. J. T. Wolff and Dr. L. A. Meroux have the fever.——All the authorities on September 1 joined in signed statements that the crisis was past and the fight won.——On September 2 there were but 29 new cases, with 3 deaths. Total cases to September 3, 2,037; total deaths to September 3, 294; death rate, 14.4 per cent.——Dr. Philip Berge was arrested September 2 for failure to report 2 cases of yellow fever.——Surgeon White has joined with the New Orleans Medical Society in asking that moving day be postponed from September 1 to October 1.

Other States.

Arkansas.—Governor Jefferson Davis annulled the permits and certificates of health issued by the State Board of Health, ordered that no attention be paid to any sort of certificate of health, ordered that no railroad crews cross the boundary line from Louisiana, and refused to permit Dr. Goldberger of the United States Public Health and Marine-Hospital Service to pass by rail over a few miles of Arkansas territory on an errand of mercy to another point in Louisiana. Dr. G. M. D. Cantrell, president; Dr. R. B. Christian, secretary, and Drs. W. H. Miller and W. B. Hughes at once resigned from the State Board of Health.

Florida.—Three cases, all among Greeks, of yellow fever were announced at Pensacola on August 29. Up to September 2, 8 cases had been found there, and there had been one death.

Illinois.—In the Springfield *Register* of August 25 Secretary Egan of the State Board of Health was quoted as pronouncing as "an unmitigated lie" the story of a case of yellow fever at Brownsville.——A car of 35 Paducah residents from Chicago is said to have been held in Cairo, locked in the car, for a number of hours.

Kentucky.—Paducah has not yet defied the State Board of Health by quarantining, but has appointed a train inspector and has ordered that only the health officer may give certificates of health.

Mississippi.—The Greek who died at Gregory, Mo., of yellow fever was but recently arrived from Natchez, Miss., but on August 21 Natchez assured the world that "there has not been the slightest suspicion of yellow fever here since 1898." Yet on August 27 cases were reported from Natchez, the report denied by the health officer on August 27, and on August 29 Surgeon Wasdin, Marine-Hospital Service, positively diagnosed 9 cases and noted 5 suspects. Since then 2 additional cases have been reported.——Dr. John Guiteras on August 30 made a positive diagnosis of yellow fever in two white persons, neither of whom, it is said, had been out of Vicksburg for two months, and both of whom were within the protection of a close shotgun quarantine. Five more were found in the next two days.——Gulfport, which for the last time on August 21 announced that it had no cases of the fever, has since reported 16 cases, all occurring within quarantine.——Mississippi City was visited August 13 by Dr. Sanders and Dr. Mohr of the Alabama health board, who thought they found a suspicious case. Surgeon Wasdin saw the patient a day later and said it was not yellow fever, but a local physician asked him to see another case which was yellow fever, and then others were unearthed. As in some other places, the cases were so mild that they easily escaped diagnosis.——The Mississippi state notification law is simple and effective if enforced, providing $50 fine and ninety days in jail (the statutory penalty for a misdemeanor) for any physician who fails immediately to notify the secretary of the State Board of Health of any case of yellow fever, cholera, dengue, smallpox, or any other virulent epidemic contagious disease.——Governor Vardaman on September 1 commenced the work of the Marine-Hospital Service and asked for its help at Natchez and Vicksburg. He also has recently recommended more rational quarantines, especially not to restrict movement of freight. His general attitude has become decidedly helpful.

Oklahoma and Indian Territories.—On August 26 the state quarantined against Louisiana.——Indian Territory fears it has a case of yellow fever at Maysville.

Pennsylvania.—Dr. Thomas J. Mays, Philadelphia, had a letter in the New York *Sun* of August 29 calling the mosquito etiology of yellow fever "one of the most disastrous of medical errors," and writing of "the presumptuousness of the germ theory."

Tennessee.—Memphis was much aroused by Surgeon White's report that a Memphis woman fell ill with yellow fever on the day of her arrival in New Orleans. Quarantines against Memphis followed. Governor Vardaman of Mississippi and Secretary Hunter of the state health board went to Memphis to investigate. Charges against Surgeon White were threatened, but the date on the Memphis health certificate held by the patient appeared fully to substantiate Dr. White's conclusion.——Governor Cox notified the quarantine officials of Grand Junction, in Hardeman County, not to interfere with transfer of passengers from train to train, telling them he would send militia there if the interference continued.——The inspection service on trains in and out of Chattanooga has been assumed by the United States Public Health and Marine-Hospital Service at the request of the State Board of Health.——Memphis had a sensational flare-up over apparent conflict of authority between the police and the health officer, which appeared as a misunderstanding and which resulted in the health officer keeping his own inspectors.——Governor Cox on September 1 sounded the governors of southern states as to a conference on immigration and quarantine.

Texas.—The state quarantine office at Beaumont has been closed.——The Mexican border is closely watched.——The banks are not taking up the deficiency bonds offered by the state health officer.

FOREIGN.

Russian Red Cross.—The Russian Red Cross has spent about $11,000,000 in the course of the present war. During July the total expenses of its various hospitals were only $150,000, but they are much higher after a battle.

Asiatic Cholera in Prussia.—Cholera seems to be spreading in West Prussia. Twenty-two cases and six deaths are reported. Twelve sanitary stations have been established along the Weichsel river, and the Prussian government is sending physicians from other ports of Germany to assist the local health authorities.

International Congress of Anatomy.—The first International Congress of Anatomy was held recently at Geneva. The following anatomic societies took part: The anatomic societies of Great Britain and Ireland, the German *Anatomische Gesellschaft*, the Association of American Anatomists, the *Unione Zoologica Italiana*, and the French *Association des Anatomistes*. Nearly 200 individuals attended. The scientific proceedings were of great interest. The next meeting will be held at Bordeaux, France, at Easter, 1906, under the presidency of Professor Viault.

Pharmacology

Secrecy.—Whatever is secret is suspicious; this especially applies to medicines.

Patent and Secret Proprietary Medicines.—Some weeks ago we published a letter from Mr. Bok of the *Ladies' Home Journal* in which he appealed to physicians for aid in the fight against patent medicines. Since then some correspondence has passed between Mr. Bok and the Editor of The Journal. The last letter received was accompanied with a number of advertisements clipped from medical journals—and we regret to say some were from The Journal of the American Medical Association, one of which is still there and probably will be till the contract expires—with a query, "What is the difference between these and 'patent medicines'?" No reply has been sent, as we are not able to answer. If any of our readers can tell the difference between most of the secret proprietary medicines that are advertised to physicians in medical journals and patent medicines that are advertised to the public in newspapers, we hope they will inform us so that we can reply to the editor of the *Ladies' Home Journal*.

Reading Pages for Sale.—The following is a copy of a letter in our possession, the original of which was sent to a manufacturing pharmaceutical firm by a monthly medical journal, which is supposed to be up to the average at least in its ethical conduct. It shows clearly the *Deus ex machina* in the administration of certain medical journals:

> Gentlemen:—We hope this letter will induce you to place a special contract for our special June issue, which is to be issued in honor of the Portland meeting of the American Medical Association. This issue will have a circulation of 12,000 copies, and will be read by the best men in the profession.
>
> You should take a page or two pages for a special advertisement of your ————. The cost for one page is $25, for two pages $40. *Should you place a contract for this issue we shall publish a three-hundred-word report in your interest in our reading columns.* We know it would be to your advantage to be in a special issue that will reach the leading men of the profession.
>
> We trust you will be with us, and thanking you for the courtesy of an early reply, we beg to remain,
>
> Yours sincerely,

Official Carlsruhe Warning Against Irregular Practices.—THE JOURNAL has mentioned from time to time the official notices published by the municipal authorities of Carlsruhe warning the public against certain irregular practitioners and against proprietary medicines, etc., which are advertised in the local press or on the billboards. The list includes a number of American nostrums. The instigator of the warnings is the *Stadrath* or mayor, who is earning the encomiums of all interested in protecting the public health and pocket. He has recently had all the warnings collected and published in a booklet of 148 pages, which is offered for sale by the publishing house of G. Braun, Carlsruhe. The *Deutsche med. Wochft.* suggests that this booklet deserves a place on the table in the waiting room of every physician. It will bear translating into all languages, as many of the nostrums it describes are advertised in all civilized countries.

The Control of Proprietary Remedies.—A serious attempt is being made by the Council of Pharmacy and Chemistry of the American Medical Association to control the various secret remedies which are put before the medical profession in that country. The following particulars of the scheme are taken from a copy of the rules for which we are indebted to the courtesy of a well-known firm of druggists. It appears that in the United States of America there is a rapidly growing sentiment against the increasing legion of secret preparations. THE JOURNAL of the American Medical Association conceived the idea of forming a board of control, to be composed of pharmacists and chemists, which should pass in review all medicinal preparations offered for insertion in the advertising pages of that journal. That idea has been modified by making the functions of the proposed board similar to those of the Committee of Revision of the United States Pharmacopeia. The work is to be taken up where that committee left off, and a description of the unofficial preparations which conform to the required standard will be published in the form of a book to be entitled "New and Unofficial Remedies." In other words, it will form an extra pharmacopeia, giving useful details of reputable preparations. The board of trustees of the American Medical Association has authorized the formation of an advisory board, to be known as the Council of Pharmacy and Chemistry, to carry out the work. The council is composed of men eminent in medicine and pharmacy as writers, teachers and research workers. The Council proposes immediately to examine into the composition of the various medical preparations that are offered to physicians, and are not included in the United States Pharmacopeia or in other standard text-books or formularies. In the rules here given the term "article" is applied to any drug or preparation used in the treatment of disease.

(Here follow the Rules of the Council.)

The manufacturers of legitimate preparations have nothing to fear from this action on the part of the American Medical Association. On the contrary, they are to be congratulated that the Association has undertaken to separate the wheat from the chaff. In this country, medical practitioners are overwhelmed with samples and literature of preparations which may be good, bad or indifferent. The composition is not usually disclosed and the habit is formed of throwing all aside, the good and the bad together. The list of unofficial preparations of known compositions and strength when published by the American Medical Association should prove valuable to the medical profession and a safeguard to the public. Measures of similar character might with advantage be adopted in this country. It should not be difficult to find funds for the purpose, especially if a working arrangement were made with the American Medical Association whereby each country should investigate its own products to avoid covering the same ground twice.

Though the rules adopted by the American Medical Association are good and worthy of imitation, they are not sufficiently comprehensive to nullify entirely the present system, which leads to self-drugging. The weak points are not hard to find. Let it be imagined that a practitioner prescribes a preparation which is labeled on the lines laid down in the rules as follows: "A hypnotic and sedative, containing three-quarters of a grain of morphin in 110 minims. Dose 5 to 30 minims." Unless the practitioner initials and dates the prescription whenever he requires it to be repeated there is nothing to prevent the repetition of the prescription dozens and even hundreds of times. Pharmacists should be requested to consider it a breach of etiquette to copy a prescription for a patient or to make it up for any other person. Again, it should be a rule that no proprietary medicine should be delivered to the patient in the original package in order to prevent the purchase of further supplies without a prescription. The excellent rules of the American Medical Association should therefore be supplemented by further rules for the guidance of pharmacists on these points touching the repetition of prescriptions and the transference of medicines from original packages before delivery to the patient. A set of rules of this kind, supplemented by a more complete code of pharmaceutical etiquette, would benefit alike the public and the medical profession and should find a place in the system of medico-pharmaceutical ethics.

Again, it is obvious that another weak point in the proposed scheme is that it will almost of necessity fail to touch the very class of secret or proprietary remedies which are productive of the largest amount of self-drugging—viz., so-called "patent" medicines produced for the express purpose of appealing to the credulity of the multitude. Since the proposed list is rightly intended solely for the use of medical men the failure to secure recognition will hardly be of any material detriment to the sale of such preparations which will still be advertised in the lay journals and reach the public for whom their proprietors cater.—(Editorial, *The Lancet*, Aug. 12, 1905.)

[*The Lancet* is correct in its last paragraph. The patent-medicine evil should be assailed, but the proprietary nostrum must first be eradicated. Before we can proclaim war on patent medicines, with energy and with a clear conscience, it will be necessary for us as physicians to rid ourselves of the proprietary nostrum evil by ceasing to prescribe preparations that are nothing more nor less than patent medicines. Before medical journals can criticize newspapers for carrying patent-medicine advertisements, they must themselves refuse advertisements of similar preparations, even though these be dignified with the name of proprietary medicines. THE JOURNAL of the American Medical Association itself is not yet entirely free from this reproach, but it is freeing itself as rapidly as undesirable contracts expire.—ED.]

Correspondence

The Construction of the Panama Canal, a Sanitary Problem.

ANN ARBOR, MICH., Aug. 31, 1905.

To the Editor:—In view of the fact that yellow fever is prevalent in Panama, and in view of the statement that more than 60 per cent. of the people in the Canal Zone are now infected with malaria, and in view of the report of the presence of the plague on the isthmus, it seems unnecessary to argue that the method followed by this government up to the present time, in the construction of the canal, has not been characterized by wisdom. Please permit me to offer the following statements, which, in a condensed way, represent my views concerning the means that should be adopted in the carrying out of this great enterprise. These suggestions I have hurriedly condensed and will state as follows:

1. The first thing that should be done is to render the Canal Zone a habitable place. That this has not been done, although we have been in possession for more than two years, must be admitted by all.

2. The engineering problem involved in the construction of the Panama canal is of secondary importance compared with the sanitary problem which must be met.

3. The French failed to complete the canal, not because they had not the engineering ability necessary to do it, but because they were wholly unable to cope with the insanitary conditions existing in that locality.

4. In converting the Canal Zone into a habitable location, engineering skill must be employed, but it will be only a

secondary and a subordinate part of the work that must be done in accomplishing this great task.

5. In rendering the Canal Zone habitable, sanitary authority should be supreme and should control and direct all other agencies.

6. A thoroughly equipped scientific laboratory, provided with the best obtainable in the way of apparatus and men, should be provided and put into operation on the Isthmus of Panama.

7. The work so auspiciously begun by the lamented Reed and his colleagues should be continued.

8. The number of men employed on the isthmus during its sanitary development should be as small as is consistent with efficiency.

9. These men should be protected from the mosquito by mechanical devices applied to the individual as a part of his dress, or to a small group of men in the form of areas covered by mosquito bars.

10. During the sanitary development travel between this country and the isthmus should be as nearly as possible confined to the winter months, and should at all times be restricted and closely guarded in every scientific way in order to prevent the importation of infection into the United States.

11. Expert sanitary workers, together with expert entomologists, should be employed in the scientific laboratory and should be given every facility which their investigations may demand.

12. The mosquito should be subjected to the closest inspection with the purpose of securing its extinction.

13. The conditions under which the mosquito breeds and the effect of insecticides on it at this and other times should be carefully and scientifically investigated.

14. The parasites that infest the mosquito should be studied and, if found desirable, be scattered all over the isthmus. In this connection I wish to state that Dr. Lamb, of Owosso, Mich., who served some years with the army in the Philippines, has informed me that there is a louse that feeds on certain mosquitoes and destroys them in a few hours. Whether this could be used in the extermination of the stegomyia or not can be determined only by experiment and observation.

15. Vaccination with a modified virus of yellow fever should be studied most thoroughly, because in this direction there is the possibility of securing immunity to the disease.

Certainly the canal can be built without attention to sanitation, but if the method followed up to the present time be continued it will cost thousands of lives, and, as the present epidemic in the southern states shows, it will, with greater or less frequency, extend to this country and involve greater or less areas.

An attempt to dig the Panama canal is like stirring up a nest of poisonous hornets, only that the comparison is a weak one. In this case the disturbed poisonous insects must get their poison from man and, having done this, they may pursue their foe even to the distant parts of the earth. Shall we continue to feebly whip the wasp's nest and drive the vicious insects abroad, or shall we wait until all are quietly in their house and then destroy them before they can do us harm? The former is the "strenuous," the latter the sensible way to do it. Very truly yours, V. C. Vaughan.

A Stereoscopic Camera.

Denver, Colo., Aug. 30, 1905.

To the Editor:—In making portraits of my patients for the purpose of keeping an accurate record of their condition, I have found it of great advantage to make use of a stereoscopic camera. As ordinarily furnished, these cameras are hardly satisfactory for the purpose, as the portrait is rather small to show details of many lesions.

I put on each lens a little portrait attachment sold by photo dealers; this enables me to come close to the subject, giving me a good-sized portrait; but in coming close the images are thrown almost off the plate: this is overcome by putting on the front of the lens carrier a brass sheet, in which a hole has been cut in front of the lenses, and over these holes I placed ten-degree-plane prisms with the bases out, thus bringing the images back on the plate. I make these portraits of such a size that they are just right for contact printing on to a lantern slide negative, in this way avoiding any need for enlarging or reducing before making slides.

I present this scheme, thinking it may be of use to your readers. G. H. Stover, M.D.

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of August, 1905:

ALABAMA.

Howell, Wm. E., Haleyville.

ARIZONA.

Cowie, A. M., Kingman.
Rowell, H. J., Valverde.

ARKANSAS.

Howton, O., Osceola.

CALIFORNIA.

Jordan, Alfred B., Dale.
Z. Levin, San Francisco.
Swindt, Jos. K., Pomona.
Tully, J. J., Stockton.

COLORADO.

Auerbach, L., Denver.
Braden, J. M., Carbondale.
Christopher, D. I., Colo. Springs.
Krohn, H. N., Denver.
Prewitt, F. E., Denver.

GEORGIA.

Calhoun, A. T., Cartersville.
Darby, John I., Columbus.
Wahl, F., Savannah.

PHILIPPINE ISLANDS.

Biggar, J. H., Manila.

ILLINOIS.

Bressler, F. B., Chicago.
Brougham, E. J., Chicago.
Ehrmann, F. J. E., Chicago.
Frank M., Chicago.
Grim, U. J., Chicago.
Grimm, L. A., Chicago.
Heald, J. E., Peoria.
Hayes, P. B., Chicago.
Jamieson, J. K., Chicago.
Kaeser, A. F., Highland.
Lee, E. J., Valmeyer.
Lovewell, C. H., Chicago.
Laibe, F. J., Chicago.
Moore, F. D., Chicago.
McCuaig, W. J., Chicago.
Morris, R. W., Chicago.
Osher, J. C., Chicago.
Pugh, C. E., Chicago.
Panton, L. A. C., South Chicago.
Rulien, F. W., Joliet.
Ruthenberg, E. B., Chicago.
Stewe, H. M., Chicago.
Taylor, E. K. M., Le Roy.
Vorsanger, R., Chicago.
Westman, Carl, Chicago.
Windmueller, E., Woodstock.
Wangeline, H. E., Belleville.
Wilkinson, L., Chicago.
Zimmerman, H. S., Cameron.

INDIANA.

Brown, L. E., Ft. Wayne.
De Vaux, E. F., Ft. Wayne.
Layman, D. W., Indianapolis.
Stewart, J. W., Logansport.
Titus, Chas., Warrington.

INDIAN TERRITORY.

White, J. H., Muskogee.

IOWA.

Coplin, L. S. C., Harlan.
Krejsa, O., Cedar Rapids.
Linehan, C. M., Dubuque.
Lord, R., Hawarden.
Norman, W. G., Dow City.
Stanton, J. H., Chariton.

KANSAS.

Caswell, C. E., Wichita.
Leverich, L., Solomon.
Ross, H. R., Sterling.
Walker, O. D., Salina.

KENTUCKY.

Adams, Edw., Paducah.
Hibbitt, Chas. W., Louisville.

LOUISIANA.

Tucker, J. A., Baton Rouge.

MAINE.

Milliken, H. E., Waterville.

MASSACHUSETTS.

Chadwick, H. D., Waltham.
Hassett, J. J., Lee.
Strong, F. F., Boston.
Seymour, F. W., Boston.

MICHIGAN.

Busch, U. S. C., Jennings.
Barnett, G. G., Ishpeming.
Glenn, Thos. S., West Branch.
Hooper, S. E., West Branch.
Kinsey, F. C., Three Rivers.
Millard, F. A., Detroit.
Roach, F. T., New Port.
Street, E. L., Wheeler.
Teeple, M. L., Sand Lake.
Brigham, G. S., St. Cloud.
Benniou, P. H., Merriam Park
Bissell, F. S., Maple Lake.
Brabec, F. J., Perham.
Gates, G. L., Winona.
McDougald, D. W., Minneapolis.
MacDonald, A., Morristown.
Nootnagel, C. F., Minneapolis.
Nickerson, B. S., Glencoe.

MONTANA.

Gilham, G. W., Townsend.

MISSOURI.

Clark, W. J., Maysville.
Carman, R. D., St. Louis.
Gaines, J. W., Kansas City.
Hamel, A. H., De Soto.
Lippe, M. J., St. Louis.
McKay, H. S., St. Louis.
Moore, W. G., St. Louis.
Yates, P. C., Neosho.

NEBRASKA.

Chapman, A. J., Hastings.
Dent, G. B., No. Platte.
Sadler, W. W., Bee.
Worthman, E. H. Louisville.

NEVADA.

Ascher, J. A., Sparks.
Moore, Wm. L., Verdi.

NEW HAMPSHIRE.

Lanouette, Jos. E., Manchester.
Wilkins, R., Concord.

NEW JERSEY.

Lamont, G. F. N., Newark.
McGuire, J. J., Trenton.
Newcomb, M. W., E. Orange.
Payne, Jos., Midland Park.
Riggins, E. N., E. Orange.
Warner, W. H. A., E. Orange.

NEW YORK.

Dearden, New York.
Fancher, E., Middletown.
Hyatt, H. W., White Plains.
Lavinder, C. H., Stapleton.
Ogden, J. B., New York.
Snyder, Thos., Niagara Falls.
Westerfield, —, New York.

NORTH CAROLINA.

Coble, W. A., Brick Church.
Hicks, C. S., Durham.

NORTH DAKOTA.

Guest, A. W., Jamestown.
Gibson, S. G., Langdon.
Rose, F. E., Fargo.
Stewart, Z. W., Grand Forks.

OHIO.

Baldwin, W. S., S. Lorain.
Barkhurst, S. O., Steubenville.
Brockway, R. B., Toledo.
Burdick, H. J., Cleveland.
Coldham, W. W., Toledo.
Cohen, A., Cleveland.
Dager, Wm. F., Lorain.
Dudley, S. B., Canton.

Drysdale, H. H., Cleveland.
Dabney, Wm. R., Marietta.
Earley, A. H., Dayton.
Flower, W. R., Ashtabula.
Hulse, J. A., Akron.
King, Wm. S., Ashtabula.
Kerr, Wm. E., Steubenville.
Lasalle, J. J., Toledo.
Madden, P. R., Xenia.
Marvin, A. H., Cleveland.
Mossgrove, Jas. R., Steubenville.
Riegelhaupt, S., Cleveland.
Smith, C. N., Toledo.
Sager, Jos., Celina.
Turrell, R. L., Conneaut.
Wilson, Dale, Toledo.
Young, T. C., Cleveland.

OKLAHOMA.

Hill, C. B., Guthrie.

OREGON.

Butler, O. D., Independence.
Gilbert, J. A., Portland.
King, A. E., Antelope.
McCorkle, M. G., Portland.
Skene, W. H., Portland.

PENNSYLVANIA.

Baker, M. H., Stoyestown.
Emery, W. H., Coatesville.
Fleming, A. B., Tamaqua.
Grim, G. M., Ottsville.
Greene, W. H., Philadelphia.
Marston, A. N., Belle Vernon.
Olson, G. M., Philadelphia.
Schaffner, B. W., Johnstown.

SOUTH DAKOTA.

Jenkins, P. B., Waubay.

TEXAS.

Burgess, J. L., Waco.
Lowe, F. M., Brownwood.
Westphal, Robt., Yorktown.

VIRGINIA.

Bryan, R. C., Richmond.
Cole, H. W., Jr., Norfolk.
Davidson, C. H., Lexington.
Stinson, L. R., Scottsville.

WASHINGTON.

Dodson, Z. T., Cleveland.
Fiset, L. O., Seattle.
Garnett, R. S., Tacoma.
Henden, Chas., Pi Ell.
Harrison, A. B., Seattle.
Johnston, W., Seattle.
Mitchell, D. A., Seattle.
Powers, W. N., Seattle.
Read, W. D., Tacoma.
Raymond, Alfred, Seattle.

WISCONSIN.

Evans, J. M., Evansville.
Hayes, C. A., Chippewa Falls.
Hayden, A., Shullsburg.
Montgomery, A., Eau Claire.
Mock, F. C., Milwaukee.
Phillips, C. E., Wilton.
Pronty, W. A., Burlington.

WYOMING.

Jewell, E. L., Lost Cabin.
Wyman, W. A., Cheyenne.

Marriages

James G. Ross, M.D., to Miss Lillian Henak, both of Chicago, August 23.

James R. Montgomery, M.D., to Miss Cora Knowles, both of Owensville, Ind., August 24.

Eugene Hawkins, M.D., to Miss Jessie E. Moore, both of Greencastle, Ind., August 23.

Edward B. Cooper, M.D., Sunbury, Pa., to Miss Anna Brand of Williamsport, Pa., August 22.

Frank E. Shimer, M.D., Jesup, Iowa, to Miss Tina Ashley of La Porte City, Iowa, August 30.

George W. Fifield, M.D., Janesville, Wis., to Miss Elizabeth Weidensall of Omaha, August 28.

Harry O. Sappington, M.D., Galveston, Texas, to Miss Margaret G. Fay of Altoona, Pa., August 23.

Joseph P. Sheppard, M.D., to Miss Elizabeth Rutherford Denison, both of Little Rock, Ark., July 26.

Joseph Edgar Dibble, M.D., Kansas City, Mo., to Miss Sallie M. Dismond of Kansas City, Kan., August 28.

Albert Atwood Blackman, M.D., Colorado Springs, Colo., to Miss Gracia Russell of Chicago, September 2.

Fred C. Brechan, M.D., Phoenix, Ariz., to Miss Myrtle A. Ward, of Sioux City, Iowa, at Phoenix, August 25.

Robert Franklin Nimocks, M.D., Gadsden, Ala., to Miss Mary Louise Chambers, of Poplarville, Miss., September 6.

Heinrich Lange, M.D., Germany, to Miss Eda Schwarz, of New York, at Govanstoun, near Baltimore, Md., August 24.

Bryan De Forest Sheedy, M.D., to Miss Eleanor Marie Connors, both of New York City, at Cambridge Springs, Pa., August 19.

Deaths

Philander J. Payne, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1861, of Keokuk, Iowa, assistant surgeon of the Tenth Missouri Volunteer Infantry in the Civil War; a charter member of the Tri-state Medical Society, a member of the Lee County and Iowa State medical societies, at one time a professor in the local medical college and one of the founders and directors of Graham Hospital, Keokuk, died at the home of his daughter in Nashville, Tenn., August 25, aged 65.

Smith Austin Skinner, M.D. University of Vermont Medical Department, Burlington, 1854, assistant surgeon of the Seventh Vermont Volunteer Infantry in the Civil War, a charter member of the New York State Medical Association, a member of the Rensselaer County Medical Society and for several years president of the Union Medical Society; for 8 years health officer of Hoosick Falls, N. Y., died suddenly at his home in that city, August 15, from heart disease, aged 81.

Adolph Schlossstein, M.D. University of Würzburg, Germany, 1865, a member of the American Medical Association, surgeon in the German army in 1866, a prominent practitioner of St. Louis, died at his home in that city August 27, from cerebral hemorrhage, after an illness of two weeks, aged 64. The Society of German Physicians and the St. Louis Medical Society sent delegations to represent them at the funeral.

Erwin Wendell Woodford, M.D. College of Physicians and Surgeons of Chicago, 1900, a member of the American Medical Association, a well-known physician of the West Side, Cleveland, died at the Lutheran Hospital, Cleveland, August 15, from typhoid fever, after an illness of twelve days, aged 63.

Henry H. Hawn, M.D. Long Island College Hospital, Brooklyn, N. Y., 1876, coroner for several years of Mahoning County, Ohio; president of the medical staff of the Youngstown City Hospital, died at his country home near Youngstown, August 28, from hepatic disease, after a long illness, aged 59.

George C. Porter, M.D. Jefferson Medical College, Philadelphia, 1890, a member of the American Medical Association, and a prominent physician of San Benito County, Cal., died at his home in Hollister, August 25, after an illness of several months, aged 52.

J. Franklin Ford, M.D. Rush Medical College, Chicago, 1887, some-time president of the Fox River Valley Medical Society and president of the village board, died at his home in Omro, Wis., from diabetes, August 28, after a prolonged illness, aged 50.

George Arthur Torgler, M.D. University of the State of Oregon, Medical Department, Portland, 1904, of Portland, died at the Open-Air Sanitarium, Portland, August 16, from heart disease, after an illness of three weeks, aged 26.

Hiram C. Vaughan, M.D. Harvard University Medical School, Boston, acting assistant surgeon in the Navy during the Civil War, who retired from practice in 1867, died at his home in Foxcroft, Maine, August 19.

Philip A. Knight, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1854, for many years secretary of the school board of Utica, Mich., died at his home in that place, August 30, aged 77.

Lewis Wolverton, M.D. Jefferson Medical College, Philadelphia, 1883, who had long been addicted to liquor and drug habits, was found dead from asphyxiation in his apartments in Shamokin, Pa., August 13, aged 48.

Luther E. Stowell, M.D. Rush Medical College, Chicago, 1900, of Williamsfield, Ill., a member of the Knox County Medical Society, died in Peoria, August 26, after a long ilness, aged 30.

Walter A. Corson, M.D. Pennsylvania, collector of customs, 1844, at El Paso, Texas, died in that city, August 21, from consumption, after an illness of several years, aged 33.

Richard M. Davis, M.D Willamette University Medical Department, Salem, Ore., 1878, died at his home in Seattle, Wash., August 17, from nephritis, after a long illness.

J. Thomas Musick, M.D. Tulane University of Louisiana, New Orleans, 1869, died at his home in Pittsburg, Texas, August 24, after an illness of several years, aged 59.

John E. Davis, M.D. University of Louisville Medical Department, 1869, of Lowell, Ind., died at a hospital in Chicago, August 25, after an operation on the kidney, aged 61.

Albert Isaacson, M.D. (Examination Kansas), died at his home in McPherson, Kan., from congestion of the brain, August 20, after an illness of a few hours, aged 31.

William R. Owen, M.D. College of Physicians and Surgeons of Chicago, 1889, of Sublette, Ill., shot and killed himself in a church in Minneapolis, August 27, aged about 60.

Harry Sparks Wheeler, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1895, of Niles, Ohio, died recently in a sanitarium near Pittsburg.

John Ross Smith, M.D. Cincinnati, 1872, died suddenly at his home in Kellogg, Iowa, August 17, from sunstroke, after an illness of only a few hours, aged 60.

Seth D. Smith, M.D. University of Louisville Medical Department, 1854, died at his home in Demopolis, Ala., August 21, after a prolonged illness, aged 74.

Horde Sharp, M.D. University of Louisville Medical Department, 1872, died suddenly from heart disease at his home in Sharpsburg, Ky., August 19, aged 58.

Littleton Thompson, M.D. Cincinnati College of Medicine and Surgery, 1884, died at his home in Utica, Ill., August 19, after an illness of 4 weeks, aged 55.

Ernest Pierpont, M.D. Chicago Medical College, 1880, an old resident of the Ojal Valley, Cal., died at his home, Overlook, Nordhoff, August 26, aged 50.

John Van Dermark. M.D. Illinois, 1883, died at his home in Rosendale, N. Y., August 24, from typhoid fever, after an illness of one week, aged 57.

Henry F. Garey, M.D. Washington University School of Medicine, Baltimore, 1876, of **Kansas City, Mo.,** died at Baltimore, August 31, from nephritis.

John J. Lawrence, M.D. New York University, New York City, 1861, died at his home near Coakley, N. C., from dropsy, August 21, aged 68.

J. Y. Hicks, M.D. Tulane University of Louisiana, New Orleans, 1852, died at his home in Moulton, Texas, aged 23.

Abroad.

Christopher Heath, F.R.C.S. Death has suddenly removed one of the most prominent of London surgeons and teachers, Mr. Christopher Heath. Born in London in 1835, he was the grandson of Mr. John Heath, a surgeon in the Royal Navy, was educated at King's College School and Hospital, receiving his M.R.C.S. degree in 1856. He served as a surgeon with the Baltic fleet in the Crimean war. In 1856 he was appointed demonstrator of anatomy at Westminster Hospital and in 1862 lecturer on anatomy and assistant surgeon. In 1866 he became assistant surgeon and teacher of operative surgery at University College Hospital, and in 1875 he was made surgeon and professor of surgery. While at the Westminister Hospital he wrote his well-known "Practical Anatomy," which reached a ninth edition in 1902. A year after his appointment to University College Hospital he was awarded the Jacksonian prize for his essay on "The Injuries and Diseases of the Jaws, Including Those of the Antrum with the Treatment by Operation or Otherwise." In 1881 he was elected a member of the Council of the Royal College of Surgeons, and in 1895 president. He was an admirable teacher, being always clear and practical, as many popular works which emanated from his pen show. Among the best known are his "Course of Operative Surgery," and his "Manual of Minor Surgery and Bandaging," which ran into twelve editions. He also edited his standard "Dictionary of Practical Surgery." In 1897 he delivered the Lane Medical Lectures at the Cooper Medical College in San Francisco, which were listened to with great attention, not only by the students, but by hundreds of practitioners from the Pacific coast. A pupil of Sir William Ferguson, Mr. Heath was a bold and successful operator. As an authority on the surgical diseases of the jaws he was foremost. He was a keen controversialist and a hard hitter. He died suddenly at his residence in London, August 8, aged 70.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

DETERIORATION OF APOMORPHIN HYDROCHLORATE.

Dodge City, Kansas, Aug. 22, 1905.

To the Editor:—Anent your observation on apomorphin, in reply to an inquirer in The Journal of August 19, page 548, I beg to say that H. C. Wood, in the tenth edition of his work on "Therapeutics," merely mentioned the discolorations, as also does H. H. Rusby in his article on the drug in Wood's "Reference Handbook." Gould's "Students' Dictionary" does not mention it, but Lippincott's "Medical Dictionary"—late revision—condemns the use of the discolored material.

Some four years ago I had occasion to use apomorphin in a case of acute alcoholism, and injected the discolored tablets with good results. I stuck the tube in my pocket hypo and had no occasion to use it again till last week, when, on responding to a hurry call, I found a man who had swallowed a half ounce of laudanum, and was already profoundly under the influence. My heart misgave me when I pulled out that old green tube; it was clear that the man could not be made to swallow anything, and that a stomach-tube was a useless piece of furniture. To have gone to the drug store to search for a tube of fresh tablets would have consumed valuable time; so I hurriedly injected 1/6 gr. of the discolored drug into the patient's arm without waiting for any sort of cleansing, and in about three minutes he was giving a lively exhibition of reverse peristalsis of the stomach to the delight of a highly interested audience and doubly to the relief of the attending physician. No untoward symptoms developed.

Since reading your condemnation of the discolored article, I have replaced my green tablets with white ones in a brown tube; although I can not avoid the suspicion, on account of the favorable result above described, that I have allowed myself to be euchred out of my fifteen cents. W. H. Graves.

PRODUCTION OF SYNTHETIC PROTEIDS.

Nutley, N. J., Aug. 22, 1905.

To the Editor:—Is there, in English, any volume embodying the work of L. v. Fisher and others in the laboratory production of synthetic proteids? Where can I obtain information as to these, their variety and character and methods of production? Haeckel says: "Chemists have hitherto tried in vain to master the chemical structure of these obscure protein compounds," meaning, particularly, the various albumins. Are any of these included with some sugars and urea, etc., as laboratory products? Joseph Clements.

Answer.—Details concerning the synthetic preparation of proteid-like substances, involving principles and methods discovered by Kossel, Curtius, Fischer and others, are not described in English books on chemistry. The chemistry of proteids, insofar as it is understood to-day, is treated of in Otto Cohnheim's "Chemie der Eiweisskörper," a second edition of which has appeared recently. Unfortunately, this is not translated into English.

TEST FOR URIC ACID.

Houston, Texas, Aug. 26, 1905.

To the Editor:—Please give me a quick and easy method for estimating the percentage of uric acid in urine. W. A. H.

Answer.—A very convenient and fairly exact method is the one in which Ruhemann's uricometer is used. The tube is filled up to certain marks with carbon disulphid, and then with a solution containing iodin 1.5 grams, potassium iodid 1.5 grams and absolute alcohol 15 grams in 185 c.c. of distilled water. On adding a certain amount of urine and shaking, the carbon disulphid will become of a dark brown copper color; with more urine the carbon disulphid will absorb all free iodin and the mixture will look like urine. The adding of urine should be stopped as soon as the carbon disulphid shows only a slight reddish tint, because this will disappear entirely after repeated shakings. The test is finished when the indicator appears snow-white, a sign that all iodin has been neutralized by the urine. After the foam has settled, the proportion of uric acid is read off on the scale.

ACONITIN.

Ashton, S. Dak., Aug. 28, 1905.

To the Editor:—A number of text-books state that aconitin should not be used internally, yet at the same time stating that it has the same physiologic action as aconite. Will you state why it should not be used, if it should not be? Has it the same physiologic action as aconite? Are there reliable preparations for internal use to be had? J. M. Crabb.

Answer.—Aconitin is used internally. It is the most potent of all vegetable alkaloids. In the U. S. Pharmacopeia (8th dec. rev.) the dose is given as 1/400 gr. (0.00015). It has practically the same action as aconite, but must be used cautiously and in minute doses.

State Boards of Registration

COMING EXAMINATIONS.

Massachusetts Board of Registration in Medicine, State House, Boston, September 12-13. Secretary, E. B. Harvey, Boston.

Central District Indian Territory Board of Medical Examiners, South McAlester, October 2. Secretary, W. B. Caldwell, Hugo.

Utah State Board of Medical Examiners, Salt Lake City, October 2. Secretary, R. W. Fisher, Salt Lake City.

Board of Medical Examiners of Arizona, Phoenix, October 2-3. Secretary, A. Martin, Phoenix.

Idaho State Board of Medical Examiners, Boise, October 3. Secretary, J. L. Conant, Jr., Genesee.

Indiana Board of Medical Registration and Examination, State House, Indianapolis, October 3. Secretary, W. T. Gott, Crawfordsville.

Board of Medical Examiners of Montana, The Capitol, Helena, October 3. Secretary, W. C. Riddell, Helena.

North Dakota State Medical Examining Board, Grand Forks, October 3. Secretary, H. M. Wheeler, Grand Forks.

Minnesota State Board of Medical Examiners, Old Capitol Building, St. Paul, October 3 5. Secretary, C. J. Ringnell, Minneapolis.

Rhode Island State Board of Health, State House, Providence, October 5-6. Secretary, G T. Swarts, Providence.

Regular Board of Medical Examiners of Georgia, The Capitol, Atlanta, October 9. Secretary, F. D. Paterson, Cuthbert.

Michigan State Board of Registration in Medicine, Capitol Building, Lansing, October 10. Secretary, B. D. Harison, Sault Ste. Marie.

State Medical Board of the Arkansas Medical Society, Little Rock, October 10. Secretary, J. P. Runyan, Little Rock.

State Board of Medical Registration of Vermont, Y. M. C. A. Hall, Burlington, October 10-12. Secretary, W. S. Naya, Underhill.

Kansas State Board of Medical Registration and Examination, State House, Topeka, October 10-11. Secretary, G. F. Johnston, Lakin.

Board of Medical Supervisors of Washington, D. C., Washington, D. C., October 12. Secretary, W. C. Woodward, Washington, D. C.

Board of Medical Examiners of State of Texas, San Antonio, October 17. Secretary, T. T. Jackson, San Antonio.

State Board of Medical Examiners of New Jersey, Trenton, October 17-18. Secretary, E. L. B. Godfrey, Camden.

State Board of Health of Illinois, The Great Northern Hotel, Chicago, October 18. Secretary, J. A. Eagau, Springfield.

Louisiana State Board, New Orleans, October 20-21. Secretary, F. A. Larue, New Orleans.

Arizona July Report.—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, July 4-5, 1905. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 8, all of whom passed.

PASSED.

College.	Year Grad.	Per Cent.
Columbus Med. Coll.	(1882)	77.2
University of Michigan	(1904)	88
McGill University	(1904)	77.4
Washington University	(1905)	83
Medico Chirurgical Coll., Philadelphia	(1905)	92
Vanderbilt University	(1899)	75.7
Yale University	(1903)	81
Northwestern University	(1904)	76

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending September 2, 1905:

Shook, Jay R., asst.-surgeon, left Fort Des Moines, Iowa, with Troop "G," 11th Cavalry, to Terre Haute, Ind., and return.

Billingslea, C. C., asst.-surgeon, reported for temporary duty at Fort D. A. Russell, Wyo., from Fort Riley, Kans.

Siler, Joseph F., asst.-surgeon, left Fort Meade, S. Dakota, with 6th Cavalry on field duty.

Bourke, James, asst.-surgeon, granted two months and twenty-eight days' leave of absence when his services can be spared, with permission to go beyond the sea.

Baker, Frank C., asst.-surgeon, ordered, on completion of competition at Sea Girt, N. J., to return to his proper station, Presidio of Monterey, Cal.

Quintou, W. W., asst.-surgeon, left Fort McPherson, Ga., en route to Fort Barrancas, Fla., on detached duty.

Beruheim, J. R., dental surgeon, left Sau Francisco, Cal., en route to Fort Slocum, N. Y., for duty.

Coffey, A. McD., contract surgeon, left Fort Lawton, Wash., and arrived at Fort Davis, Alaska, for duty.

Byars, C. R., contract surgeon, left Fort Sam Houston, Tex., and arrived at Fort Sill, Okla. Ter., for temporary duty with Provisional Regiment of Field Artilery.

Halliday, Francis A., contract surgeon, relieved from temporary duty at Fort Caswell, N. C., and further duty at Fort McPherson, Ga., and ordered to Fort Fremont, S. C., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending September 2, 1905.

McCormick, A. M. D., surgeon, detached from the *Hartford* and ordered home to wait orders.

Brister, J. M., P. A. surgeon, detached from the *Atlanta* and ordered home to wait orders.

Riggs, R. E., asst.-surgeon, detached from the *Newark* and ordered home to wait orders.

Byrues, J. C., surgeon, detached from the *Texas* and ordered to the Naval Academy.

Freeman, G. F., P. A. surgeon, detached from the Naval Station, Olongapo, P. I., and ordered to the Naval Station, Cavite, P. I.

Taylor, J. S., P. A. surgeon, detached from the *Ohio* and ordered to duty at the United States legation, Pekiu, China.

Wickes, G. L., asst.-surgeon, detached from the Naval Station, Cavite, P. I., and ordered to the *Ohio*.

Pryor, J. C., surgeon, ordered to the Naval Medical School, Washington, D. C.

Dunn, H. A., P. A. surgeon, detached from the *Terror* and ordered home to wait orders.

Hathaway, G. S., asst.-surgeon, ordered to the Naval Hospital, Washington, D. C.

Geiger, A. J., asst.-surgeon, detached from the *Severn*, granted leave for thirty days, and then to wait orders.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Aug. 30, 1905:

Sawtelle, H. W., surgeon, to proceed to Richmond, Va., for special temporary duty.

Magruder, G. M., surgeon, granted leave of absence for one month from Aug. 26, 1905, on account of sickness.

Gardner, C. H., P. A. surgeon, to proceed to New Orleans, La., and report to Surgeon J. H. White for special temporary duty.

Foster, M. H., P. A. surgeon, to proceed to Galvestou, Texas, and assume temporary command of the service.

Stiles, Ch. W., Chief, Division of Zoology, granted leave of absence for twelve days from Aug. 14, 1905.

Hunt, Reid, Chief, Division of Pharmacology, granted leave of absence for ten days from Aug. 21, 1905.

Hunt, Reid, Chief, Division of Pharmacology, to represent service at meeting of American Pharmaceutical Association at Atlantic City, N. J., September 4-9, 1905.

Richardson, N. D., acting asst.-surgeon, granted leave of absence for seven days from Aug. 17, 1905.

Stevenson, J. W., acting asst.-surgeon, to report at Washington, D. C., for special temporary duty.

Thompson, C. V., acting asst.-surgeon, granted leave of absence for sixteen days from Sept. 2, 1905.

Richardson, S. W., pharmacist, to report at Washington, D. C., for special temporary duty.

McKay, M., pharmacist, relieved from duty at Boston, Mass., and directed to proceed to Cincinnati, Ohio, and report to acting asst.-surgeon in charge for duty and assignment to quarters.

Woods, C. H., pharmacist, on being relieved from duty at Cincinnati, Ohio, to proceed to Evansville, Ind., and report to medical officer in command for duty and assignment to quarters, relieving Pharmacist G. I. Van Ness, Jr.

Carlton, C. G., pharmacist, granted leave of absence for seven days from Aug. 22, 1905.

Van Ness, G. I., pharmacist, leave of absence for thirty days from Aug. 1, 1905, granted Pharmacist Van Ness by Department letter of July 19, 1905, amended so that said leave shall be for nineteen days only.

Van Ness, G. I., Jr., pharmacist, on being relieved from duty at Evansville, Ind., by Pharmacist C. H. Woods, to report at Washington, D. C., for duty.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General Public Health and Marine-Hospital Service, during the week ended August 19, 1905:

SMALLPOX—UNITED STATES.

Arkansas: Fort Smith, May 20-June 3, 2 cases.

California: Los Angeles, August 5-12, 5 cases; San Francisco, August 12-19, 2 cases.

District of Columbia: Washington, August 12-19, 2 cases.

Florida: Jacksonville, August 12-19, 1 case.

Illinois: Chicago, August 12-19, 2 cases, 2 deaths.

Louisiana: New Orleans, August 12-19, 1 case, imported.

Massachusetts: Lowell, August 12-19, 1 case.

Ohio: Canton, March 1-April 2, 1 case.

Wisconsin: Appleton, August 11-18, 4 cases; Milwaukee, July 30-August 12, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: Mauila, June 17-24, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Towu, July 8-15, 5 cases.

Brazil: Bahia, July 15-22, 1 death; Rio de Janeiro, July 16-23, 21 cases, 1 death; Rio Grande de Sul, July 11, epidemic.

France: Paris, August 4-11, 17 cases, 7 deaths.

Great Britain: Cardiff, Aug. 6-12, 2 cases; Newcastle-on-Tyne, July 29-August 5, 1 case.

India: Bombay, July 11-25, 1 death; Calcutta, July 15-22, 2 deaths; Karachi, July 15-23, 1 case, 1 death; Madras, July 8-21, 8 deaths.

Mexico: City of Mexico, July 15-August 12, 23 cases, 18 deaths.

Panama: Bocas del Toro, July 22-28, 1 case.

Russia: Odessa, July 30-August 5, 9 cases, 2 deaths; St. Petersburg, July 15-29, 5 cases, 3 deaths.

Spain: Barcelona, July 21-August 10, 7 deaths.

Turkey: Constantinople, July 23-August 6, 7 deaths.

YELLOW FEVER—UNITED STATES.

Louisiana: Ascension Parish, to August 14, 1 case, 1 death; Avoyells Parish, 1 case, 1 death; Caddo Parish, 4 cases; Calcasieu Parish, 3 cases, 2 deaths; East Carroll Parish, 1 case, 1 death; Iberville Parish, 1 case, 1 death; Jefferson Parish, 5 cases, 5 deaths; Lafourche Parish, 3 cases, 1 death; Madison Parish, 2 cases, 1 death; Orleans Parish, July 21-Aug. 17, 1,129 cases, 165 deaths; Plaquemines Parish, to August 14, 11 cases, 2 deaths; Rapides Parish, 2 cases; St. Charles Parish, to August 15, about 18 cases, 3 deaths; St. James Parish, 1 case; St. John Parish, to Aug. 14, about 12 cases, 2 deaths; St. Mary Parish, 48 cases, 3 deaths; Terrebonne Parish, 2 cases, 1 death.

YELLOW FEVER—FOREIGN.

Mississippi: Mississippi City, to August 17, 10 cases.

Brazil: Rio de Janeiro, July 16-23, 20 cases, 7 deaths.

Guatemala: Livingston, July 22-August 5, 4 deaths; Zacapa, August 5, present.

Honduras: Chamelicon, August 10, present; Choloma, present; Puerto Cortez, July 22-28, 2 cases, Aug. 3-10, 1 death.

Mexico: Tierra Blanca, Aug. 6-12, 2 cases, 1 death; Vera Cruz, 6 cases, 3 deaths.

CHOLERA.

India: Bombay, July 11-25, 2 deaths; Calcutta, July 15-22, 14 deaths; Madras, July 7-21, 33 cases.

PLAGUE—INSULAR.

Philippine Islands: Manila, June 17-24, 2 cases, 2 deaths; Cebu, 2 cases, 2 deaths.

PLAGUE—FOREIGN.

China: Hongkong, June 3-17, 47 cases, 47 deaths.

India: Bombay, July 11-25, 84 deaths; Calcutta, July 15-22, 10 deaths; Karachi, July 8-23, 18 cases, 15 deaths.

Society Proceedings

COMING MEETINGS.

Academy of Ophthalmology and Oto-Laryngology, Buffalo, September 14-16.

American Academy of Ophthalmology and Oto-Laryngology, Buffalo, September 14-16.

American Electro-Therapeutic Association, New York City, September 19-21.

American Association of Obstetricians and Gynecologists, New York City, September 19-21.

American Public Health Association, Boston, September 25-29.

Medical Society of the State of Pennsylvania, Scranton, September 26-28.

Association of Military Surgeons of the United States, Detroit, September 26-28.

Wyoming State Medical Society, Cheyenne, September 27-28.

American Roentgen Ray Society, Baltimore, September 28-30.

Mississippi Valley Medical Association, Indianapolis, October 10-12.

New York State Medical Association, New York City, October 16-19.

American Academy of Medicine, Chicago, November 7-8.

American Dermatologic Association, New York City, December 28-30.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

The Reduction of Fever.

QUININ.

Aside from the hydrotherapeutic measures in the reduction of temperature Shoemaker, in *Med. Bull.*, regards quinin as the most effective agent in reducing temperature and that in periodical fevers, he states, it is a specific. It limits tissue change, checks fermentation, prevents putrefaction and inhibits the activity of infective germs and thus limits the production of heat. He does not advise it given in enormous doses, for in such large doses it is a gastrointestinal irritant and is injurious to Peyer's patches. He, therefore, recommends it in moderate doses as a tonic and as a reducer of temperature. In epidemic influenza it is of decided value. It counteracts the fever, sustains the strength, allays the cough, and is particularly valuable when the disease is complicated by bronchopneumonia. The fever of croupous pneumonia is likewise favorably influenced. In scarlatina and erysipelas this drug is one of the chief reliances.

SALICYLIC ACID.

Salicylic acid is of use in a number of febrile affections and especially in acute inflammatory rheumatism. Its purest form is obtained in oil of gaultheria. According to this author, salicylic acid is inferior to quinin in the reduction of fevers not of rheumatic origin, and in rheumatism it is surpassed by oil of gaultheria and salicin.

As a remedy for colds and rheumatic pains an infusion made from the leaves of the wintergreen is recommended. The pure oil is effective in doses ranging from 2 to 20 minims (.12 to 1.30). It possesses both antiseptic and antipyretic properties and quickly relieves pain of rheumatic origin when given in full doses every two hours in milk or enclosed in capsules. Its physiologic action is the same as that of salicylic acid and its toxic effects are much less than that of the artificial acid.

In scarlatina the author states that the oil of wintergreen forestalls the occurrence of arthritic complications which are liable to develop in this disease. It may be applied locally combined as follows:

℞. Olei gaultheriæ
Olei olivæ, āā........................ʒiv 15|
M. Sig.: Apply locally to the affected joints.

SALICIN.

Salicin, which is a principle akin to the salicylates and derived from the willow and poplar, is better borne by the stomach than either salicylic acid or the oil of gaultheria. It does not depress the heart, but, on the other hand, serves as a tonic. It can be given safely in doses of several drams daily, the usual dose being 10 grains (.65) every two or three hours. It should be given every hour until three or four doses have been given. It is of value in both the acute and chronic forms of rheumatism, also in the treatment of influenza. A combination of salicin and quinin is a good one in such cases. Salicin is also valuable in tuberculosis to subdue the hectic fever and to check the toxic diarrhea. It also improves the appetite and increases the digestive powers. In pelvic inflammations accompanied by febrile reaction, as in cases of salpingitis, oöphorites, metritis and peritonitis, it is valuable. In the rheumatic fevers of children it is especially to be recommended, as it is easily borne by them. It promotes more rapid convalescence and never produces delirium.

ALCOHOL.

Alcohol has some effect in reducing fever by diminishing tissue change and promoting heat radiation. It is not, however, given primarily to reduce temperature, but it is of value when fever is present, in some cases to quiet delirium and to promote sleep. Its administration, therefore, should depend on the condition of the patient. The malt liquors are frequently given during the stage of convalescence from fevers. In hemorrhagic measles or scarlatina, diphtheria and pneumonia, alcohol is demanded, and it is frequently of service in the treatment of erysipelas.

CAMPHOR.

Camphor, like alcohol, stimulates the heart and circulation in low fevers. It diminishes the production of heat and lessens tissue waste. It is of more benefit when given in small doses, as large quantities depress. Its virtue is too often overlooked, so states the author, while there is such a strong tendency at the present time to experiment with new drugs. This drug overcomes restlessness and excitement caused by high temperature. It is of value in typhoid fever and typhoid pneumonia, especially in aged individuals. It is also of value in the eruptive fevers and influenza.

ACONITE.

Aconite reduces fever by its effect on the circulation. It diminishes the action of the heart, decreases the frequency of the pulse rate and lowers blood pressure. It also promotes elimination by the skin and kidneys. It is of value, therefore, in the treatment of sthenic fevers, which not infrequently are seen in robust individuals. In typhoid fever it is of no service. In the eruptive fevers of childhood it produces good effect, also in acute inflammatory conditions, in pleurisy, pneumonia, pericarditis, endocarditis and tonsillitis, by promoting the elimination and reducing the temperature.

VERATRUM VIRIDE.

Veratrum viride allays the overactivity of the heart and reduces the tension of the pulse. It should not be prescribed in large doses, as they cause nausea and vomiting and sometimes are followed by collapse. It is contraindicated in typhoid fever unless violent delirium and a high tensioned pulse is present. In the beginning of the first stage of pneumonia it is very valuable. It may be given in from 10 to 15 minim (.65-1.00) doses of the tincture every two hours to reduce temperature and pulse rate. It is harmful in the second stage of pneumonia.

GELSEMIUM.

Gelsemium is another preparation which lowers the pulse rate and decreases arterial tension. It acts on the ganglia of the heart. This preparation also increases the activity of the skin and reduces fever. It should be given only in fevers of the sthenic type to allay the cerebral excitement, congestion and inflammation. It is sometimes recommended for this purpose in allaying the cerebral excitement, congestion and inflammation present in cerebrospinal meningitis. It is more serviceable in diseases of children. It is recommended by the author in beginning pneumonia and pleurisy and in remittent fever.

ANTIMONY.

Antimony acts by depressing the heart's action and is a diaphoretic. Tartar emetic is of value in acute bronchitis by reducing temperature and promoting secretion by the mucous membrane. It is very valuable in the treatment of tonsillitis and parotiditis. The coaltar products are mentioned by the author only to be condemned as a class of agents which produce grave influences on the heart and circulation in general. They depress the nervous system and in some cases produce collapse, cyanosis, dyspnea, vertigo and vomiting.

Corns.

Brocq, in an abstract in *Med. News*, recommends that the corn be softened at night with a piece of flannel covered with soap and spirits, followed by curetting it with a curette or a knife. Apply daily for six or eight days the following dressing:

℞.	Ext. cannabis ind. alc	gr. viiss		50
	Acidi salicylici	gr. xv	1	
	Alcoholis	m. xv	1	
	Spts. etheris	ʒss	2	
	Collodii (flexible)	ʒiss	6	

M. Sig.: Apply locally once a day.

After the foregoing dressing has been applied for the required number of times the foot should be bathed in hot water and the corn curetted. Other methods consist in moistening the corn with a concentrated solution of salicylic acid in alcohol, covering it with pulverized salicylic acid and sealing with a piece of cotton. The dressing should be renewed in four or five days, and if inflammation is present the treatment should be stopped. About the eighth day the foot should be soaked in hot water and the corn can then be removed.

The following combination is regarded as valuable in the removal of corns:

℞.	Acidi salicylici	gr. xl	2	65
	Ext. cannabis ind	gr. v		30
	Collodii flex. q. s. ad	℥i	30	

M. Sig.: To be painted over the corn once or twice daily for several days. Or:

℞.	Ext. cannabis ind	gr. iii		20
	Acidi salicylici	ʒss	2	
	Olei terebinthinæ	m. xv	1	
	Acidi acetici glacial	m. vi		40
	Cocainæ (alk.)	gr. vi		40
	Collodii q. s. ad	ʒv	20	

M. Sig.: Apply a thin coating over corn every night until it drops off. Or:

℞.	Acidi salicylici	gr. x		65
	Ext. cannabis ind	gr. iv		25
	Alcoholis			
	Etheris, āā	ʒss	2	
	Collodii	ʒiii	12	

M. Sig.: Apply locally. Or:

℞.	Potass. hydratis	gr. iii		20
	Tinct. iodi	ʒi	4	
	Glycerini	℥ss	15	
	Aquæ destil	℥i	30	

M. Sig.: Apply to the corn morning and night with a camel's hair brush.

Cystitis.

The following combination is recommended in the treatment of cystitis:

℞.	Salol	ʒii	8	
	Pulv. acaciæ q. s.			
	Aquæ cinnamomi	℥xii	360	

M. Ft. mistura. Sig.: One tablespoonful four times a day.

A suppository is sometimes necessary to relieve the accompanying pain:

℞.	Pulv. opii	gr. iv		25
	Ext. hyoscyami	gr. vi		40
	Ol. theobromæ q. s.			

M. Ft. sup. No. vi. Sig.: One suppository two or three times a day, if necessary, to relieve the pain.

Medicolegal

Privileged Communications.

Section 3163 of the Code of Civil Procedure of Montana, among other things, provides: "There are particular relations in which it is the policy of the law to encourage confidence and to preserve it inviolate; therefore, a person can not be examined as a witness in the following cases: . . . (4) A licensed physician or surgeon can not, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." Most of the states in the union, if not all, the Supreme Court of Montana says, in the personal injury case of May vs. Northern Pacific Railway Co., have similar statutory provisions.

In the case before the court the plaintiff on her direct examination merely described her injury, and told of her treatment by two physicians. On cross-examination she admitted that a third physician had also attended her as her physician, and had treated her for the injury complained of; but she did not assume to detail any conversation had with him, or to tell of the character or extent of the treatment which he gave her. The defendant insisted that this physician should have been permitted to testify as to the condition of the plaintiff at the time he attended her as her physician. But the court does not think so.

Of course, says the court, if the patient calls the physician as a witness to testify, he thereby expressly consents to the proceeding, or, if he sits by and fails to object, he tacitly consents that the physician may testify. Furthermore, it has been held that where the patient directly attacks the physician, as by an action for damages for malpractice, he abandons the protection given by the statute, for he thereby challenges the physician to disprove the patient's contention as to the character of his injury or of the physician's treatment. Lane vs. Boicourt, 128 Ind. 420. It has also been held that where two or more physicians are employed at the same time, with respect to information gained at the same consultation, calling one of the physicians as a witness by the patient constitutes a waiver of the statutory prohibition as to the other or others (Morris vs. Railway Co., 148 N. Y. 88), although this doctrine is disputed by respectable authority (Baxter vs. Cedar Rapids, 103 Iowa, 599). Likewise it has been held that, where the patient calls the physician as a witness at one trial, this constitutes a waiver of the privileges as to that physician on a second trial of the same case. McKinney vs. Railroad Co., 104 N. Y. 352. But this doctrine has also been disputed in Burgess vs. Sims Drug Co., 114 Iowa, 275, and Grattan vs. Insurance Co., 92 N. Y. 274.

But so far as this court's investigation discloses, no court of last resort has ever held that the mere fact that the patient testifies generally concerning his condition constitutes a waiver of the privilege granted by the statute. In Marx vs. Railroad Co., 10 N. Y. Supp. 159, the Supreme Court of New York held that, where the patient assumes to tell all that took place between himself and the physician, this constitutes a waiver of the privilege; and in Treanor vs. Railroad Co., 16 N. Y. Supp. 536, decided by the Common Pleas Court of New York City, it was also held that, where the patient testifies without reservation as to his injuries and their effect on him, this likewise constitutes a waiver of the privilege. But these cases were later disapproved, and in effect directly overruled, by the Supreme Court of New York in Fox vs. Turnpike Co., 69 N. Y. Supp. 551, and Dunckle vs. McAllister, 74 N. Y. Supp. 902, and by the Court of Appeals of New York in Morris vs. Railway Co., above cited. In Highfill vs. Railroad Co., 93 Mo. App. 219, it is said that, where a patient goes on the stand and testifies as to what his physician found and said, he thereby waives the privilege under the statute. It may be safely said that the Missouri Appellate Court is now the only court asserting the doctrine announced by it, and even that case can hardly be a precedent in favor of the contention of the defendant here, for this plaintiff did not assume to tell what the third physician mentioned had done for her, or to detail any conversations with him, and her statement that he had been her physician was not a voluntary one, but was brought out on cross-examination.

It is not the inherent incompetency of the evidence that precludes it being given, but it is the fact that the evidence comes from a person who occupies a certain relation of confidence to the patient, by virtue of which the statute says he shall not disclose his information without the consent of the person from whom he gained it. So far as this court is aware, the authorities are uniform in holding against the contention of the defendant in this case. Williams vs. Johnson, 112 Ind. 273; Railroad Co. vs. Shepherd, 30 Ind. App. 193; Warsaw vs. Fisher, 24 Ind. App. 47; Green vs. Nebagamain, 113 Wis. 508; McConnell vs. City of Osage, 80 Iowa, 293; Baxter vs. Cedar Rapids, 103 Iowa, 599; Burgess vs. Sims Drug Co., 114 Iowa, 275; Butler vs. Railway Co., 30 Abb. N. C. 78, affirmed in 143 N. Y. 630; Mellor vs. Railway Co., 105 Mo. 455.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

August 26.

1 *Three Cases of Tumor of Spinal Cord Operated on with Good Result. J. C. Warren, Boston.
2 *What Action Should Be Taken to Suppress Smallpox? H. M. Bracken, Minneapolis, Minn.
3 *Nature and Cause of Hunger, Appetite and Anorexia. M. I. Knapp, New York.
4 Beriberi. J. L. McCool, Marcus Hook, Pa.
5 *To What Extent is Climate a Negligible Factor in the Treatment of Pulmonary Tuberculosis? W. L. Dunn, Asheville, N. C.
6 *Medical Treatment of Excessive Uric Acid in the Urine. B. Robinson, Chicago.

1. **Tumor of Spinal Cord Successfuly Operated On.**—Warren reports two cases of localized tumors of the spinal cord in which removal completely relieved the symptoms, and a third case in which operation was followed by marked improvement.

2. **Suppression of Smallpox.**—Bracken, in order to make the best report possible to the Conference of State and Provincial Boards of Health of North America on the best means of controlling smallpox, obtained from various public health officials, scientists and practitioners their opinions on this most important question, and uses these opinions as the basis for his arguments in favor of compulsory examination, at least of children, and against the indefinite continuance of quarantine as a means of suppressing smallpox. In conclusion he urges that the conference put itself on record as follows: Believing that all attempts to restrain smallpox by means of quarantine in a community not protected by vaccination will fail; that rigid quarantine in a well-vaccinated community is unnecessary; that attempts to control the spread of smallpox by means of quarantine is unscientific, irrational, unsuccessful and misleading; that in laying down strict rules for the quarantine of smallpox, sanitary authorities are favoring unscientific and illogical methods and are conveying false ideas as to safety, this conference protests against further attempts to control smallpox by means of quarantine and requests the passage of compulsory vaccination laws similar to those of Germany, requiring (1) the compulsory vaccination of infants, (2) revaccination at puberty. The conference should further place itself on record as requesting that steps be taken to secure a safe and efficient vaccine, and that vaccination be carried out by official vaccinators acting under the authority of the various boards of health; also that steps be taken to secure a vaccine the quality and efficiency of which are beyond question. Legislators and the people should be advised as to their responsibilities in suppressing smallpox, and a time should be set for the total abandonment of quarantine as a means of attempting to control this disease.

3. **Nature and Cause of Hunger, Appetite, and Anorexia.**—Knapp says that hunger is a lesser degree of pain, produced by the contraction of the muscularis either of the pylorus or of the entire stomach or of the duodenum, or of the contraction of the muscularis of all these structures. If the contraction is more intense, it is felt as a painful hunger. If the contraction is of a slight degree, it is evanescent. This is the reason hunger passes away after a certain lapse of time, even if no food has been taken; it means simply that the contraction gave way to relaxation. A "good and hearty" appetite should not be encouraged, nor should it be regarded with complaisance. Such an appetite must be considered as pathologic and must invariably be suppressed by the physician, as it is caused by a stronger contraction, hence causing greater irritation of the mucosa, which should not be. Absence of contraction, the inability to contract, relaxation, distension—these being the opposite, the reverse of contraction, result in anorexia.

4. **Beriberi.**—McCool thoroughly reviews the literature and reports four cases which he believes are illustrative of four of the six forms of beriberi.

5. **Climate in Tuberculosis.**—Dunn states that since the dietetic-hygienic regimen may be much more thoroughly and efficiently conducted under certain climatic conditions, climate is a negligible factor only: (1) When the financial status of the patient is such that he cannot live in the health resort under conditions just as good as those obtainable at home, with or without the expenditure of the same amount of money; (2) when the patient has not the moral strength to make a business of getting well; (3) when the disease has become hopelessly advanced.

6. **Medical Treatment of Excessive Uric Acid in Urine.**—Robinson says that the rational treatment of excessive uric acid in the urine consists in the administration of ample fluids at regular intervals and of foods containing elements to produce basic combinations with the uric acid forming urates which are freely soluble. He advises the administration of a flavored 12-grain sodium chlorid tablet. The patient places on the tongue a half tablet and drinks a glassful of water (better hot) before each meal, and in the middle of the forenoon (10 a. m.), middle of the afternoon (3 p. m.), and at bedtime (9 p. m.. The patient thus drinks three pints of 1/4 to 1/2 normal salt solution daily. This practically renders the urine normal, and acts as ample prophylaxis against the formation of uric acid calculus. If parenchymatous nephritis exists the salt should not be administered, as it excessively stimulates the renal parenchymatous cells. In such cases the water only should be given. An alkaline tablet is also given. It is composed of: Cascara sagrada, 1.6 mg. (1/40 gr.); aloes, .022 gm. (1/3 gr.); sodium bicarbonate, .065 gm. (1 gr.); potassium bicarbonate, .022 gm. (1/3 gr.); magnesium sulphate, .13 gm. (2 gr.). One-sixth to one tablet (or more as required to move the bowels once daily) is placed on the tongue before meals and followed by 236 c.c. (8 oz.) of water (better hot). At 10 a. m., 3 p. m. and bedtime one-sixth to one tablet is placed on the tongue and followed by a glassful of fluid. In the combined treatment the sodium chlorid tablet and alkaline tablet are both placed on the tongue together. This method furnishes alkaline bases (sodium and potassium) to combine with the free uric acid, in the urine, producing perfectly soluble alkaline urates and materially diminishing the free uric acid. The alkaline and sodium chlorid tablets take the place of all so-called mineral waters.

Medical Record, New York.

August 26.

7 *Asthma. S. Kohn, New York.
8 Freedom from Uric Acid and How to Obtain It. A. Haig, London.
9 *Long Island Appendicitis. A. E. Gallant, New York.
10 *Lacerations of the Cervix Uteri. A. H. Gardner, New York.
11 Case of Delayed Menstruation; Flow Established at First Spontaneously, Subsequently by Treatment; Conception. B. P. Hirst and H. Fox, Philadelphia.
12 *Serum Therapy in Erysipelas. J. C. Ayer, New York.

7. **Asthma.**—Kohn discusses the clinical history of asthma exhaustively. He doubts the universal utility of operative work in the nose, but speaks highly of the value of institutional treatment for asthma and urges the establishment of sanatoria for this purpose.

9. **Long Island Appendicitis.**—Gallant discusses cases treated on Long Island and formulates the following rules for guidance in deciding when to operate: 1. With a history of sudden, sharp abdominal pain, soon followed by nausea and vomiting and fever, appendicitis may be surmised, and if a little later the pain becomes localized or most intense in the right iliac region, with right-sided rigidity, the diagnosis stands confirmed. 2. The "safe" treatment of acute or recurrent appendicitis during the attack is operation within the first forty-eight hours following the primary pain. 3. If toward the close of the second day, in spite of an icebag continuously applied over the appendicular region and free castor-oil evacuation of the bowels, the pain and rigidity, with or without nausea and vomiting, temperature and pulse elevation, continue or return, to delay operation under such conditions can only subject the patient to the danger of rupture, extensive gangrene, general peritonitis, intestinal obstruction, and a fatal issue. 4. In the presence of a mass or of tumefaction delay is dangerous—operate at once. 5. Interval operation is free from danger, requires but seven days in bed, two weeks from business, and gives freedom for life.

10. **Lacerations of Cervix Uteri.**—Gardner sums up his views

on this question as follows: 1. Many ills are the result of unrepaired lacerations of the cervix. 2. The frequency and extent of these tears may, to a certain extent, be lessened by allowing more time for dilatation in the first stage of labor; by a more judicious use of the forceps in time and force; and by the proper use of podalic version. 3. The most frequent cause of subinvolution of the uterus and prolonged convalescence is unrepaired lacerations. 4. In all probability many of the frequently quoted morbid conditions ascribed to lacerations are the result of infection of the lacerated surface rather than the laceration itself. 5. Many cases of severe hemorrhage are due to unrecognized cervical lacerations. 6. Immediate repair in the hands of an able surgeon-obstetrician is the best means of controlling such hemorrhage, and also of preventing infection of the torn surfaces. 7. Primary trachelorrhaphy is easily and quickly done, but a secondary repair is a difficult and tedious procedure. 8. In case of failure in obtaining union in the primary operation, the condition of the woman is none the worse, while if successful, which is usually the case with skillful surgeons, the patient is spared many of the ills which lacerations of the cervix sooner or later entail.

12. **Serum Therapy in Erysipelas.**—Ayer reports the results obtained in 33 additional cases. He says that the shortening of the average duration of the disease by 2.6 days expresses the value of this form of treatment.

New York Medical Journal.
August 26.

13 Contribution to the Surgery of Perforating Gastric Ulcer. A. B. Mitchell, Belfast, Ireland.
14 *Astigmatism, Cause of Vomiting in School Children. A. Brav, Philadelphia.
15 *End Results in Surgery of the Kidney, Based on a Study of Ninety Cases, with One Hundred and Twenty-three Operations. A. V. Veer, Albany.
16 Preoperative and Postoperative Treatment of Surgical Cases. J. E. Canaday, Paint Creek, W. Va.
17 Tropical Diseases of the Angola Highlands. F. C. Wellman, Benguella, West Africa.
18 Extragenital Chancres. A. L. Wolbarst, New York.
19 The Fly and Tuberculosis. T. J. Mays, Philadelphia.
20 Sterility in Women. Pathologic Affections of the Ovaries and Tubes that Produce It, and Their Treatment. J. R. Goffe, New York.

14. **Astigmatism a Cause of Vomiting in School Children.**—Brav finds that some children, during their school term, have regular attacks of vomiting, the primary cause of which is often obscured. He says that it may be laid down as a rule that vomiting in school children, not preceded by a sensation of fullness, distress in epigastrium, epigastric pain, eructation of gases, regurgitation of fluid, heartburn, fever and chills, is caused by astigmatic errors of refraction which demand correction.

15.—See abstract in The Journal, July 29, 1905, page 346.

Medical News, New York.
August 26.

21 *Appendicostomy and Cecostomy in the Treatment of Chronic Colitis. W. Meyer, New York.
22 Contribution to the Study of Chronic Nicotine Intoxication of the Nervous System. F. Robbins, New York.
23 *Summary of Twenty-five Radical Operations on the Rectum Under Local (Sterile Water) Anesthesia. A. B. Cooke, Nashville, Tenn.
24 The Insane of Canada: Presidential Address. T. J. W. Burgess. Montreal. Canada. (Continued.)
25 Natural and Artificial Protection of Man Against Tuberculosis. F. Figari, Genoa, Italy.
26 Dermoid Cysts of the Mediastinum. R. S. Morris, Ann Arbor, Mich. (Continued.)

21. **Appendicostomy and Cecostomy in Chronic Colitis.**—Since October, 1902, Meyer has made use of appendicostomy for obstinate chronic colitis, amebic as well as ulcerative, in four patients, and of cecostomy in one, a man in whom the appendix seemed of too small caliber to permit of thorough flushing. These five cases nicely demonstrate the great value of colon flushing in the various chronic affections of the large intestine, catarrhal, tuberculous, specific and amebic. Of course, in cases of chronic catarrh due to the presence of multiple papillomata, there is not much benefit to be derived from the treatment. They, further, show the excellence of Weir's idea of utilizing the appendix for this purpose, disproving the fear entertained by many, viz., that irrigation through a small tube would be unsatisfactory. If two quarts of fluid introduced through a tube 14 mm. in circumference, can be made to pass the entire large intestine within ten minutes, this is all that can be expected. Meyer says that in view of the obstinacy of ulcerative colitis in its various forms, and its tendency to recurrence, too much stress can not be laid on the advisability of keeping open the communication with the caput coli for a considerable length of time, and of insisting on a properly selected diet in conjunction with rational internal medication. Both must assist the salubrious effect of colon flushing. Meyer considers appendicostomy the operation of choice in all cases of obstinate, chronic colitis. It is simple, safe and effective, and the same is true of the after-treatment. He gives it the preference over cecostomy in all cases in which the appendix is passable.

23.—See abstract in The Journal, July 8, 1905, page 129.

Boston Medical and Surgical Journal.
August 24.

27 *Empyema of the Frontal Sinus. F. C. Cobb, Boston.
28 *Localization of Chronic Suppurations of the Urinary Tract. A. L. Chute, Boston.
29 Efficacy of Serum Treatment in Streptococcus Puerperal Septicemia. E. B. Young. Boston.
30 What the Suburban Surgeon is Doing in the Abdomen, and How He Does It. C. E. Durant, Haverhill, Mass.

27. **Empyema of Frontal Sinus.**—Caleb discusses the clinical history of this affection, and the methods of operating for its cure. He sums up the advantages and disadvantages of these methods as follows: The Ogsten-Luc operation has for advantage the slight deformity produced. For disadvantage it has the great probability of recurrence. The same is true of Jansen's method. Kuhnt's, Ridell's and Coakley's methods yield less probability of recurrence, as they destroy the sinus, but they produce greater or less facial deformity, Coakley's probably giving the least of the three. To all of these methods there is one great objection—that the ethmoid cells are not sufficiently considered. Killian's operation seems to combine the advantage of sinus obliteration with the removal of the ethmoid cells; but it is hard to judge as yet of its practical results as far as deformity and danger to the eye are concerned.

28. **Localization of Chronic Suppurations of Urinary Tract.**—Chute emphasizes careful location of chronic urinary suppurations as an essential for accurate treatment. He has found the conclusions drawn from the glass tests, as applied to suppurations of the urethra, often misleading, while those drawn from the irrigation test are more accurate. Without cystoscopic examination, it is at times almost impossible to differentiate chronic suppurations of the bladder from those of the kidney. Before operating on a suppurative lesion of the kidney it is essential to verify the diagnosis as to which kidney is involved, either by seeing turbid urine issuing from the corresponding ureteric orifice or by ureteral catheterization. Reliance on symptoms alone, even when these seem to leave no doubt, may lead to serious error.

St. Louis Medical Review.
August 19.

31 *Prophylaxis and Treatment of Yellow Fever. F. Forchheimer, Cincinnati, Ohio.
32 *Malarial Origin and Propagation of Yellow Fever. W. H. Ford, St. Louis.

31. **Prophylaxis and Treatment of Yellow Fever.**—This article forms in substance the chapter on yellow fever in Forchheimer's text-book on practice. It offers nothing new.

32. **Malarial Origin and Propagation of Yellow Fever.**—Ford discusses the yellow fever situation in New Orleans; the insalubrity of that city; the inadequacy of the pure quarantinist and of the pure mosquito doctrine; the doctrine that yellow fever is a malignant grade of malaria, which he says is good in spite of its being old, and the local causes of yellow fever. The article is continued.

Lancet-Clinic, Cincinnati, Ohio.
August 26.

33 Adenoids, Their Etiology and Symptoms. B. L. W. Floyd, Evansville, Ind.
34 Education and Hygiene of the Nervous System. H. H. Hoppe, Cincinnati.
35 The Decision to Operate. A. M. Cartledge, Louisville. Ky.

Medicine, Detroit, Mich.
August.

36 *New Technic for the Determination of the Secreting and Evacuating Functions of the Stomach. F. A. McGrew, Laporte, Ind.

37 Controversy Concerning the Use of Cantharides Internally. Historical Sketch. T. L. Coley, Philadelphia.
38 Treatment of Hemorrhoids. C. F. Martin, Philadelphia.
39 *Diagnosis of Ureteral Stones. M. L. Harris, Chicago.
40 Problem of Preventing Tuberculosis. J. McFarland, Philadelphia.
41 *New Clinical Phenomena. A. Abrams, San Francisco.
42 *Celluloid Corset—Consideration of Its Usefulness and the Technic of Manufacture. H. W. Jones, St. Louis.

36. **Determination of Secreting and Evacuating Functions of the Stomach.**—McGrew describes his method as follows: In the morning, fasting, the patient is given a test meal consisting of 60 grams of biscuit and 240 c.c. of a solution made up of 30 c.c. of the iron indicator and 210 c.c. distilled water. For practical purposes nine biscuits and an eight-ounce bottle filled to the neck, putting in first the 30 c.c. iron solution and adding distilled water, will afford a ready means of dosage and be surprisingly accurate. One hour after its ingestion the test meal is withdrawn, following the Mathieu-Rémond technic. To dilute the stomach contents, pour into the stomach, through the tube, 200 c.c. of distilled water. The patient then mixes the water and stomach contents thoroughly by active abdominal and diaphragmatic movements, which should be continued about two minutes, after which period the diluted specimen may be withdrawn, the tube having remained meanwhile *in situ*. In order to make the calculations it is necessary to know: 1, the quantity of the undiluted specimen; 2, the acidity of the undiluted specimen; 3, the acidity of the diluted specimen; 4, the quantity of iron which remained in the stomach into a graduate the first point is settled without more ado. Set the diluted specimen to filter. Thoroughly and vigorously stir the undiluted specimen with glass rod, after which 20 c.c. should be measured from it into an evaporating dish, and the remainder set to filter. To the 20 c.c. add 8 to 10 drops pure hydrochloric acid and 8 to 10 drops pure nitric acid, and boil the whole for several moments until the excess of nitric acid has been entirely driven off. Then add enough distilled water to bring the amount again to 20 c.c. and filter. To 10 c.c. of the filtrate add 5 c.c. of a 5 per cent. solution of ammonium sulphocyanid. Compare the color of this mixture with that of a standard solution composed of a 1/10 dilution of the mother iron solution, 10 c.c. of which (after the iron has been reduced to the chlorid by adding three or four drops of pure HCl and boiling until clear) are treated with 5 c.c. of the same 5 per cent. ammonium sulphocyanid solution. This is the ordinary colorimetric process. For example: Comparing the filtrate mixture and the standard solution, it appears that the former is a lighter shade, hence contains less iron. Add, therefore, mother solution of iron (reduced as above), drop by drop, reversing the tube back and forth after each to thoroughly mix the solutions, until the colors in the two tubes exactly correspond. Then, taking the lower level of the discus, calculate the amount of iron added. Suppose the tube to have contained 10 c.c. filtrate to which 5 c.c. ammonium sulphocyanid solution has been added, and the tube shows that 6 c.c. mother iron solution has been added to bring the color up to the standard. The 6 c.c. mother iron solution contains 6 mg. iron, but the same quantity of the standard solution contains 1 mg. iron. Therefore, the 10 c.c. filtrate contains 4 mg. iron. It remains to determine the total stomach contents, when the quantity of test meal remnant may be easily calculated. Using phenolphthalein as an indicator, ascertain the acidity of the diluted and the undiluted specimens respectively. Then calculate the total stomach contents by multiplying the acidity of the diluted specimen (A′) by the quantity of water introduced (Q), and dividing the result by the acidity of the undiluted (A) minus that of the diluted specimen (A′). Suppose the total stomach contents are found to have been 160 c.c. It has been previously determined that each 10 c.c. contain .4 mg. iron; but each 1 mg. is equivalent to 10 c.c. of the original test meal. Therefore, 64 c.c. of the original test meal remained within the stomach and 236 c.c., or 78 per cent., had been evacuated. The evacuatory percentage is, therefore, 78. The volume of the gastric juice is the total stomach contents, 160 c.c., less the volume of the test meal remnant, 64 c.c., or 96 c.c. This is 1.5 times the volume of the test meal remnant. The secretory percentage, therefore, is 150.

39. **Diagnosis of Ureteral Stones.**—According to Harris, a diagnosis of ureteral stones based on the symptomatology can never be more than presumptive, and previous to the advent of the Roentgen ray and the ureteral catheter, a diagnosis of ureteral stone in any portion of the ureter, except the lower end, was seldom made, except at operation. There may be other bodies in the pelvis capable of casting shadows which from appearances alone can not be distinguished from shadows cast by ureteral stones. Hence, in some of these cases a correct diagnosis can be made only by the use of the ureteral bougie.

41. **New Clinical Phenomena.**—Chromo-diagnosis is a word coined by Abrams to describe a method of examination which is specially applicable in the early detection of distended cutaneous veins. One may use colored glass, or, better still, sheets of gelatin of various colors, purchasable from any dealer in magic lanterns. For convenience the sheets may be mounted in cardboard frames. The patient faces the light, while the observer faces the patient. It will be found by looking through either magenta or red-colored gelatin, that the veins are brought into special prominence, and that many veins not evident to the unaided eye can be detected by the colors mentioned. Yellow gelatin will aid in the detection of the diaphragmatic excursions, although to a degree less evident than by painting the skin over the cutaneous are described by the excursions of the diaphragm with an alcoholic solution of gamboge. Green causes red cutaneous areas to appear black like silhouettes, whereas yellow intensifies the color of erythematous patches. Violet intensifies the most insignificant erythematous area. Blue intensifies brown spots. Violet causes yellow skin lesions to assume a salmon-pink color. The use of the foregoing colors refers to the effects obtained in daylight. Icteric coloration is not demonstrable by gaslight, but when a violet gelatin sheet is employed yellow is seen as a dark yellow. Let the patient rest in the recumbent posture with head nearest to the window, so that the light falls on the exposed chest from behind. The observer stands at the side of the patient, holding in his hand a red gelatin sheet in such a way that the light filtering through the sheet falls on the chest. In a thin subject, especially during forced inspiration, and with the sheet properly adjusted, the chest presents a skeletal appearance and the intercostal spaces are clearly differentiated from the ribs. In the examination of several cases of pneumothorax and hydrothorax the foregoing differentiation was found to be less pronounced or absent, and for this reason chromo-diagnosis may serve as an aid in the diagnosis of the affections mentioned.

42. **Celluloid Corset.**—The method of making the corset employed by Jones consists in pouring a plaster form of the body or part in question, smoothing and finishing this form or model, applying undershirts one after another on this form, and painting each one of these with the celluloid solution, until the desired thickness has been reached. A plaster cast of the trunk is first taken. This is filled with liquid plaster made just thick enough to pour with some difficulty. The cast is usually set first on a box, over a hole, which has been cut through the top, just large enough to admit a heavy stick, which is used to support the form. The object in having the central support larger at one end than at the other is twofold—to save as much plaster as possible in pouring, and to allow the support to be slightly withdrawn an hour or so after the plaster becomes hard. This can be done by resting the plaster form on some object and tapping the end of the support with a hammer until it is driven out a few inches. This will be more easily accomplished if the bar be greased previous to pouring. If this procedure be not gone through with, the water which remains in the plaster form will be absorbed by the wood, and in a few hours the swelling which takes place will break the form. If a bar of iron or piping be used in place of wood there is no danger of the form cracking, but in such case the bar must remain in the plaster and can not be used again without destroying the form. After the form has been poured twenty-four hours the cast can be stripped off, and this will be more easily accomplished if the inner side has been previously coated with vaselin. The form

should then be smoothed down carefully with a draw shave to cut down all humps, and later with a paper cutter's knife. All hollows should be filled with liquid plaster until the whole is fairly smooth. In making leather jackets it is usual to cover the form with a coating of shellac. This should never be done in making the celluloid jacket, as the acetone used later will cause the jacket to adhere to the cast so strongly that it will be ruined in removing. Instead, after the form is perfectly smooth, it should be rubbed down with talcum powder until the surface is shiny. The form is then ready for applying the celluloid. A supply of women's summer undershirts should be obtained or, if the jacket be a small one, children's undershirts. From five to eight or nine shirts will be used, according to the thickness of the jacket. Two of these are now fitted on the form, one over the other, and made to lie perfectly smooth. The celluloid, which will be the color of honey and the consistency of molasses, is poured from the bottle, preferably into a tall graduate of a pint capacity, and larger at the top than at the bottom. A bowl can be used, or, in fact, any receptacle, but the graduate is convenient to mix the celluloid with more acetone, when it is too thick, and in other ways has proved the best. An ordinary painter's brush, three inches wide, is used for applying the liquid celluloid, which is laid on the shirted form and spread over evenly and rubbed in. It is not necessary to wait until one coat is dry before adding the next, as the acetone evaporates almost immediately. Three or four coats are painted on, and when the meshes of the shirt seem well filled and the celluloid begins to run over and around the sides of the form (the number of coats will depend on the consistency of the celluloid), no more should be applied for ten minutes. Then, while the celluloid in the shirts is still rather soft, another shirt is put on. This will adhere immediately and should be made perfectly smooth. This is filled in the same way, and the process is repeated until the desired number of shirts is used. If time is no object, the shirts may be allowed to dry one by one, and the process extended over several days. In order to ascertain when the desired thickness has been reached it is necessary to trim the jacket at the edge of the form, where the redundant undershirt overhangs, but care must be taken that a good clean cut be made downward and at a distance of a fraction of an inch inside the edge, as at the edge and beyond, the cut jacket will appear much thicker than it really is, since the different layers at this point are not so firmly matted together. The average thickness is from 2 to 3 mm., and it is rare that less than seven shirts are used. When the desired thickness has been reached, several layers are applied to the last shirt, until no more can be taken up. When dry the jacket will be smooth and shiny and of a yellow color. It can be made white by the addition of zinc oxid to the last few layers of celluloid, although this makes it duller. If too much zinc oxid is used, in case a very white jacket is desired and the last two or three shirts have been painted with the white solution, the jacket will be somewhat weakened, since the zinc makes the celluloid brittle. This is true also when white celluloid is used originally instead of the yellow. After the jacket is finished it should be allowed to remain on the plaster form for about a week. In the meantime it may be trimmed around the edges with a sharp, strong knife. In a week it will be dry enough to remove. A clean cut should be made directly down the middle into the plaster, the edges pried up and the jacket stripped off. If talcum powder has been used the jacket slips off easily, especially if the form has been well smoothed, but occasionally a little plaster will adhere to the inner side. This can be scraped out with a knife. The inside is never coated with celluloid, as it invariably changes the shape of the jacket. The jacket can now be tried on and trimmed out under the arms and at the bottom, so as to allow for sitting down, but it should not be allowed to remain very long off the form, as it has a tendency to curl up at the edges. When properly fitted, have a harness-maker bind the edges with leather, paste pads of felt where the jacket will come in contact with bony prominences, and either sew straps and buckles in front or insert hooks for lacing. Five or six straps are usually sufficient. When extra support is needed use strips of steel riveted to the jacket or attach apparatus to the jacket. Thus the actual outlay for materials in no case will exceed $14 or $15, and in most cases will be less than $10.

The Postgraduate, New York.

August.

43 *Radical Operation for the Cure of Chronic Frontal Sinusitis. T. J. Harris, New York.
44 *Brief Analysis of 350 Cases of Epilepsy. H. M. Cox, New York.
45 Stricture of the Eustachian Tube. W. C. Phillips, New York.

43. **Radical Operation in Chronic Frontal Sinusitis.**—The various operations employed in the treatment of this affection are discussed by Harris. He prefers Killian's operation which, he says, is indicated in many cases and gives uniformly good results.

44. **Epilepsy.**—Nearly all the patients constituting the series of 350 cases analyzed by Cox were chronic epileptics, representing almost all types of the disease. About 41 per cent. (146) were women, and 58 per cent (204 cases) were men. Fifty-six per cent. (196) occurred in the first decade of life; 27 per cent. (95) in the second; 11 per cent. (39) in the third; 4 per cent. (14) in the fourth, and 1.4 per cent. (5) in the fifth, and only one case occurred after the fifth decade. In 15 cases one or both parents were epileptic; in eight the father alone was affected. In 20 cases there was a history of epilepsy in the grandparents, uncles and aunts. In 18 cases in which epilepsy was not traceable in the ancestors, brothers and sisters were affected. Indirect hereditary influences were present as follows: Tuberculosis in 24 cases; alcoholism in 17 cases; neurasthenia and hysteria in 9 (in four instances it was in the mother); cancer in 6 cases; insanity, 5 cases; apoplexy, organic heart disease and paralysis, 12 cases; migraine, 3; paresis and nephritis, each 2; tabes, meningitis and diabetes, each 1. The exciting cause attributed in 157 of the cases under consideration was as follows: Dentition, 22; menstrual disorders, 21; trauma, 17, in at least 6 of which the attack caused the fall resulting in injury rather than the injury causing the attack; alcoholism, 10; masturbation, 9; cerebral palsies, 8; meningitis, 8; encephalitis, 7; scarlatina, 6; grief and anxiety, 5; measles, 5; diphtheria, 4; chorea, 4; hydrocephalus, 4; idiocy, 15; malaria, menopause, smoking, syphilis and autointoxication, each 2, and eyestrain, parotitis, dysentery and erysipelas, each 1. As to treatment, Cox says when the lesions can be localized and the vitality of the patient is sufficiently high, surgery should be resorted to, other measures failing, although the results obtained from operative interference are seldom curative, and, unfortunately, are disappointing.

Therapeutic Gazette, Detroit, Mich.

August.

46 *New Electric Head Light. W. C. Phillips, New York.
47 Osmic Acid Treatment of Tic Douloureux. W. W. Babcock, Philadelphia.
48 Disinfection of Catheters by Formalin. R. C. Rosenberger, Philadelphia.
49 *X-Ray Treatment of Deep-Seated Tuberculosis. H. K. Pancoast, Philadelphia.
50 Treatment of Erysipelas by the External and Internal Use of the Tincture of the Chlorid of Iron. A. H. Tickell, Nevada City, Cal.
51 *Appendices of Unusual Size. G. W. Spencer, Philadelphia.

46. **New Electric Headlight.**—Phillips has devised a new electric headlight which has a ball and socket joint and may be pointed in almost any direction. It is entirely insulated from the headband and there is no danger of shock or heat. It can be attached to the handle and is useful for transillumination purposes. By slipping off the cap it can be used for transillumination of the antrum. By putting in a frosted lamp, the fundus of the eye can be examined beautifully in a dark room, and it also can be used with the cystoscope.

49. **X-Ray in Deep-Seated Tuberculosis.**—Pancoast presents the results obtained in the treatment of deep-seated lesions of the larynx, lungs, peritoneum, joints and spine with the *x*-ray. He found that tubercular laryngitis may be aided and even cured by *x*-ray treatment, provided there can be brought about an improvement in the primary pulmonary condition. Too vigorous treatment will cause a reaction which may be carried to an unfavorable degree, therefore great care is necessary in determining the proper dosage in each case. Pulmonary lesions, in selected cases, may be benefited probably, but even

greater precautions should be observed. He does not consider Finsen-light applications of any value in treating laryngeal lesions. Only the most powerful lamps need be tried, and such exposures are of value only in lessening or retarding a skin reaction from the *x*-ray.

51. **Unusual Size of Appendix.**—The appendix removed by Spencer from one patient, aged 22, measured one inch in length and resembled a small grub worm. The appendix removed from another patient measured eight inches in length and was coiled on itself deep in the pelvis. The third specimen, removed by Dr. E. E. Montgomery, measured five and one-half inches in length and four and three-quarter inches in its larger circumference. It was not opened, but probably contained fluid.

St. Paul Medical Journal.

August.

52 *Need of a More Rational Therapy. J. W. Bell, Minneapolis.
53 *Case of Renal Decapsulation for Chronic Bright's Disease. L. F. Schmauss, Mankato, Minn.
54 Sanatorial Care of Tuberculosis. H. L. Taylor, St. Paul.
55 *Accurate Determination of Errors of Refraction, Without Cycloplegia by Means of Astigmatic Charts. C. N. Spratt, Minneapolis.
56 Best Form of Incision in the Extraction of Cataract. C. Williams, St. Paul.
57 Compound Fractures. E. A. Hensel, Alexandria, Minn.

52. **Rational Therapy.**—Bell calls attention to the fact that while preventive medicine is steadily moving onward, winning victories on every hand, therapeutics has for years occupied, and still occupies, an unenviable position, and that this is especially true of drug treatment. He states that therapy is the one weak link in medicine. He reviews the treatment of disease during the last three decades and discusses the relation of physicians to proprietary medicines. The following reasons, he thinks, are responsible for the present state of affairs: 1. Insufficient and impractical instruction in this branch of medicine. 2. The unfortunate tendency in medical schools to devote all energy to the investigation, detection and prevention of disease, to the exclusion of rational therapy. 3. The delusion of considering drugs the only agents for combating disease, thus seriously minimizing the beneficial effects of modern therapy. 4. The willingness of a considerable part of the profession to prescribe anything and everything thrust on the market, regardless of composition or merit. 5. The worse than evil influence of the so-called therapeutic nihilists in the ranks of the profession. Bell reviews the various means of remedying this state of affairs and refers to the work of the Council on Pharmacy and Chemistry in the following terms:

> The important work undertaken by the Council on Pharmacy and Chemistry of the American Medical Association, will doubtless prove exceedingly helpful and beneficial to the entire profession, but more especially to the indifferent prescriber, ready and willing to prescribe anything and everything, regardless of merit. The Council on Pharmacy and Chemistry, composed of able and experienced pharmacists and chemists, proposes to examine into the composition and the status of the various medical preparations offered to physicians, which are not included in the United States Pharmacopeia or in other standard text-books. These will include the synthetic chemical compounds, as well as the so-called proprietaries and pharmaceutical specialties put out under trademarked names. Preparations which conform to the standard established by the Council will be incorporated in "New and Nonofficial Remedies," a book to be published by THE JOURNAL of the American Medical Association. This distinguished body of impartial experts should receive the hearty co-operation of all honorable manufacturing pharmacists and chemists, and of the entire medical profession, in making this important work in the highest degree successful. Let us hope that this important work will be fearlessly pursued, in order that reliable results may follow.

He says that with the new and expurgated pharmocopeia and the valuable aid of the Council on Pharmacy and Chemistry, with the growing feeling in the profession in favor of a rational therapy, we may hope to see the weak link in medicine, therapeutics, so strengthened in the near future as to commend itself alike to the public and to the skeptic within the profession. He also refers at some length to the need of medical education and of uniform medical laws.

53. **Renal Decapsulation.**—After careful study of the literature and observations in a personal case, Schmauss concludes that the Edebohls operation is deserving of further trial, and that we are not only justified in recommending it in suitable cases, after the various therapeutic measures have been sufficiently tried and found wanting, but that it is our duty to do so. This operation, like any other, has not only its indications, limitations and contraindications, as already pointed out, but also its difficulties—(a) unusually small space between last rib and ilium, either due to a short waist, or great length and obliquity of the twelfth rib; (b) undue mobility of the kidney, so that it may be difficult to locate it; (c) perinephritic adhesions or high locations up under the ribs—especially when enlarged, as in his case; (d) firm attachment of the capsule proper in some cases of interstitial nephritis. Certain precautions must be observed to insure the best results: 1, The patient should be carefully prepared for the operation; 2, the development of shock and anuria should be counteracted by appropriate measures; 3, the ilio-hypogastric and ilio-inguinal nerves are to be preserved; 4, undue trauma to the kidney proper and the surrounding structures should be avoided; 5, in replacing the kidney care must be exercised to avoid twisting the pedicle. Much has been said about posturing the patient to facilitate delivery of the kidney; this will increase the working space and help to bring up a loose kidney, but will not influence a normally situated kidney up under the ribs. On the contrary, it has occurred to Schmauss that a pillow or roll might increase the difficulty. Grasping the fatty capsule with a number of small forceps, and thus drawing out the organ, has been advised, but this is only possible if the kidney is movable. Schmauss makes an oblique incision parallel with the twelfth rib, and, if necessary, resecting the latter. Thus retraction can be exerted upward and thereby the kidney rendered more accessible and more room obtained for the hand. In this way considerable time is saved, the fat is disturbed less, and the kidney is spared undue trauma—through handling, pulling, tearing, etc.

55. **Determination of Errors of Refraction.**—Spratt recorded the comparative results obtained with the use of charts without cycloplegia and again of the same eye after instillation of homatropin, 2 per cent., every ten minutes, for a period of one and one-half hours. The patients, all of whom were adults except six, were selected only with reference to their intelligence. In 95 per cent. of cases the astigmatism determined by the use of charts and fogging, but without cycloplegia, was within .25 D. of that found after the use of homatropin. This includes 95 (75 per cent.), of a total of 126 eyes in which there was no difference in the amount. In 4 cases there was an apparent error of .37 D. and in one case an error of .50 D. No eye in the above series would have been given too strong a concave glass if the cycloplegic had been omitted. In two-thirds of the eyes the total myopia corresponded exactly with that found under a cycloplegic. The remaining one-third would have been under-corrected from .12 D. to .37 D. Several cases showing from —.3 D. to —.7 D. of myopia are included in the above. As would be expected, there was less uniformity in results obtained in the eyes showing hypermetropia. Fourteen cases showed less than .50 D. and in 35 eyes (or 42 per cent.), the total hypermetropia was correctly determined without cycloplegia. Spratt concludes his paper as follows: With intelligent adults, subjective methods of refracting are preferable to objective methods. The comparison of two lines at right angles, these corresponding to the axis of maximum and minimum refraction of the dioptric system of the eye, is a more accurate method of determining errors of refraction than by the use of test letters. Astigmatic charts, as devised by Verhoeff, are preferable to the single line charts, as the contrast produced by the cross lines enables one to estimate more accurately any difference in distinctiveness in the test lines corresponding to meridians of maximum and minimum refraction. In practically all cases the astigmatism and myopia can be as accurately determined without as with cycloplegia. A large proportion of cases of hypermetropia can be satisfactorily refracted without the use of cycloplegia.

Journal of Infectious Diseases, Chicago.

May.

58 *Report of Committee on Standard Methods of Water Analysis to the Laboratory Section of the American Public Health Association.
59 Concerning Tests for B. Coli Communis in Water. G. W. Fuller, New York, and C. E. Ferguson, Indianapolis, Ind.
60 Characteristics of Colon Bacilli and the Value of the Presumptive Test. G. Van E. Stoughton, New York.
61 Chemical Phases of a Water-Softening Problem. A. E. Kimberly, Columbus, Ohio.

62 Typhoid-like Bacilli in the Water Supply of Fredericton, N. B. F. C. Harrison.
63 *Persistence of Agglutinability in Typhoid Bacilli in Water. E. O. Jordan, Chicago.
64 Chemical and Bacterial Composition of the Sewage Discharged Into Boston Harbor from the South Metropolitan District. C. E. A. Winslow and E. B. Phelps.
66 Number of Bacteria in Sewage and Sewage Effluents Determined by Planting on Different Media and by a New Method of Direct Microscopic Enumeration. C. E. A. Winslow, Boston.
67 Mode of Action of the Contact Filter in Sewage Purification. E. B. Phelps and F. W. Farrell, Boston.
68 Determination of the Organic Nitrogen in Sewage by the Kjeldahl Process. E. B. Phelps, Boston.
69 Tests of a Method for the Direct Microscopic Enumeration of Bacteria. C. E. A. Winslow and G. E. Willcomb, Boston.
70 Report of Committee on Antitoxic and Immunizing Sera.
71 Importance of the Paradysentery Bacilli. W. H. Park, New York.
72 Occurrence of Bacterium Pneumoniæ in the Saliva of Healthy Individuals. W. D. Frost, C. B. Divine and C. W. Reineking, Madison, Wis.
73 *Laboratory Methods and Devices. F. F. Wesbrook, Minneapolis.
74 *Improvement in the Technic of the Indol Test. J. McFarland and J. Hamilton, Philadelphia.
75 Copper Sulphate as a Germicide. G. A. Johnson and W. R. Copeland, Columbus, Ohio.
76 Metamorphosis of Filaria in the Body of the Mosquito (Culex Pipiens). M. G. Lebredo, Havana, Cuba.
77 *Possible Cause of the Formation of Gas in Cans of Condensed Milk. C. W. Dodge, Rochester, N. Y.

58 and 63.—See abstracts in THE JOURNAL, Feb. 4, 1905, page 413.

73. **Laboratory Methods and Devices.**—Wesbrook describes the following apparatus: For counting colonies in Petri dishes; stands for museum exhibition of permanent fixed cultures of bacteria; complete and rapid anerobiosis; bimetallic thermo-regulator with special arrangement for easy cleaning and adjusting; devices for displaying and labeling pathologic specimens; agar hanging drop; devices for staining a large series of microscopic culture perforations on cover slips or on slides; method of preparing rapidly a serum for diphtheria diagnosis which will yield a medium of constant quality; a modified Drigalski-Conradi crystal violet medium; tests of embalming fluids; field methods in the bacteriology of water, and filing methods for water data.

74 and 77.—See abstracts in THE JOURNAL, Feb. 4, 1905, page 413.

Ophthalmic Record, Chicago.

July.

78 Melanoma of Choroid. Report of One Case of This Character and of Pigmented Sarcoma of the Choroid Early in Its Development. G. E. de Schweinitz and E. A. Shumway, Philadelphia.
79 Cystic Sarcoma of Orbit: Extirpation: Death. H. F. Hansell, Philadelphia.
80 Recurrent Iritis. H. Woods, Baltimore, Md.
81 Exenteration Knife-Spatula. C. H. Beard, Chicago.

Kansas City Medical Index-Lancet.

July.

82 Mesenteric Cystoma. F. T. Van Eman, Kansas City, Mo.
83 Intussusception. C. E. Fulton, Springfield, Mo.
84 Case of Acute Inversion and Prolapse of the Uterus. B. L. Eastman, Kansas City, Mo.
85 Catarrhal Condition of the Liver and Ducts Simulating Gallstones. H. S. Hill, Springfield, Mo.
86 Physiology of Saline Cathartics. G. W. Robinson, Kansas City, Mo.
87 Remarks on Gallstones. D. W. Howell, Havana, Kan.
88 Successful Use of Adrenalin Chlorid Solution in Treatment of Appendicitis. S. J. Hampshire, Overbrook, Kan.

Medical Examiner and Practitioner, New York.

July.

89 Medical Examinations for Life Insurance. S. M. Spaulding, Los Angeles, Cal.
90 Adjusting Accident and Health Claims. C. H. Harbaugh, Philadelphia.
91 Infection in Transportation. H. M. Bracken, Minneapolis, Minn.

Providence Medical Journal.

July.

92 Physician and the Community. W. H. P. Faunce.
93 Chronic Purulent Otitis Media with Meningitis, Epidural Abscess and Sinus Thrombosis. G. W. Van Benschoten, Providence, R. I.
94 Treatment of Inoperable Malignant Growths with Coley's Toxins. William E. Wilson, Pawtucket, R. I.
95 State and Diphtheria. G. T. Swarts, Providence.

Journal Medical Society of New Jersey, Newark.

July.

96 Proof of Existence of Amblyopia Ex Anopsia in Strabismus. W. B. Johnson, Paterson.
97 Diagnosis of Appendicitis when the Appendix Lies in the Pelvis. G. N. Walte, Newark.
98 Practical Therapeutics. P. J. H. Markley, Camden.
99 Diet in Typhoid. J. E. Pratt, Dumont.
100 Bacteriology of Epidemic Cerebrospinal Meningitis. J. T. Hanan, Montclair.
101 Dangers of Infected Milk. R. C. Newton, Montclair.

Nashville Journal of Medicine and Surgery.

July.

102 Two Cases in which Foreign Bodies Were Swallowed, and After Producing a Remarkable Set of Symptoms, Were Extracted from the Rectum. C. S. Briggs, Nashville, Tenn.

Denver Medical Times.

July.

103 Toxic Amblyopia. I. W. Snow, Salt Lake City, Utah.
104 Congenital Dislocation of the Hip. S. C. Baldwin, Salt Lake City, Utah.
105 Treatment of Asthma. R. Levy, Denver.
106 Normal Obstetrics: Physiology of the Puerperium. T. M. Burns, Denver.

Journal of the Kansas Medical Society, Kansas City, Kan.

July.

107 Skin Therapeutics. H. Wilkinson, Kansas City, Kan.
108 Case of Absence of the Uterus. C. P. Grover, St. Joseph, Kan.
109 Use of Paraffin in the Correction of Deformities of the Nose. Hal Foster, Kansas City, Mo.
110 Case of Detached Retina. G. W. Maser, Parsons, Kan.
111 What Every Doctor Ought to Know About Eyes. J. R. Scott, Garnett.
112 Eclampsia. M. A. Finley, Cherryvale.

St. Louis Courier of Medicine.

July.

113 Baby Incubators on the "Pike." J. Zahorsky, St. Louis.
114 Two Cases of Penetrating Gunshot Wounds of the Abdomen and One of Gallstone Disease. J. Y. Brown, St. Louis.
115 Multiple Aneurism of the Aorta. W. N. Horton, St. Louis.
116 Huntington's Chorea. G. H. Cottral, St. Louis.
117 Specimen of Multiple Sarcoma of the Spinal Column. M. A. Bliss, St. Louis.
118 Delicate Test for Albumin in Urine. A. N. Ravold, St. Louis.

Archives of Physiological Therapy, Boston.

July.

119 Mechanical Vibration and Stimulation. J. H. Burch, Baldwinsville, N. Y.
120 Diagnosis of the Size, Form, Position and Motility of Stomach and Bowel by Means of X-Ray. G. E. Pfahler, Philadelphia.
121 Physicotherapy of Neurasthenia. J. A. Riviere, Paris, France.

Journal of Medicine and Science, Portland, Maine.

July.

122 Cholecystitis: Its Etiology and Treatment. C. R. Burr, Portland, Maine.
123 Clinical Society of New York Polyclinic Medical School and Hospital. D. S. Dougherty.

International Journal of Surgery, New York.

July.

124 Ectopic Gestation. R. Waldo, New York.
125 Prostatic Obstruction: Its Radical Cure. P. Syms, New York.
126 Death Due to Careless Plugging of Nose: Remarks on Treatment of Nasal Hemorrhages. W. Freudenthal.
127 Radical Cure of Cancer of Uterus. A. L. Smith, Montreal, Canada.
128 Surgical Diagnosis. F. D. Gray, Jersey City, N. J.

Northwestern Lancet, Minneapolis.

July 1.

129 Examination of Feces. C. Nootnagel, Minneapolis.
130 Intestinal Amebiasis. C. H. Bradley, Minneapolis.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 12.

1 *Behavior of Leucocytes in Malignant Growths. J. B. Farmer, J. E. S. Moore and C. E. Walker.
2 Disposal of Wounded in a Naval War. C. M. Beadnell.
3 Arrangements for Treatment of Wounded in Action on Board H. M. S. *Magnificent* (Majestic Class). O. W. Andrews.
4 Collection and Distribution of Wounded in a Modern Cruiser Engagement. T. Austen.
5 Remarks and Suggestions on the Head Dress of Certain Ratings in His Majesty's Fleet. E. J. Biden.
6 Voluntary Civil Ambulance Wagon. H. J. Barnes.
7 Dysentery: Its Causation, Varieties and Treatment on Active Service. E. L. Jenkins.
8. Id. N. Faichnie.
9 Military Medical Reserve Difficulty. M. M. O'Connor.
10 Care of Soldier's Feet. P. B. Giles.

1.—See abstract in THE JOURNAL, Sept 2, 1905, page 742.

The Lancet, London.

August 12.

11 Chemical Correlation of the Functions of the Body. E. H. Starling.
12 Notes on African Pigmies. G. E. Smith.
13 *Frontal Sinusitis: Two Cases of Death After Operation. St. C. Thomson.
14 Case of Parotitis Due to the Pneumococcus. S. Hastings and W. T. Hillier.
15 *Aspiration in Diseases of the Ear and Nose. M. R. Souderman.

16 Delayed Chloroform Poisoning. E. W. Scott Carmichael and J. H. Beattie.
17 *Congenital Multiple Occlusions of the Small Intestine. J. G. Emanuel.
18 *Case of Sacculated Aneurism of the Abdominal Aorta, Treated by the Introduction of Silver Wire and the Passage of Constant Current. C. A. Griffiths.
19 Fracture of Head of Radius. R. Knox.

13. **Frontal Sinusitis.**—Thomson reports 2 cases, both terminating fatally. In the first case the cause was meningitis following an osteomyelitis due to septic absorption from chronic suppuration in the frontal and ethmoidal sinuses. Evidently the traumatism caused by the Caldwell-Luc operation performed on the left maxillary sinus stimulated the latent suppuration in the ethmoid and frontal cavities of the same side, and surgical treatment of the left frontal sinus led to septic absorption from the chronic suppuration going on in the frontal and ethmoidal sinuses on the opposite side. This patient died three months from the onset of symptoms and two months from the first opening of the left frontal sinus. The second patient died about a year and a half after the first operation from a meningitis caused by subdural abscesses. Thomson concludes as follows: 1. In cases of multisinusitis it is well to drain the maxillary cavity some time before the frontal sinus is operated on. Both cavities may be operated on at the same time; but if only one sinus is operated on at a time it should be the frontal sinus, the lower cavity being drained until it can be opened. 2. In spite of a free opening of the frontal sinus, the establishment of a large communication with the nose, and the avoidance of closure of the external wound, a slow infection of the bone may take place leading ultimately to infection of the meninges. This may even be started in suppurating cavities on the side opposite to the one operated on. 3. The local condition of the wound, as well as the pulse, temperature and feelings of the patient, may fail to indicate the onset of mischief. After from one to three weeks this is revealed by headache, pain, tenderness and puffy swelling on the forehead or around the eyes. 4. When septic osteomyelitis has started the most vigorous measures may fail to arrest it. It may last one and a half years before terminating fatally. 5. The chief danger appears to lie in the ethmoidal labyrinth, owing to its anatomic irregularities and to the difficulty of treating them satisfactorily. 6. Up to the present the operation which best meets these difficulties is that of Killian. In many cases a preliminary endonasal operation on the ethmoid is advantageous.

15. **Aspiration in Diseases of the Ear and Nose.**—Sondermann has devised an apparatus for aspiration in diseases of the ear and of the nose which, he believes, possesses no disadvantages. It consists of a hollow mask open at one side and surrounded by a hollow ring of hardened rubber, and by means of an elastic tube it is connected with the suction ball. The latter, as well as the elastic tube, possesses a valve by which the air can only pass outward after the suction ball has been compressed. As the mask is of triangular shape it can also be applied to the nose if required. By a slight pressure it fits almost hermetically on the skin and, therefore, can be applied easily at any time by the patient himself without the help of another person. There is no contact whatever with the external meatus and its contents and there is scarcely any danger to be feared from too strong a suction, as the rarefaction of air is spread over a relatively large space and can not exceed the amount corresponding to the elasticity of the suction ball. In cases of acute suppuration a slight aspiration will be found sufficient in order to evacuate the pus from the middle ear and even from the cells of the mastoid process into the external meatus. On the other hand, in cases of chronic empyema a stronger suction ball can be used, and especially when the membrana tympani or the ossicles are partly or entirely missing. Then it will be possible to exert a more intense suction, by which less fluid secretions are discharged if the nidus is connected with the middle ear. To this must be added that the walls of the cavity are artificially rendered hyperemic. In two cases of acute suppuration of the middle ear in which the mastoid process was also affected by the disease, as was shown by the swelling and the tenderness, and in which the intense pain continued in spite of the free and copious discharge of pus, the aspect of both the cases changed at once after the pus had been evacuated several times a day by aspiration. The pain and tenderness ceased almost directly as well as the discharge and the patients rather liked the aspiration because they felt an immediate relief in both head and ear. The result of the treatment has also been satisfactory, for the condition of the ears after the application was by no means worse than it had been before. It appears from this that the ears had not in any way been injured by the suction method, although it had been frequently applied. On the other hand, it is scarcely to be feared that any harm should result as the suction force required for evacuating pus is but slight. There is no doubt but that the patients are treated in this way far more pleasantly than by attempts at removing pus by compressing the air in the Eustachian tube or in the external meatus. The apparatus used for the suction method when applied to the nose has the same form as the one described above, but, of course, its mask is smaller, as the two nostrils and their immediate neighborhood only need be hermetically closed.

17. **Congenital Multiple Occlusions of Small Intestine.**—The small intestine of the patient, in the case reported by Emanuel, was occluded in three places, while in five others the lumen of the bowel was practically obliterated by angular constructions giving rise to a localized distention of the intestine immediately above, and a relative collapse below the points of construction. The specimen was taken from an infant seven months old. Operative interference was deemed inadvisable. On opening the abdomen at autopsy, the most conspicuous feature was a distended duodenum which was of even greater volume than the stomach. The bowel was completely obliterated at the duodeno-jejunal junction. The second and third obliterations were found in the jejunum. The annular constrictions were all situated in the jejunum.

18. **Silver Wire and Electricity in Aneurism of Abdominal Aorta.**—The aorta having been exposed, Griffiths selected a spot on the surface of the tumor devoid of large vessels, and enclosed a small circle in a purse-string suture. Through the center of this a fine long metal trocar and cannula were thrust well into the sac. The trocar was withdrawn, the cannula remaining in position, and through this was introduced a vulcanite cannula for insulating purposes. Next some fine silver wire was introduced into the sac through the double cannula. After a foot or so of wire was introduced the wire kinked, so it was cut off flush with the cannula and pushed home with a ramrod which had been specially prepared with a cupped end for this purpose. Some more wire was then pushed through and connected with the negative terminal of a constant current battery, the circuit being completed through the patient by means of an electrode placed on the thorax. A current of from 15 to 25 milliamperes was given and continued for 15 minutes. At the end of this time it was noticed that the aneurism felt harder and the expansile pulsation had grown less even if it had not quite disappeared. The wire (about six feet) was then pushed home with the ramrod, and the cannula withdrawn. The purse-string suture was tied, and the abdomen closed. It was noticed after the abdomen was closed that the bulging caused by the tumor had almost disappeared. The patient suffered greatly from shock and although consciousness was recovered, restlessness was very marked, the patient throwing himself about and exhausting what little pulse remained. He died five and a half hours after operation. The postmortem examination showed that there had been no hemorrhage. The heart was healthy; the arch of the aorta showed signs of atheromatous changes. The aneurism came off from the main trunk of the abdominal aorta and communicated with it by means of a narrow elongated mouth about one and a half inches in length. The sac was filled with a dark clot and coiled wire, a double loop of which had entered the aorta and passed for about two and a half inches up into the thoracic aorta. There was no erosion of the vertebræ.

Revue de Chirurgie, Paris.

Last indexed XLIV, page 1968

21 (XXV. No. 6.) Un cas de hernie interstitielle chez une fille de neuf ans avec remarques sur cette forme de hernie (interstitial hernia in girl of 9). C. Greene-Cumston (Boston).

22 *Forward Dislocation of Atlas in Man of Megalithic Age.—Pathologie prehistorique: un cas de luxation simple de l'atlas sur l'axis en avant chez un homme de l'époque mégalithique. M. Baudouin.

22. Luxation of Atlas in Man of Megalithic Age.—Baudouin, in conducting antiquarian researches in the western part of France last year, excavated a skeleton with forward dislocation of the atlas. The skeleton was found under an enormous slab of stone, and before it was removed it was preserved intact by pouring a solution of silica over it. The depression in which it lay was also silicated, thus confirming the findings in the skeleton. The luxation was evidently accidental, due to the falling of the large slab. Baudouin reviews other cases of forward luxation of the atlas on record, showing the exact correspondence with the findings in this skeleton of a prehistoric being.

Presse Médicale, Paris.

23 (No. 46, June 10.) Diagnostic des tumeurs de l'hypochondre droit. T. Tuffier.
24 (No. 47.) *Des embolies hydatiques de l'artère pulmonaire. M. Garnier and J. Jomier.
25 *L'hydro-hémolyse. Recherche du bacille de Koch et des autres microbes dans le sang. L. Nattan-Larrier and A. Bergeron.
26 (No. 53.) Contribution à l'étude de l'hermaphrodisme des voies génitales. G. Lombardi.
27 (No. 54.) Pathogénie de l'appendicite. P. Reclus.
28 Les conséquences gynécologiques du Malthusianisme. L. M. Bossi.
29 Traitement local des urétrites chroniques. P. Lebreton.
30 (No. 55.) Affolement bulbaire (disturbances with anguish). M. L. Levi.
31 Réduction des luxations récentes de l'épaule par un procédé simple et non-douloureux (treatment of dislocation of shoulder). H. Huguier.

24. Hydatid Embolism of Pulmonary Artery.—The syndrome induced may be that of ordinary embolism of the lungs, or it may be modified by the character of the embolus. The special syndrome is characterized by sudden onset accompanied by symptoms suggesting ordinary pulmonary embolism, but with the intense, persisting dyspnea unaccompanied by distinct stethoscopic signs. Hemoptysis and symptoms of asystole also develop, terminating fatally in time. In some cases an ascending infection hastens the accidents and death ensues in a syndrome suggesting pneumonia. A history of hydatid cysts elsewhere facilitates the diagnosis. The hydatid vesicle does not completely obstruct the vessel, nor does it entail secondary thrombosis, but the disturbance in the circulation proves fatal sooner or later. In the 12 cases on record, the affection had a protracted course in 4. The patient in the case described was a printer of 42, previously apparently healthy, who succumbed in a few days with dyspnea, cyanosis and other symptoms suggesting pneumonia.

25. Hydro-Hemolysis Test for Tubercle Bacilli.—Ten c.c. of human blood are diluted with 200 gm. of distilled water which destroys the blood corpuscles almost at once. The limpid fluid is then distributed in two or three vials and centrifuged; the sediment is then spread on six or eight cover glasses and examined for bacilli. These stain and show up finely, and are detected with much greater facility and more promptly than by other technics.

Semaine Médicale, Paris.

32 (XXV, No. 25, June 21.) *Tétanie d'origine parathyroidenne. G. Marinesco.
33 (No. 26.) *Traitement chirurgical précoce des collections liquides endo-pulmonaires, non tuberculeuses. F. Lejars.
34 (No. 27.) *La rétention de l'urée dans le mal de Bright, comparée à la rétention des chlorures. F. Widal and A. Javal.
35 (No. 29.) *Les émotions morales peuvent-elles déterminer des affections organiques aigues du système nerveux? L. Cheinisse.

32. Tetany of Parathyroid Origin.—Marinesco's article is a clinical lecture on a case of intermittent tetany exhibiting several symptoms supposed to be peculiar to exophthalmic goiter. He reviews the various causes of tetany, calling attention to the fact that the thyroid body becomes hypertrophied during gestation, and that the lack of this physiologic hypertrophy is liable to entail serious disturbances. On the other hand, gestation has an unfavorable influence on already existing thyroid and parathyroid insufficiency, as has been abundantly proved by clinical and experimental research. This suggests that tetany and eclampsia may be the result of parathyroid insufficiency. This assumption is corroborated by Vassale's recent success in treatment of eclampsia with extract of parathyroid glands, chronicled in The Journal recently, page 363. Marinesco put his patient on this organ therapy and during the twenty-three days interval at date of writing the tetany had not reappeared and the other symptoms had gradually subsided. He used beef parathyroid glands and is convinced that this parathyroid treatment has a promising future in treatment of various forms of spasmodic contractions.

33. Early Surgical Treatment of Intrapulmonary Non-Tuberculous, Fluid Pockets.—Lejars denounces the dilatory way in which morbid processes in the lungs are allowed to develop unhindered. Their spontaneous irruption into the air passages and expulsion by a vomica are rare occurrences and the physician should not trust to such an event. The dangers of delay outweigh those of a vague diagnosis, and early surgical intervention should be the rule, not the last resource. It is the only means of cure in the majority of cases, and the physician and surgeon should endeavor to popularize it.

34. Retention of Urea in Bright's Disease.—Widal and Javal summarize their extensive study of this subject in the statement that chlorids and urea may be retained in the organism together or separately in the course of Bright's disease. The mechanism of their accumulation varies for each. In the course of the "uremic" state the phenomena due to the retention of the chlorids are distinct from those due to the accumulation of nitrogen in the blood. These two kinds of retention offer entirely different indications for dietetic treatment. Deprival of salt is effectual in combating the water-accumulating effects of retention of the chlorids. When the nitrogenous bodies are accumulating in the blood, ingestion of albuminoids should be reduced. Administration of from 100 to 150 gm. of lactose aids in nourishing the patient while it does not favor the development of toxic substances, and with abundance of water is liable to banish the attacks of eclampsia and the edema, as occurred in a recent case in Lemierre's experience, after four days of this lactose and water diet. The theoretic régime for a patient with retention of nitrogenous bodies would be exclusively carbohydrates and fats, substances which form merely carbonic acid and water in their disassimilation. Such a diet, however, could be imposed only for a short time, as albuminoids are necessary for regeneration of the tissues. Comparison of the proportion of urea in the blood with the proportion of albumin in the diet allows the quantity of albuminoids to be ingested to be scientifically regulated. Local or general venesection is a valuable aid in this disease, and it allows surveillance of the proportion of urea in the blood which should be systematically determined. As a general rule, however, the amount of albumin allowed in Bright's disease should be moderate but sufficient. Milk is not so innocent as generally supposed, for 3.5 liters contain about 120 cm. of albumin, that is, more than the normal man has need of. The milk supplies also too much water for certain cases. Out of 3 patients who died with an excess of urea in the blood, 2 had been on a milk diet for several weeks and one had ingested nothing but 3 liters of milk a day for the space of two years, when the first symptoms of the terminal uremia developed. It must not be forgotten that the nitrogen in the food, whether from meat, vegetables or milk, leads to the production of urea. Milk owes its value in kidney disease to the lack of salt, and Widal's experience has demonstrated that it can be advantageously replaced by substituting for 3 liters of milk, 400 gm. of meat and 500 gm. of bread, without salt, or a milk-vegetable diet which is much more appetizing. Meat in itself is not injurious in kidney disease. As a general rule, from 100 to 200 gm. of meat will be found sufficient to supply the necessary albuminoids while imparting variety to the diet. Research on patients whose blood was tested repeatedly for urea, has only confirmed the value and harmlessness of this amount of meat given in combination with starchy substances or milk. An excess of salt should always be avoided in the diet as a precautionary measure, and likewise an excess of albumin, as one never knows when accumulation and retention may be impending.

35. **Are Moral Emotions Able to Induce Organic Nervous Affections?**—Cheinisse answers his question in the affirmative, and cites a number of instances to sustain his assertion that a psychic shock under certain circumstances may induce an anatomic lesion of the nerve centers, just as it may favor the development of epilepsy, hysteria or a neurosis of any kind. He insists also on the fact that a certain interval may and usually does elapse between the emotion and the first manifestations of the consecutive nervous affection. Paralysis from fright and similar affections may be readily cured by appropriate measures, but, on the other hand, they may persist, and the prognosis should always be more or less guarded.

Berliner klinische Wochenschrift.

36 (XLII, No 26, June 26.) Aetiologie und spezifische Therapie des Heufiebers (hay fever). Dunbar.
37 Ueber Isoform-dermatitis bei einem mit Iodoform-Idiosynkrasie behafteten Kranken. E. Hoffmann.
38 *Eine neue Palliativ-operation bei benignen Mastdarm-Strikturen (of rectum). Leuk.
39 Heilung der tuberkulösen Peritonitis an einem spontan geheilten Falle. A. Köppen (Norden).
40 Ueber den Wirkungskreis der Balneotherapie in der Gynäkologie. L. Nenadovics.
41 *Ueber die primäre Mikrogastrie. J. Bendersky.
42 *Die Balneotherapie der Harnkrankheiten (of urinary affections). C. Posner.
43 Mushroom Poisoning.—Pilzvergiftung. T. A. Maass.

38. **Palliative Operation on Stricture in Rectum.**—Leuk has performed in several cases an exceedingly simple operation which apparently answers the desired purpose as effectually as the more complicated technics. His first patient was a woman of 35, with a history of syphilis. Between 4 and 5 cm. above the anus a circular stricture narrowed the lumen to 1 cm. He excised a wedge of the stricture large enough to allow the passage of feces through the opening thus enlarged. The incision was restricted to the constricting parts, and did not enter the underlying tissues. This prevented any secondary cicatrix formation and shriveling. The excision was done through the speculum without fear of hemorrhage, as Allingham has expressly declared that "hemorrhage from the rectum need not be feared." During the two years since the patient has been free from any disturbances in defecation without restrictions as to diet. The local inflammation in the rectum has been materially reduced, and the general health has improved, while there has been no further increase in the constriction. The effects were equally good in two similar cases. He urges that this simple measure should be given a trial before undertaking more complicated technic, as it is liable to prove all that is necessary, and if not, it does not interfere with more radical procedures later.

41. **Congenital Small Stomach.**—Bendersky's article on what he calls "microgastria" has already been mentioned in these columns. He has found that certain persons, always women, have an abnormally small stomach. They suffer from repeated uncontrollable vomiting, apparently of the nervous type. They are also subject to obstinate hiccoughing. He thinks the condition is analogous to the infantile uterus, and suggests that the food should be taken in small amounts. Treatment is of little use except possibly repeated lavage of the stomach, as the mucous membrane seems to be abnormally sensitive in these cases.

42. **Balneotherapy in Urinary Affections.**—Among the points emphasized by Posner is the necessity for discriminating between salt-containing and salt-free waters in treatment of urinary affections. The action of salt in inducing edema has been amply demonstrated in the last few months. Chronic catarrh of the bladder and kidney pelvis seem to be best adapted for treatment with mineral waters. Chronic parenchymatous nephritis contraindicates them. Neuroses of the urinary and sexual apparatus are often favorably influenced by a course of treatment at a watering place.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

Last indexed page 669.

44 (XXXI, No. 26.) Official Reports on Epidemic Cerebrospinal Meningitis. v. Lingelsheim and Radmann.
45 Ueber Darstellungsweise und Befund der bei Lues vorkommenden Spirochaete pallida. K. Herxheimer and H. Hübner.
46 Zur Färbung der Spirochaeta pallida (improved stain). G. Giemsa.
47 *Die Behandlung infektionsverdächtiger und infizierter Wunden, einschliesslich der panaritialen, phlegmonösen, furunculösen Entzündungen (treatment of inflammations). P. L. Friedrich.
48 Myopie-Operation und Netzhautablösung (detachment of retina). A. v. Hippel.
49 *Zur Diagnose und Therapie der chronischen Perityphlitis. A. Albu. (Commenced in No. 25.)
50 Ueber Bau und Einrichtung von Räumen zur Behandlung von Gehstörungen (equipment for treating disturbances in walking). Kann.
51 (No. 27.) Behandlung der Ekzeme. O. Lassar.
52 *Ueber die Diagnose und Therapie der chronischen Perityphlitis. I. Boas.
53 *Perityphlitis und Gravidität. C. J. Gauss.
54 *Zur Behandlung eingeklemmter Brüche (incarcerated hernia). Brix.
55 (No. 28.) *Ueber Kleinhirn-Cysten (cysts in cerebellum). Lichtheim.
56 *Technic of Removal of Cancer in Rectum.—Die Erhaltung des Schliessmuskels bei der Exstirpation des Mastdarmkrebses und seine spätere Funktion. P. Kraske.
57 Zur Frage der Bildung von bakteriellen Angriffsstoffen im lebenden Organismus (aggressin formation). A. Wassermann and J. Citron.
58 Surface Tension of Body Juices.—Ueber die Oberflächenspannung von Körpersaften unter physiologischen und pathologischen Bedingungen. A. Bickel.
59 Anemia and Liver Functions in Syphilis.—Untersuchungen zur Pathogenese der Anämie und zur Funktionsprüfung der Leber bei Syphilitikern. C. Stern.
60 Der Tod in der Morphinum-Skopolamin Narkose (death from anesthetic). H. Landau.
61 *Zur lokalen Sensibilisierung und Immunisierung der Gewebe gegen die Wirkung der Radiumstrahlen (tissues and radium rays). R. Werner.

47. **Treatment of Infected or Suspicious Wounds.**—Friedrich writes from Bier's clinic and states that his observation of Bier's method of treating even acute inflammations by inducing passive congestion has converted him from a pronounced opponent to an admirer, although he is waiting for time to pass final judgment on this technic. He is convinced that the adoption of physical measures in the treatment of wounds, abandoning the chemical, and striving to promote and supplement the biologic processes, is the greatest advance since Lister. In all wounds suggesting the possibility of tetanus, he advises total excision of the focus and foreign body, supplemented by preventive injections of antitoxin.

49. **Treatment of Chronic Perityphilitis.**—Albu proclaims that the indication for surgical intervention, in these cases at least, should not be the pathologic condition, but the impairment of health. He does not advise operating in chronic perityphilitis unless the diagnosis is absolutely sure, and when serious disturbances persist after careful internal treatment, including rest in bed, regulation of the bowels, wet packs, sitz baths and belladonna. He relates a number of cases which simulated chronic appendicitis but proved to be visceral neuralgia or hysteroneurasthenia, spastic obstipation or other affection, readily yielding to the above internal measures.

52. **Id.**—Boas does not regard the prognosis of chronic appendicitis as very serious, but still he advises the removal of the appendix even in the cases in which the inflammation never becomes acute. Internal treatment is of little benefit in these interminable chronic cases. Chronic inflammation developing after an acute attack should always be operated on, as also persisting disturbances in children and at the age of puberty. In the young, physical and dietetic restraint is absolutely unenforceable, and the appendix should be removed. He has never known of an instance of the complete cure of chronic perityphilitis. Sooner or later the patients return.

53. **Appendicitis and Pregnancy.**—Gauss describes 2 cases of appendicitis complicating pregnancy to call attention to the difficulty of diagnosis and the special indications in these cases. Differentiation and treatment require simultaneous gynecologic and obstetric experience with surgical and internal medical co-operation.

54. **Treatment of Incarcerated Hernia.**—Brix again calls attention to the readiness with which incarcerated hernia can be reduced after being sprayed with ethyl chlorid. He has frequently witnessed spontaneous reduction of the hernia under the spray.

55. **Cysts in Cerebellum.**—Lichtheim reports 2 cases of cysts in the left half of the cerebellum accurately diagnosed and operated on by Garré. The symptoms subsided afterward in each case with the exception of the irreparable optic atrophy.

He urges exploratory incision and prompt intervention to forestall choked disc in such cases.

56. **Retention of Sphincter Muscle in Removing Rectal Cancer.**—Kraske reports 14 cases which illustrate the advantages of the technic which he advocates and follows.

61. **Means to Enhance Action of Radium Rays.**—Werner relates the result of extensive research on the action of radium and means to enhance it. He found that the tissues reacted much more intensely to the rays when previously sensitized with injections of activated lecithin or of a solution of eosin. Still better results were obtained by a slight preliminary inflammatory reaction induced either by chemical, thermic or mechanical irritation or congestion. He became convinced that the local accumulation and destruction of leucocytes by these measures was an important factor in the result, and hence increased it by preceding leucocyte-attracting injections of turpentine or nucleic acid. He also found it possible to render the tissues more resistant or immune by a preceding prolonged irritation, refrigeration or preliminary exposure to the rays. He suggests that a combination of these various measures might materially enhance the value of radium therapy. By rendering the surrounding tissues immune and by increasing the susceptibility of the pathologic tissues, it might prove possible to increase the intensity of the exposure and to lengthen it without harm.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed page 663.

62 (LXI, No. 1.) *A Model Pediatric Clinic.—Entstehung der Breslauer Kinderklinik, die Aufgaben einer pädiatrischen Klinik und den Betrieb wie er in Breslau in Klinik und Poliklinik geübt wird. A. Czerny.
63 Zur Frage des künstlichen Morbus Barlow bei Tieren (experimental scorbutus). L. Bartenstein.
64 Fat in Food and Infant Metabolism.—Zur Wirkung der Fettdarreichung auf den Säuglingsstoffwechsel. W. Freund.
65 3 Fälle von Pachymeningitis hæmorrhagica mit Hydrocephalus externus. F. Goppert.
66 Lähmung der Glottiserweiterer im frühen Kindesalter (paralysis of glottis in infant). A. Hüssy.
67 *Ueber alimentäre Albuminurie. J. Kaliski and R. Weigert.
68 Elimination of Carbon and Nitrogen Through Urine in Infants and Older Children.—Die Kohlenstoff- und Stickstoffausscheidung durch den Harn beim Säugling und seine Bedeutung. R. Quest.
69 *Treatment of Obesity in Children.—Ueber Entfettungskuren im Kindesalter. A. Orgler.
70 *Lime in Infantile Brain.—Ueber den Kalkgehalt des Säuglingsgehirns und seine Bedeutung. R. Quest.
71 Zur Kenntnis der natürlichen Immunität des Kindes im ersten Lebensjahr (under one year). A. Schütz.
72 Ueber Demineralisation und Fleischtherapie bei Tuberkulose (zomotherapy). F. Steinitz and R. Weigert.
73 Beitrag zur Frage der Thymus-Hypertrophie. G. Tada.
74 Ueber die Herkünft des fötalen Fettes (origin of fetal fat). M. Thiemich.
75 *Influence of Diet on Chemical Composition of Organism.—Ueber den Einfluss der Ernährung auf die chemische Zusammensetzung des Organismus. R. Weigert.
76 *Die exsudative Diathese. A. Czerny.
77 (No. 2.) Aims of Modern Pediatrics.—Die Grundlagen und Ziele der modern Pädiatrie. Th. Escherich.
78 Zur Kenntnis der Poliomyelitis anterior acuta und subacuta s. chronica. E. Lävegren.
79 Biologisches zur Milch-Pasteurisierung (of milk). A. Hippius (Moscow).
80 Zur Kenntnis des Meningococcus intracellularis. B. Weyl.
81 (No. 3.) Ein weiterer Beitrag zur Kenntnis der Energiebilanz beim Säugling (balance of energy in infants). O. Heubner.
82 Acetonuria in Infectious Diseases in Children.—Zur Kenntnis der Azetonurie bei den Infektions-Krankheiten der Kinder. L. F. Meyer.
83 Die Acidose im Kindesalter (in children). L. Langstein and L. F. Meyer.
84 Immunisierung durch Milch (immunization by milk). B. Salge.
85 Zur Bekämpfung der grossen Säuglingessterblichkeit (infant mortality). M. Ebert.
86 Zur Kenntnis des periodischen Erbrechens im Kindesalter (periodical vomiting of children). P. Misch.
87 (No. 4.) Food and Energy Needed by Breast Fed Infant.—Beitrag zur Frage nach dem Nahrungs und Energiebedürfnis natürlich ernährten Säuglings. P. Reyher.
88 Ueber den Fettgehalt der Frauenmilch (fat in human milk). Id.
89 Zur Kenntnis des Kreatininstoffwechsels beim Säugling (creatin metabolism in infants). H. Rietschel.
90 Zur Kenntnis der hämorrhagischen Erytheme im Kindesalter. L. Langstein.
91 (No. 5.) *Ueber "paradoxes Schwitzen" beim Kinde (paradoxical sweating in a child). J. Zanpert.
92 Poliomyelitis.—Klinische Untersuchungen an 240 Fällen von spinaler Kinderlähmung (spinal paralysis). R. Neurath.
93 Tuberkulose im ersten Lebensjahre (in first year of life). F. Stirniman (Zurich).
94 Serum-Behandlung der Diphtherie. Zur Haltbarkeit des Serums. R. Kraus.
95 Ueber congenitale familiäre Hypoplasie des Kleinhirns (of cerebellum). H. Frenkel and L. Langstein.

62. **The Breslau Clinic for Children's Diseases.**—Czerny protests against regarding the infant department as a mere appendix to the pediatric clinic. It should be considered the most important feature of the institution. Orthopedics and surgery have no place in the pediatric polyclinic, it should be devoted almost exclusively to children under two years of age. It should aim to keep a running record of each case and to follow the children from year to year. By this means, material of incalculable value will be accumulated, and many workers in various well-managed children's clinics can coöperate in a single task. Study of the physiology and pathology of the child during its first two years of life is the most important part of the pediatrist's work.

67. **Alimentary Albuminuria.**—Kaliski and Weigert fed large amounts of albumin to healthy children—as much as 24 raw eggs in two days in some instances, and 42 in three days in another. In only 2 of the entire number of children could even traces of albumin be detected in the urine thereafter. The tests with cooked albumin were all negative. They suggest as a possible explanation for alimentary albuminuria the assumption of insufficient digestion—a condition of gastric achylia. Persons in this condition should be preferred for the tests.

69. **Treatment of Obesity in Children.**—Orgler recommends potatoes and fluids in abundance with avoidance of fat and sauces. An obese boy on these restrictions lost ten pounds in the course of a month. The nitrogen balance was kept up or nitrogen taken in excess, as shown in the dietary appended.

70. **Lime Content of Infants' Brains.**—Quest announces that the proportion of lime in the brain of the fetus or newly-born child is remarkably large, but that it soon sinks to the ordinary proportion. He is inclined to regard a deficiency of lime as possibly responsible for the increasing tendency to cerebral excitability in children. The brains of 3 children who had succumbed to convulsions showed an abnormally small proportion of lime in their composition.

75. **Influence of Food on Chemical Composition of Organism.**—The percentage of water is a decisive factor in artificial culture media, and Weigert suggests that this may be a factor also in individual immunity. Extensive experiments on animals demonstrated that the character of the food has a marked influence on the retention of water in the body. The proportion of water is the highest when the food consists principally of carbohydrates. Other experiences are related which lend plausibility to this view that individual immunity may be influenced by the character of the food and the consequent retention of water. The large amount of easily digested fat in the breast milk may be one cause for the relative high immunity of breast-fed children.

76. **The "Exudation Diathesis."**—Czerny suggests that a congenital anomaly may be responsible for various affections accompanied by exudation, such as eczema, recurring bronchitis, tonsillitis, retropharyngitis and other affections of mucous membranes. They form a group with features in common, suggesting a congenital anomaly of the juvenile organism. The course of the individual cases is determined by the character of the food, the condition of the nervous system and intercurrent infections. Avoidance of all overfeeding, a vegetable diet, excluding even eggs, and systematic disregard of exaggerated subjective disturbances and scrupulous avoidance of intercurrent infections are the most important means of combating this "exudative" diathesis.

91. **Paradoxical Sweating in a Child.**—The child was a girl of 6, who perspired at certain points, the back of the head, breast, etc., on exposure to cold. The tendency to this abnormal perspiration occurred at periods of a few months, with long intervals. Under arsenic the periods have become shorter, the intervals longer, and the tendency has been much reduced.

Therapie der Gegenwart, Berlin.

Last indexed page 667.

96 (XLVI, No. 6.) *Die Heilyung des Krebses der Gebärmutter (cancer of uterus). Max Runge (Göttingen).
97 *Zur Intravenösen Injektionstherapie. W. Doevenspeck.
98 *Ueber der Indikationen und Kontraindigationen der Anwendung von Eisenpräparaten bei Magenkrankheiten (iron in stomach diseases). H. Elsner (Boas' clinic, Berlin).

99 *Künstliche Sauermilch als diätetische Therapie kranker Säuglinge (artificially soured milk for sick infants). Otto Rommel (Munich).

100 'Ueber Arbeitstherapie" (occupation therapy). B. Laquer Wiesbaden). Reply to Veraguth.

96. **Cancer of the Uterus.**—Runge sees hope for better results in the treatment of carcinoma of the uterus in further improvement of operative technic, but more especially in an earlier diagnosis of the disease. The earlier the patient comes to operation the more satisfactory the results will be. The great moral responsibility resting on the family physician, to whom such patients usually first apply, must be thoroughly appreciated. The symptoms of beginning carcinoma should be borne in mind, especially the fact that pain is a late appearing symptom, and the importance of irregular and easily induced hemorrhage. The physician should realize that, especially in cancer of the cervix, the hours are precious and a day's delay in confirming the diagnosis may be fraught with momentous consequences. He should use every effort to persuade the patient to permit an immediate examination. A piece of tissue excised should be submitted at once to an expert. If doubt exists, it is best to send the patient at once to a specialist. It is important also that women should be instructed to note every suspicious symptom and not to be misled by the idea of "change of life," etc. Midwives are often consulted, and they should be cautioned against giving an opinion on these matters, and the physician should refrain from prescribing without thorough examination. Women should be cautioned against trusting to the representations of irregular practitioners.

97. **Intravenous Injections.**—Doevenspeck can not corroborate the favorable opinion of Mendel in regard to the results of intravenous injections of salicylic acid compounds and thiosinamin. He has had much less brilliant success, finding in several cases that, after the intravenous injection had failed, other modes of applying the salicylates were successful in curing obstinate rheumatic affections. The effect of thiosinamin in removing cicatricial tissue was never striking, and the failures outnumbered the successes. The author can not, therefore, agree with Mendel that this method will constitute the therapy of the future, on account of its exacting technic and of the fact that it offers only slight advantages over ordinary methods. He thinks, however, that it is capable of more extensive application than would appear from the present reports. Extensive trials of it have been made in Italy, where the intravenous route is commonly used, and animal experiments have shown that the veins bear the introduction of considerable amounts of various medicines without harm.

98. **Iron in Stomach Diseases.**—Elsner considers it established that iron is absorbed and assimilated, and that organic combinations are the most suitable for therapeutic administration because iron is contained in the food in proteid combination. A difference in the hemoglobin-forming power of the various preparations of iron has not been demonstrated, so that the choice of the various preparations at present should be decided by their effect on the digestive organs. Elsner experimented with a hemoglobin preparation to determine its effect upon the digestive functions. He concludes as follows: Symptoms of dyspepsia do not contraindicate the use of iron preparations, but in such case functional investigation of the stomach should precede the use of iron. Iron preparations are contraindicated in organic stomach diseases, with hyperacidity or hypersecretion, and if existing dyspeptic troubles are increased by the use of the iron.

99. **Artificially Soured Milk as a Dietetic Treatment for Infants.**—Remmel has substituted for buttermilk, as a food for sick children, an artificially soured milk made by inoculating pure centrifuged milk ("skim milk") with a pure culture of lactic acid bacilli. The milk is boiled with a chemically pure preparation of starch, which causes the casein to assume a colloidal form. The best test for the success of the preparation is the smell and taste. The odor should be feebly acid and pleasantly aromatic, and the taste should be a sweetish sour, never bitter or rancid. If the stomach rejects it or the number of stools are increased, the fault probably lies in the preparation. In such cases it should be omitted for a few days and a new beginning made with a fresh preparation. Soxhlet's nutrient sugar is added to the extent of 25 gm. per liter, together with an equal amount of cane sugar and from 10 to 15 gm. of the starch preparation. When cool, the "acidifying tablet" is added. This he has found to be of the greatest advantage, as it allows the use of other carbohydrates that otherwise could not be tolerated. This food is usually well liked by children. In regard to indications for the use of the soured milk he concludes that the acute, often febrile, bacterial diseases of the intestine after a period of abstinence, furnish an indication for the sour milk diet, with the exception of intestinal troubles caused by a too rich carbohydrate diet with fermentation and slimy stools. It is still more necessary, however, in chronic nutritive disturbances from the lightest dyspepsia with relative hypochylia, to the most severe, often apparently irreparable atrophy with extensive disturbance of metabolism. He suggests its use for adults in metabolic disturbances (diabetes and gout), as well as in gastrointestinal diseases and tuberculosis, and as a convalescent diet on account of its being rich in albumin, easily digested, and cheap.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

ADDRESS ON PARENTAL RIGHT AND PARENTAL RESPONSIBILITY. Viewed in Relation to the Right of the Community. C. K. Mackellar, M.B., M.L.C., at the Public School Teachers' Conference, June 26, 1905. Paper. Pp. 17. Published by the authority of the Government of the State of New South Wales. Sydney: Wm. A. Gullick, Government Printer, 1905.

PATHOLOGY AND MORBID ANATOMY. T. H. Green, M.D., F.R.C.P. Tenth American Revised from the English Edition, Revised and Enlarged by W. C. Bosanquet, M.A., M.D. 1 colored plate, and 348 illustrations. Cloth. Pp. 610. Price, $2.75 net. Philadelphia: Lea Brothers & Co., 1905.

MONTHLY SUMMARY OF COMMERCE AND FINANCE OF THE UNITED STATES. June, 1905. Department of Commerce and Labor Bureau of Statistics. No. 12. Series 1904-1905. Paper. Pp. 4,780. Washington: Government Priuting Office, 1905.

MANUAL OF THE DISEASES OF THE EYE, for Students and Practitioners. C. H. May, M.D. Fourth Edition. 360 original illustrations, including 21 plates, with 60 colored figures. Cloth. Pp. 391. Price, $2 net. New York: Wm. Wood & Co.

READY REFERENCE HANDBOOK OF DISEASES OF THE SKIN. G. T. Jackson, M.D. 91 illustrations and 3 plates. Fifth edition. Cloth. Pp. 676. Price, $2.75 net. Philadelphia: Lea Brothers & Co., 1905.

TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY for Students of Medicine. J. H. Long, M.S., Sc.D. Cloth. Pp. 424. Price, $2.50. Philadelphia: P. Blakiston's Son & Co., 1905.

NEW PATENTS.

Recent Patents of Interest to Phisicians:

795678	Apparatus for regenerating exhaled air for respiration purposes. Max Bamberger, F. Bock and F. Wanz, Vienna, Austria-Hungary.
795679	Regenerating exhaled air for respiration purposes. Max Bamberger, F. Bock and F. Wanz, Vienna, Austria-Hungary.
795573	Atomizer. Wm. J. Barber, Honeoye Falls, N. Y.
795757	Formaldehyd product and making same. Henry S. Blackmore, Mount Vernon, N. Y.
795510	Bottle holder for medicine cases. Augustus W. Hoff, New York, N. Y.
795524	Invalid elevator and truck. Richard Leffmann, Chicago, Ill.
795366	Oil-atomizer. Washington L. Parker, Elgin, Ill.
795562	Absorbent and deodorizer. Silvio T. Tatti, Buenos Ayres, Argentina.
795567	Endoscope or other optical instrument. Reinhold L. Wappler, New York.
795323	Apparatus for electrothermal treatment. D. M. Watson, Portland, Ore.
795469	Sanitary belt. Arthur M. Young, Chicago, Ill.
796114	Electrotherapeutic apparatus. H. E. Currey, Baker City, Ore.
795903	Physicians' operating table. Barzillai B. Foster, Portland, Me.
795866	Inhaler. Joshue R. Spanogle, Athena, Ore.
796791	Bedstead for invalids. James C. Anderson, Victoria, Can.
796552	Ligature container. Perry S. Bauer, Chicago, Ill.
796496	Peptonized milk and making same. J. H. Campbell, Brooklyn, N. Y.
796713	Making urea. Hans Foersterling and H. Philipp, Perth Amboy, N. J.
797094	Surgical bandage plaster. Jacob Benario, Frankfort-on-the-Main. Germany.
797510	Surgical bandage. Carl Fuhrhans, Munich, Germany.
797365	Douche. Christian W. Meinecke, Jersey City, N. J.
797024	Making phenol esters. Fin Sparre, Wilmington, Del.
797335	Artificial hand. Zachariah D. Taylor, Clay, W. Va.
797483	Bandage-rolling machine. Frank G. Wilkins, Washington, D. C.

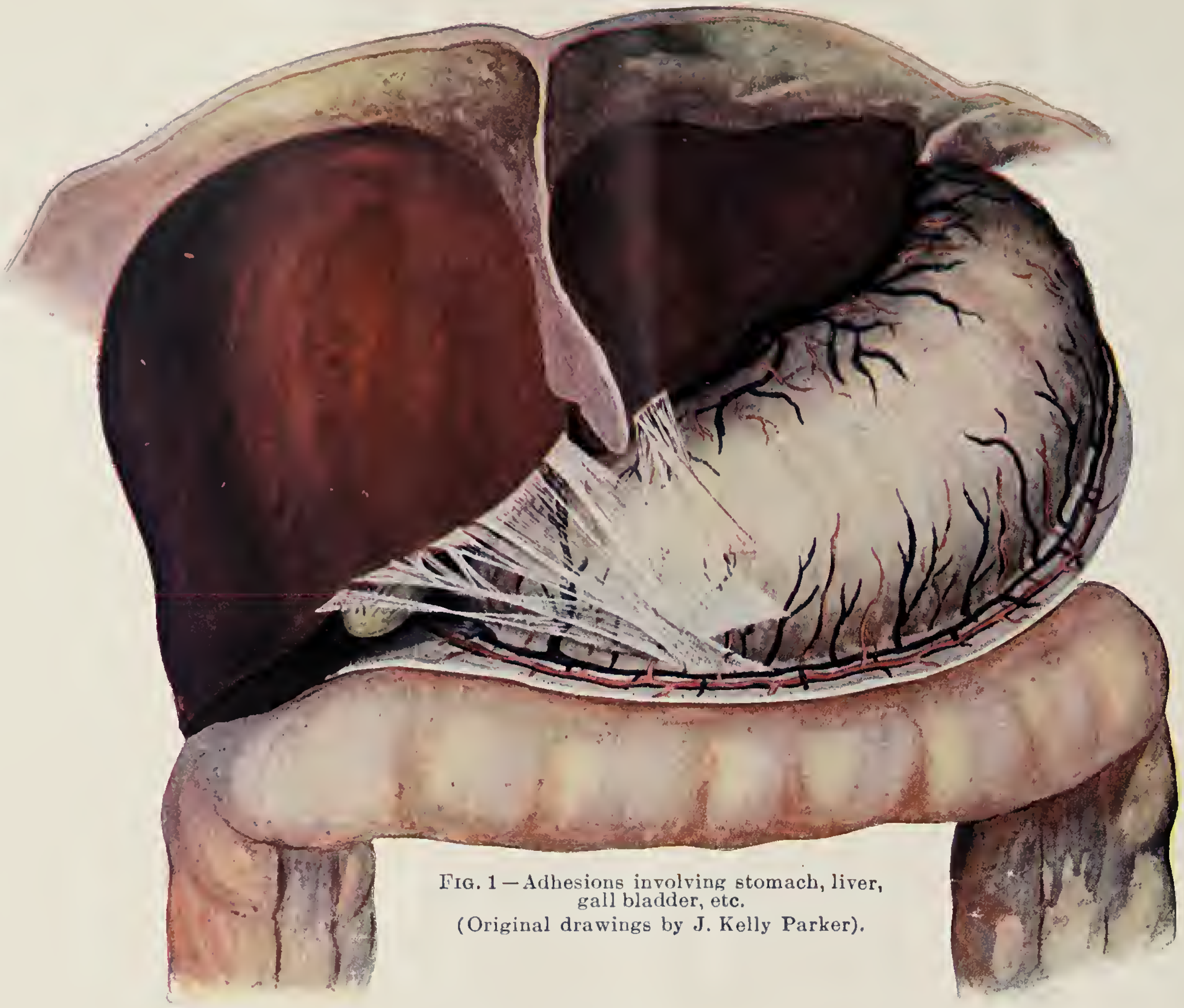


Fig. 1—Adhesions involving stomach, liver, gall bladder, etc.
(Original drawings by J. Kelly Parker).

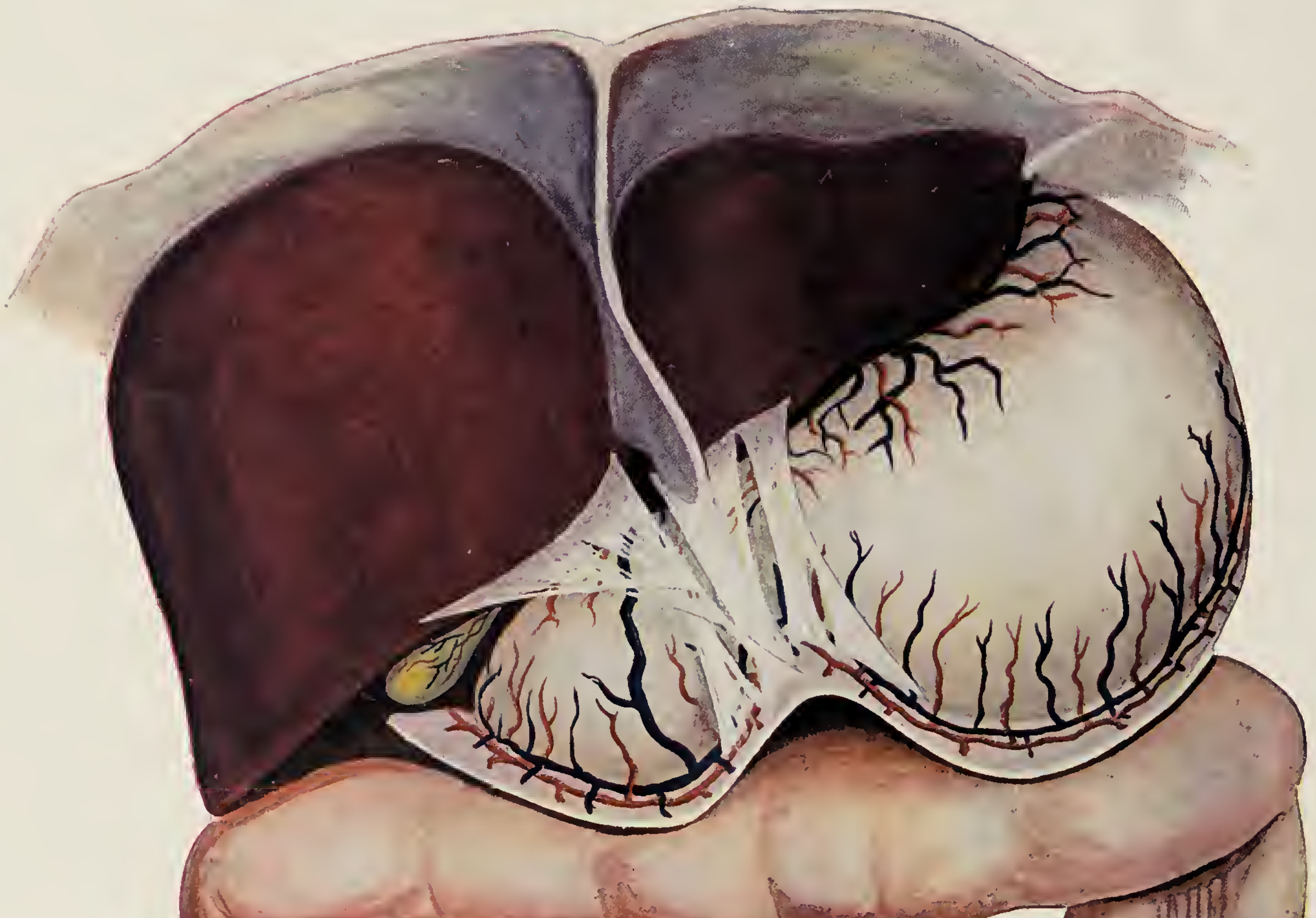
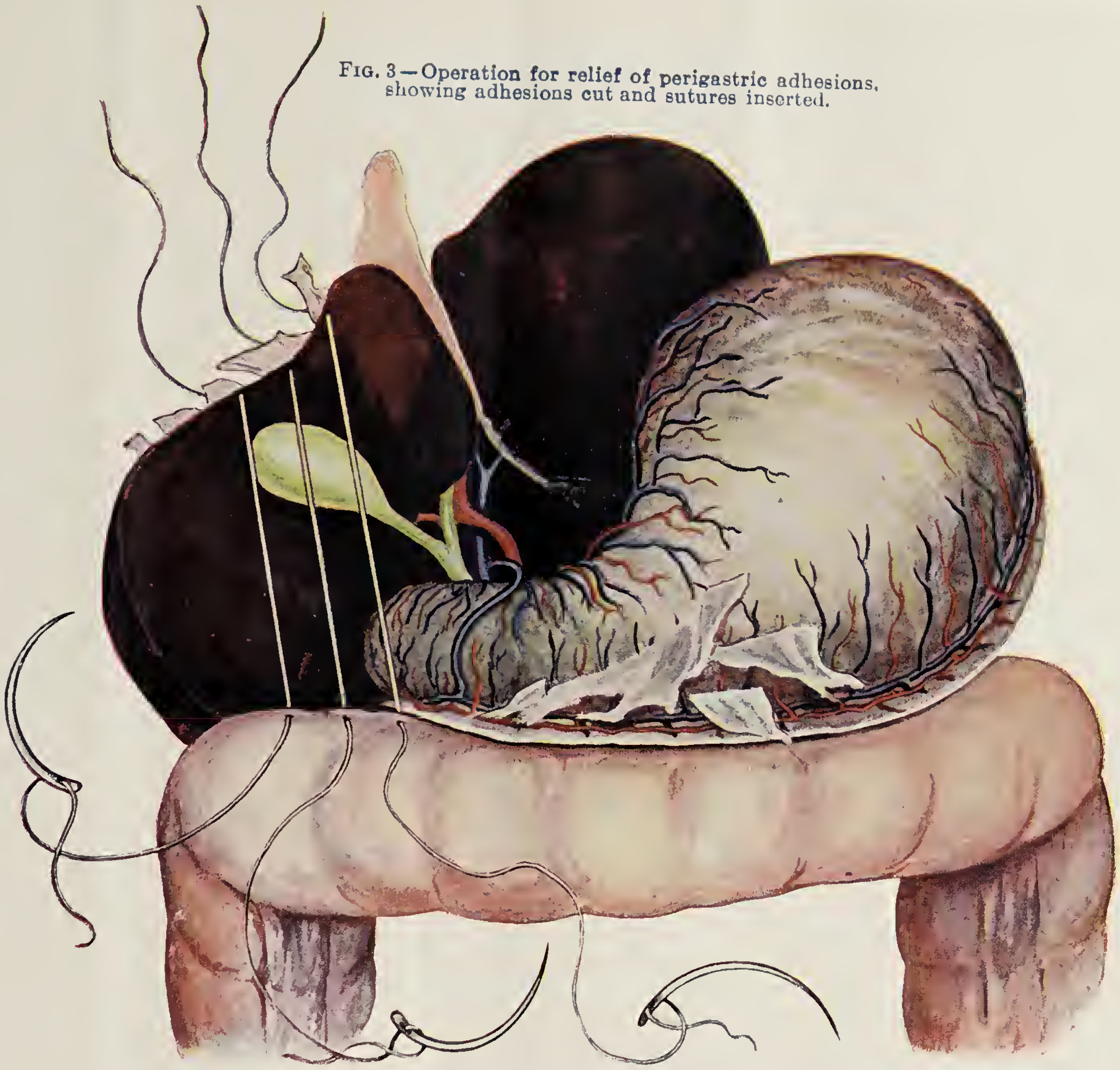


Fig. 2—Adhesions connecting the liver edge and part of the pyloric end of the stomach, causing hour-glass contraction of the latter organ

FIG. 3—Operation for relief of perigastric adhesions, showing adhesions cut and sutures inserted.



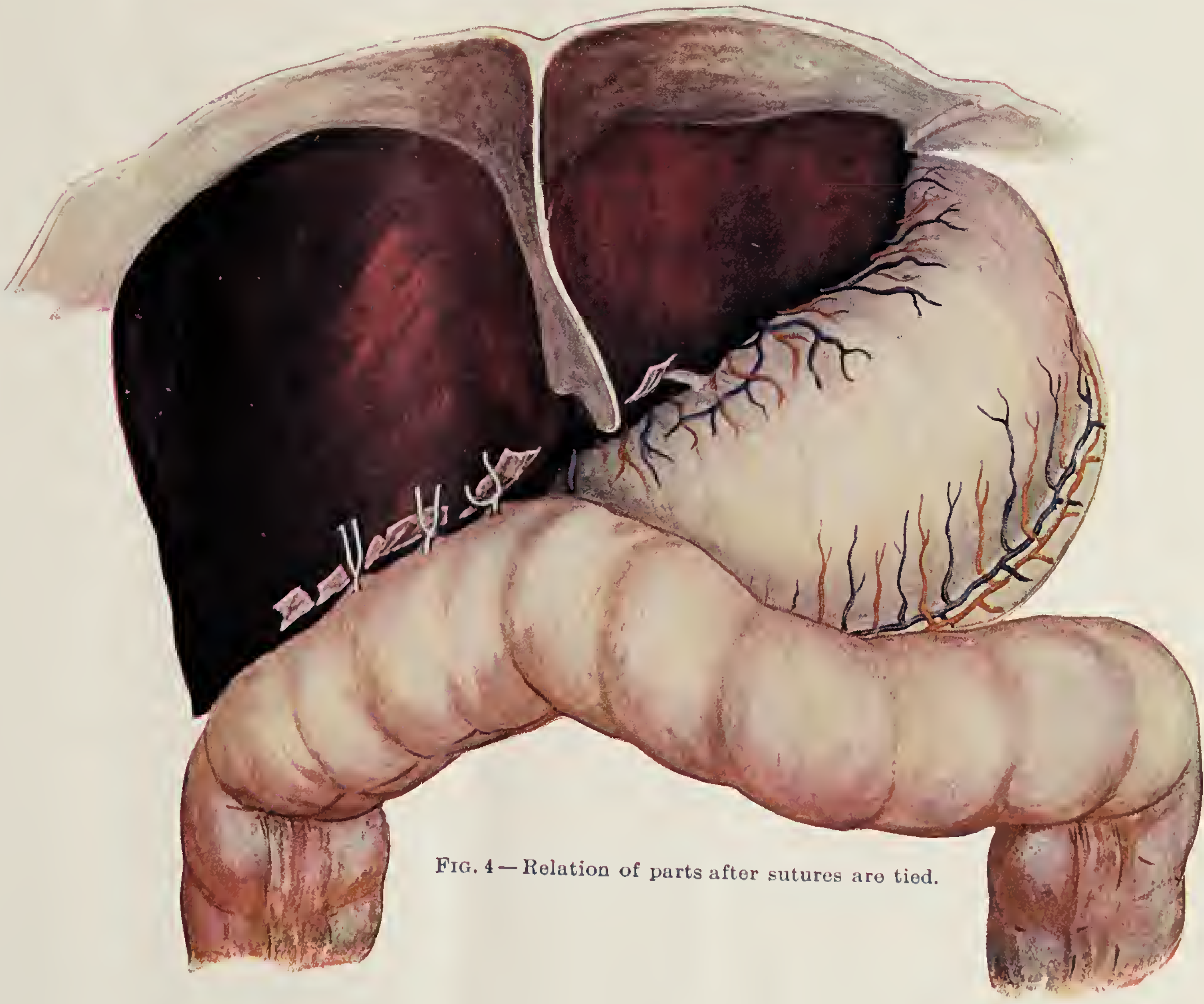


FIG. 4—Relation of parts after sutures are tied.

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Original Articles

COLOHEPATOPEXY OR COLON SUBSTITUTION.

A NEW OPERATION FOR PERIGASTRIC ADHESIONS AFTER GALLSTONE OPERATIONS.

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All postoperative adhesions after gallstone operations do not cause trouble. In many cases no pain or disturbance results from numerous firm bands uniting stomach, liver and colon. In others there are disturbances of great variety, ranging from slight dragging to severe pyloric compression, torsion of the pars pylorica, hour-glass stomach, dilatation, vomiting, and evidence of outside pressure on the liver ducts, even to the extent of causing jaundice and hepatic colic. There may even be symptoms simulating recurrence of gallstones.

With the increase of gallstone surgery, the disposal of the viscera after operating so as to avoid gastric deformation by adhesions will have to be given much more serious attention, or else a series of operations will have to be performed to relieve deformities almost as distressing as the original disease.

As adhesion building is normal to gallstone surgery, it must be ascribed to luck and accident rather than to forethought that so few of these sequelæ occur.

This risk may be understood more clearly by considering, so to say, the geography and orientation of this corner of the abdomen. There is no part of the cavity which has such invariable boundaries as the gallstone surgical field. Unlike most parts, it is not subject to the floating in or intrusion of other viscera. Its surroundings, to a certain extent, shut it off and prevent it from draining into or out of the rest of the cavity. In form it is a triangle, bounded above by the liver and appendages, below by the colon and mesocolon, and to the left by the stomach, gastrohepatic omentum and duodenum. Of course, the pylorus lies somewhat behind and partly between the colon and the liver. The triangle is a potential cavity only. As soon as retractors are introduced, the triangular form of the space is developed. This space can also be conceived as a spherical triangle, or as a pyramid, with its base on the abdominal wall, and its apex in the foramen of Winslow. The left border of the cavity is made up of the pars pylorica, pylorus, gastrohepatic ligament and duodenum in a line, having its center somewhat immovably fixed by the second portion of the duodenum.

This potential space, which I have ventured to call a "triangle," really becomes such when it has been filled with drainage tubes and gauze strips after operation. It is between the above mentioned organs and seldom any others that postoperative adhesions form. Of course, the mesocolon and the various omenta play an important part by interposing their layers. The greater omentum often rises to help fill this space, and I have sometimes encouraged this tendency by using it to cover the colon and pylorus. Either with or without such interposition, the result of operation and drainage, or of pericystic inflammation alone, is the obliteration of this "triangle." As long as the present methods of operating continue, the occurrence of these adhesions must be expected. It is not clear that it would be desirable to prevent them. They are, in fact, an end to be sought, necessary and life-saving, in all abdominal work not strictly aseptic; the only thing which makes transperitoneal drainage practicable. They are even more life-saving when perforation and pericystitis have occurred without operation, a thing much more common than was formerly recognized.

We, therefore, expect, with or without previous operation, that many cases will show the colon, liver base or edge and stomach end agglutinated into a mass around the gall tracts. It is easy to estimate that in most instances no bad symptoms are caused by these adhesions. Fortunately, most gallstone patients leave us cured. The minority which fail of relief, or are made worse, may be divided into three classes:

1. Those cases in which no stone was found; or, in other words, in which mistakes in diagnosis had been made.

2. Those cases in which some of the stones were overlooked.

3. Those cases, successful in other respects, in which perigastric adhesions and deformity appear to keep up the gastralgia.

This unpleasant minority should be studied carefully from every possible standpoint. In proportion as the adherent masses are deep and posterior, they are less troublesome, since they concern parts normally fixed by omentum and less mobile. In some cases, it is as if the gastrohepatic omentum had merely extended its attachments and been fortified by the gastrocolic or the greater omentum and the mesocolon, which had thrust themselves into the diseased area. The only effect of this is to anchor the first portion of the duodenum and colon a little more firmly than usual, while the pars pylorica is still free to rotate as the stomach distends, and no outside pressure is felt on the pyloric ring.

It is far different when the anterior wall or either curvature of the stomach becomes seriously entangled with the gall bladder, liver edge or abdominal wall (Figs. 1 and 2). We can best realize what gastric pain and functional disturbance this can produce by recalling the different anatomic relations of the full and empty stomach, as demonstrated by Symington. The empty viscus has its right end near the middle line. The distended stomach moves several inches to the right by rotating around the second portion of the duodenum, which has little motion. The pylorus, he shows, moves more than the duodenum, and the pyloric part of the stomach is more movable than either. In other words, the full or dilated stomach rises into the cupola of the diaphragm and then rotates until the pylorus is pushed over against the gall bladder. The pyloric end of the stomach then overlaps the less movable pylorus, forming the so-called antrum pylori of Schaefer and Symington. It finally takes such a position that what was the anterior wall faces, first, outward, then even posteriorly, lying in contact with liver and gall bladder in a wholly new relation. It is when adhesions form in something like this right-sided relation that I have found gastralgia and loss of function curable by operation. On the other hand, when adhesions form chiefly between the colon and gall passages, or liver edge, no matter how dense and wide they are, I have never known of any trouble to result from them.

Lauenstein[1] gives some drawings of these adhesions to several viscera.

Since writing the foregoing I have seen the short but interesting paper of Dr. Robert T. Morris[2] on what he calls "gall spiders" or weblike adhesions around the gall tracts after inflammation, e. g., cholecystitis, gastroduodenitis, diaphragmatic pleurisy, etc. Morris lays stress on the factor of dragging on the great sympathetic ganglia. He also attributes cases of mucous colitis and diarrhea to colon adhesions. He advocates the breaking up of these adhesions and the use of Cargile membrane, or aristol powder, to prevent them from reforming. The paper shows great insight and cleverness in a new direction.

My own conclusions, based on five operations, are rather at variance with this. I have already stated that I regard postoperative and preoperative adhesions as necessary and desirable. In a great number of gall-tract adhesions between liver, colon, gall bladder and duodenum, I do not recall any instance of angulation of the cystic duct or apparent dragging on the sympathetic ganglia, nor any of mucous colitis due to bands. The trouble I have seen has always been from gastric disturbance, and then only when the anterior wall or one border beyond the pylorus became involved.

I also differ entirely with Morris regarding the technic of removing these adhesions. I have no faith at all in Cargile membrane or in aristol to prevent their reforming. There is, in fact, no problem more difficult to me than that of breaking up large adherent areas between liver, colon, stomach and pylorus, and then preventing their reunion.

My own solution is not to try to prevent them, but simply to let them readhere in a more advantageous relation.

In each of the cases given below, the stomach was the organ deformed, and in the same manner each time—by too extensive union to the liver. The problem, on opening the abdomen, was not so much how to release the adhesions as how to prevent their reforming in the same position. While it is true that long bands can be cut and not reunite, flat or broad adherent surfaces must grow firmly together if left in contact. The interposition of anything like foil or membrane will only increase the density of these adhesions, just as gauze packing does.

It is in our power, nevertheless, to rearrange the position of these three movable organs so as to exclude any one of them and to make the union chiefly between the other two. Thus the stomach can be released entirely from the liver false attachment at the expense of the colon, which will then take its place and become adherent to the liver adhesions.

The operation I now practice is precisely this, substitution of the colon for the stomach after the latter has been dissected from the liver, and might be called colohepatopexy or colon substitution. I employ sutures to maintain it in this new and false, though harmless, position. As this technic has been evolved from several tentative efforts, and has worked admirably in curing the stomach distress, I feel like advising it in all similar cases. Doubtless cases of bands or of Morris' "gall spiders" may also be met, and may be treated by simple division, as he suggests. I have not seen many cases except of the stomach type, and in those I do not think anything but colon transposition will give relief.

1. Incision about the middle of the right rectus or nearer the middle line if an old scar is to be avoided. Plenty of room is required.

2. Careful study of the shape, position and mobility of the stomach will disclose in a typical case numerous short bands or a broad connection uniting the liver edge and a large part of the pyloric end of the stomach, as well as the lesser curvature or anterior wall. In Case 3 (Fig. 2), the attachment of about an inch of the greater curvature caused a degree of hour-glass contraction at a point two inches from the pylorus. In the other cases, the union was between broad surfaces from the gall bladder to the middle line.

3. The most careful separation of the liver from the stomach should be made, and, if necessary, the liver tissue rather than the stomach wall cut and lacerated in the dissection. Bleeding can be checked by hot sponges in the usual way if ligatures are not applicable. The pylorus should be examined by invaginating between thumb and forefinger, to demonstrate that gastroenterostomy or pyloroplasty is not needed.

4. It will be found that the separated viscera will fall back into intimate contact, and that there is no safe way of drawing the stomach to the left and anchoring it. The transverse colon is, therefore, pulled up with any loose omentum which is present, and thrust into the space between liver and pylorus. This is not so much of a displacement as might be supposed from a written description. The bowel is not rotated and does not cross over the stomach, but only forces it toward the right. It is practically the same position which the hepatic flexure assumes after gall-tract adhesions in average cases. To hold the colon in this new relation, its omenta are stitched to the gastrohepatic ligament, liver surface, or such adhesions as form the angle between pylorus and liver. With ordinary care, tissue can be found to sew to without endangering the ducts or large vessels of the liver or of the bowel wall. The more loose omentum can be interposed the better. Of course, a colon suspension incidentally is done here, which cures at the same time any prolapse of the stomach which may be present.

In the following cases the patients have been operated on by this method:

Case 1.—Mrs. H., aged 43, was operted on for gallstones November, 1904, by Dr. McArthur. She was greatly improved as to colic and icterus, but returned for gastric distress, most severe after eating, with some atacks of vomiting and constant sense of weight in epigastrium.

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[1] Int. Surg., p. 367.

[2] Medical Record, March. 25, 1905.

Operation.—Laparotomy, Jan. 18, 1905, showed dense adhesions between the pyloric part of stomach, including about one-third of the lesser curvature and the liver edge for three or four inches. The gall bladder fundus seemed covered by and adherent to the stomach. The liberation of the stomach was somewhat tedious. After drawing it away from the liver it would immediately fall back in contact when released. The colon, which was nearly free, was drawn up and held against the denuded liver surface by three catgut stitches, one of which was deep and included some of the gastrohepatic omentum.

Result.—Complete relief of gastralgia and digestive trouble followed at once, and the patient made a rapid recovery. She has since had no recurrence of gallstone or stomach trouble.

Case 2.—H. S., male, aged 29.

History.—Three years ago he had a gallstone operation, performed by Dr. Frank T. Andrews. He has remained free from hepatic colic, but gradually has acquired a form of gastric functional disturbance, causing dragging pain, anorexia and pain after eating.

Operation.—The operation, February, 1905, was identical with that in Case 1. Less trouble was found in releasing the adhesions, which were mainly between the anterior and upper border of the stomach and the edge and under surface of the liver. The colon was made to take the place of the stomach by attaching it to the denuded liver.

Result.—Permanent relief followed this interference.

Case 3.—H. T., male, aged 33.

History.—Dr. Davis referred patient for chronic gastralgia and dragging pain. No splash or typical signs of hour-glass stomach were present. There was absence of organic acid and normal free hydrochloric acid. He never had boring pain, bleeding or hyperacidity. There was no history of cholecystitis. No operation had been performed.

Operation.—On abdominal section the main adhesions were found between the upper border of the stomach and liver border for about three inches. The greater curvature was also attached by a band at one point about three inches from the pylorus, and thus looped up, constricting the stomach at that point. The colon substitution was performed February, 1905, and the patient had entire relief as long as he was under observation.

Case 4.—Mrs. T. O., aged 57.

History.—The patient has had numerous attacks of cholecystitis, with sepsis, during two years; no jaundice or true colic. There has been some constant pain in the gall-bladder region and in the right shoulder. I removed the gall bladder, which was greatly enlarged, November, 1903, finding no stones. Periodically since then and for the past six months constantly there has been dragging pain, anorexia and occasional vomiting.

Operation.—Operation showed pylorus immovably fixed to liver, gall tracts and colon by firm union of flat surfaces, but no long bands which could be cut. After stripping and dividing these adhesions, the pylorus and stomach were pushed well to the left, and the colon lifted up and anchored between them and the liver by its omenta.

Result.—Immediate relief was obtained, which continued for the three weeks she remained in the hospital. I have not had a report since.

Case 5.—Mrs. O. D., aged 36.

History.—Two years previously she had an operation for pelvic disease, appendix removal and gallstones at one time, by Dr. Graham at the Presbyterian Hospital. One year later she began to have pain in epigastrium, generally after eating. She would vomit partly digested food. There was no blood or bile in vomitus. She had acid eructations and some pain radiating to the right shoulder blade. Drugs, lavage and diet regulation gave slight relief. There has been, since first operation, no icterus or biliary colic, and no tumor or soreness over the gall bladder.

Operation.—May 30, 1905. An incision was made through the old scar, the usual gall-bladder incision, about four inches long. The omentum was adherent all along the old scar; the adhesions were quite firm and dense all through the right hypochondriac region and around the gall bladder, and extended posteriorly along the ducts. One distinct rope-like adhesion, which was very firm, drew the anterior stomach well over to the gall bladder and upward toward the liver. This adhesion twisted the pyloric end of the stomach and the organ was dilated considerable; palpation showed no pyloric obstruction. The gall bladder had been sutured to the peritoneum in the previous operation. It was hour glass in shape and contained three stones the size of a pea. The coats of the viscus were slightly thickened and inflamed.

Technic: Adhesions were broken up or ligated and cut, the rope-like adhesion drawing the stomach to the right was freed. The gall bladder was opened and the stones removed. They were soft like putty. To prevent the stomach from again becoming adherent to the gall bladder the transverse colon was drawn up (the stomach being pushed to the left), and sutured between the gall bladder and stomach under the liver. Three catgut sutures were used. Omentum was also spread over the old adhesions and the abdomen closed in the usual manner. A Mayo drainage tube was put in the gall bladder with pursestring suture of catgut.

Result.—A marked relief from vomiting and stomach distress was obtained at once. The patient on one or two occasions had vomited after improper eating without permission, but is quite relieved of the old distress.

In all these cases, gastric lavage was first tried ineffectively. The symptomatology was fairly distinct, because of the history of gall-tract inflammation or of operation, the prominence of pain, and dragging sensation, and the absence of hyperacidity or signs of pyloric obstruction. I debated the propriety of gastroenterostomy as a remedial measure in each of them. It is possible that such a drainage would have done good, but probably less good than the method used.

CONCLUSIONS.

1. Gall-tract adhesions are inevitable after disease and operation.
2. They are beneficent, harmless and symptomless in all but a few cases.
3. These few represent malposition rather than trouble from adhesions *per se.*
4. The colon, gall bladder, duodenum and pylorus can adhere to each other without impairing their function. The other parts of the stomach cause trouble if involved.
5. Such adhesions will reform when separated, unless the colon be substituted for the stomach.
6. The causing of colon adhesion to the liver does not disturb its function perceptibly.
7. Probably certain vague gastric disturbances have been treated by gastroenterostomy when the patients would have had more benefit from this operation.

THE TREATMENT OF EMPYEMATA OF THE MAXILLARY SINUS THROUGH THE NOSE.*

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The questions of etiology and differential diagnosis are considered in this paper only so far as they have direct bearing on the proper treatment.

ETIOLOGY.

Empyemata of the antrum may be divided etiologically into two classes.

In the first class are those cases which originate in diseased processes in the tooth roots or which occur in connection with and as a result of pathologic processes around the tooth roots and are said to be as a whole cases of dental origin.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

In the second class of cases, which increasing experience is showing us to be much the larger of the two, are those empyemata of the antrum due to nasal conditions. The epidemic form of influenza known as grip, is by far the most common cause of the acute empyemata, whereas old, long-continued inflammations, ethmoidal or frontal, or any other nasal cause which interferes with the natural drainage of the antrum through its natural or aeccessory openings, are responsible for the chronic cases.

DIAGNOSIS.

This must be made with reference to the etiology, as far as it can be determined. Exploratory puncture with the trocar beneath the inferior turbinate is the simplest method of determining the presence or absence of pus. A study of the nasal conditions and a study of the tooth conditions will usually determine which factor is the one at fault. It will often be found advantageous in cases of doubt to have a consultation with a dentist.

TREATMENT.

Originally, nearly all antral empyemata were drained through a tooth socket and the entire after treatment kept up through the opening which resulted from the extraction of the tooth, with the result that many patients were compelled to wear tubes of various sorts, rubber, gold or silver, for varying lengths of time, weeks, months or even years. As this treatment failed in a large majority of instances, the next operation which came into vogue was the more radical one of opening through the canine fossa, removal of the mucous membrane of the antrum with thorough inspection of the cavity, accompanied with a counter opening into the nose and the immediate or subsequent closure of the canine fossa opening. This procedure effects cures but in many instances is probably a more extensive operation than is absolutely necessary.

In recent years, many rhinologists, finding that the washing out after exploratory puncture underneath the inferior turbinate, when continued for a certain length of time, not infrequently effected cures, especially in acute cases, have been led to study more thoroughly the possibilities of treatment of these empyemata by purely nasal methods. Among these rhinologists are Freeman of Philadelphia, who published some years ago an important article on the treatment of these empyemata and introduced a trocar and canula; the chairman of this section, Dr. Myles, who has a trocar and canula for perforating the antral wall; Mikulicz, Curtis, Claoue, and the secretary of this Section, Dr. Freer. I have been using this method for several years, having been led thereto as a result of trying Dr. Freeman's method some years ago, which, though imperfect as to its instruments, was still a step in the right direction.

There is a large class of cases of empyemata of the antrum in which the antrum is merely acting as a reservoir for pus and in which the antral mucous membrane is not of itself particularly degenerated. Such cases are especially adapted to treatment through the nose, which is the natural drainage point of the antrum. The mouth is an abnormal drainage point, and any opening from the antrum into the mouth is in constant danger of being infected from the mouth, no matter how thoroughly clean it may be at the time of operation. Whenever it is necessary to make such an opening, as in cases of simple empyemata of dental origin or after the radical operation through the canine fossa, an endeavor should be made to close it as soon as possible and permanently to separate the cavity of the antrum from the cavity of the mouth.

In the presence of antral disease the course of procedure should be somewhat as follows: If the infection is of dental origin the tooth should be extracted and the infection treated. The opening should be allowed to close as soon as possible. In the presence of symptoms not suggestive of dental trouble or when in doubt as to the origin of the antral disease, an exploratory puncture should be made high up underneath the inferior turbinate at the junction of its middle and anterior thirds or over the inferior turbinate near the natural orifice of the maxillary sinus. A curved canula, with or without trocar answers very well for puncture underneath. The only point to be especially noted is the exact point at which to enter the trocar. In ordinary shaped faces the junction of the anterior and middle thirds of the inferior turbinate answers very well. In patients in whom the malar bone is set rather far back on the face and the nose is relatively long, one should go a little further back, as otherwise there is some danger of perforating a little too far forward and even of entering the cheek. The right-angled, sharp trocar needle of Killian does very well to make an opening for diagnostic purposes. It is entered in the middle meatus just above the line of the inferior turbinate, where the bone is usually very thin. I generally use a stout, bevel-edged needle trocar, or that of Killian. The antrum is then washed out. The next step in the treatment is to continue this washing out of the antrum for a few days and see if it will not be sufficient to effect a cure. The opening can be readily found with a curved Eustachian catheter slightly smaller than the caliber of the trocar canula, or the same instrument can be introduced each time the antrum is washed out. The pain of this procedure is very little when a 20 per cent. solution of cocain combined with adrenalin is used.

If discharge of pus still continues, simple washing through the small opening will probably be insufficient. A probe passed through the opening will give some information as to the character of the antrum. If the cavity seems large and roomy and the mucous membrane does not feel particularly boggy, the presumption is that a cure may be obtained by simple washing. If at the end of a longer or shorter time, a week or more, the simple washing is followed every day by discharge of pus, not diminishing much in quantity, it becomes evident that better drainage must be obtained. The next point is to enlarge the opening into the antrum sufficiently so that it will remain open during the required time of treatment. The naso-antral wall is thinnest just above and just below the insertion of the inferior turbinate, while thickest on the absolute floor of the nose. It is desirable to get the point of drainage at the lowest possible point since in the main the patient maintains the head in the erect posture and the drainage is therefore the better.

The question then arises whether to make it above or below the inferior turbinate or to remove the anterior portion of the inferior turbinate itself. Opinions differ as to which method is the most desirable. Many operators remove a portion of the inferior turbinate. It seems to me, however, that this bone has a valuable function in the nasal economy and that in nearly all instances a sufficiently large opening for drainage can be obtained underneath or above it without in any way interfering with it unless it be enormously large and swollen. My method of procedure is to introduce through this opening first a curette of about the same size as the opening and then a series of curettes, each a little larger than the one immediately preceding it, until I have a good-sized window into the antrum. As the bone is relatively thin, this can be done without much pain under the influence of 20 per cent. cocain and adrenalin solution, or powdered cocain introduced on the tip of a moist cotton swab. As soon as this window is made, I cut away backward with some form of alligator cutting forceps (I like those of Dr. Myles as well as any, or the bone forceps of Dr. Kerrison), until I have a good-sized opening into the antrum, so large that the largest size Eustachian catheter or other tube can be passed without difficulty. The opening can then be further enlarged so that the cavity can be packed with gauze, and if one has curettes of various sizes with long shanks a good portion of the mucous membrane of the antrum may be curetted.

If unable to work satisfactorily underneath the inferior turbinate, the opening can be made above that bone, and in some instances I think it would be a good plan to have an opening in each place, so as to permit of the best possible drainage. The cavity is then washed out by the physician daily, or as often as may be necessary; intelligent patients can soon be taught to introduce the curved canulæ so as to wash out their own antra.

Should the antrum show evidence of polypoid degeneration, or if the condition does not improve after a reasonable length of time under this method, any nasal operation alone will be insufficient and nothing less than the radical operation through the canine fossa and the removal of the entire mucous membrane of the antrum will bring about a cure. By far the greater number of patients who come under the care of the rhinologist can be treated through the nose.

Should there be at the same time, as I believe is occasionally the case, a tooth the point of which is in the way, I would have the tooth extracted just as if the trouble were absolutely of dental origin; but the after-treatment should be continued through the nose alone, the opening in the alveolar process being allowed to close, as drainage through the nose is so much less disagreeable than through the mouth and the after course of treatment is much shorter.

In regard to the choice of instruments, almost anything that will make an opening through the naso-antral wall will answer. Individual operators have their own choice. Whatever the physician may happen to have in his own armamentarium that will answer the purpose is a sufficiently good instrument. If one is familiar with the drill, either the small drill or the trephin drill described by Dr. Freer, or the instruments of Dr. Wells, of Washington, of which the trocar itself is a reamer, may be used. What is necessary is to make with the least pain to the individual a large opening from the antrum to the nose, as near forward as possible, above or below the inferior turbinate. If it seems desirable, the anterior end of the middle turbinate may be removed, thus making a very large opening, as described by Dr. Freer in his recent article, an opening large enough to drain thoroughly the cavity and to allow the introduction of any therapeutic measure which may be indicated in the individual case.

The choice of remedial agents for washing, etc., I do not take up. The point I am considering is a method of treatment rather than a detail.

The following cases of my own will illustrate the points which I have made:

CASE 1.—Mr. Y., aged 37, complained of catarrh, with some pus discharges for a long time. I made an exploratory puncture under the inferior turbinate and washed out through the canula several times. As the discharge of pus continued, I cut away a portion of the naso-antral wall with cutting forceps, underneath the inferior turbinate. I taught the patient to wash out his own antrum. In a short time he was well.

CASE 2.—Miss H. came to me, complaining of pus in the nose which had lasted for some time. She had a decayed second bicuspid, which was extracted; there was an old inflammation at the root, but it did not penetrate the antrum. The antrum was drilled into from the tooth socket, but this opening closed in two days. At the same time, the exploratory opening from the nose into the antrum was enlarged with curettes and cutting forceps. The antrum was washed out daily, first by me and then by the patient herself. Rapid improvement and cure followed in a few weeks. This opening has remained ever since. I saw the patient thirteen months after the operation, washed out the antrum and found it to be free from trouble.

CASE 3.—Mr. V. came to me, complaining of severe head cold. Simple methods of treatment, with washing out of the nose, were continued for some time without much result. I then punctured first one antrum and then the other, finding pus in each. I washed out the antra through the canula trocar opening without much of any result for about ten days. Then with curettes and cutting forceps I enlarged the opening into each antrum, with prompt improvement in drainage, subsidence of all symptoms and rapid cure. Time required, from two to three weeks.

CASE 4.—Mrs. B. had an attack of the grip, following which she was very weak—confined to bed. There were symptoms of pus absorption. I was called by the attending physician to see if there might not be some trouble with the nose. I made an exploratory puncture and found pus in the antrum on one side. The antrum was washed daily through the small opening for a few days, but with no result. I enlarged the opening with curettes, and daily washing for about three weeks resulted in a perfect cure and subsidence of all the symptoms indicative of pus absorption.

I do not mean to intimate that all cases of empyemata of the antrum can be cured by this method. An attempt to cure in this manner in no way prejudices any further operation, but rather prepares for that and shortens the period of after-treatment. I have had cases,[1] in which the more radical operation has been required, and I expect to have such cases in the future.

CONCLUSIONS.

First determine whether the case is of dental or of nasal origin. If of dental origin, treat it accordingly but do not continue, by tube or otherwise, a long-continued course of treatment through the mouth. If of nasal origin, treat in the manner described. If in doubt, treat through the nose, letting the tooth alone unless it seems to be troublesome. Even this method of treatment do not continue indefinitely if the pus continues to be a source of trouble, but do the radical operation through the canine fossa, a description of which does not come within the province of this paper. Lastly, see whether there is a co-existent empyema of the frontal sinus which may be draining into the antrum and keeping up the discharge of pus.

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[1] "The Relative Frequency of the Dental and Nasal Origin of Antral Empyemata." Ann. of Otol., Rhin. and Laryn., March, 1905. "The Significance of Pus in the Nose with Special Reference to the Affections of the Accessory Sinuses and Their Proper Treatment." Med. News, Dec. 24, 1904.

Professor Gerber of Königsberg[2] recently published a short but lucid article on the principles of treatment in empyemata of the antrum, which are so in accord with my own experiences in this regard that I wish to translate his conclusions somewhat freely and to incorporate them in this paper. He states that he has tried all the various methods which have been advocated and has finally come to the following conclusions, which will govern him until such time as something better may be brought forward. In dealing with diseased antra of Highmore, the following principles should govern the choice of a method of treatment:

First.—Whenever possible, direct the treatment to the point where the antrum has its natural communication with the nose, and especially avoid any long-continued direct communication with the mouth or pharynx.

Second.—In cases which are not severe, the antrum is washed out in the beginning through a sharp canula introduced in the middle meatus.

Third.—If the empyema has lasted a considerable time and the secretion is thick, with considerable odor, this opening in the middle meatus is next enlarged, the so-called supraturbinal resection of Onodi being performed, to include also the inferior meatus, if it be necessary.

Fourth.—In chronic and severe cases it may be necessary to make a large opening from the canine fossa, the so-called radical operation, but this opening, after thorough inspection and cleaning out of the cavity and the making of a broad counter opening in the middle meatus, is carefully closed and the after-treatment entirely performed through the middle meatus.

Fifth.—The only patients who can not properly be treated in this way are those in whom there is a high degree of nasal stenosis, rendering this treatment impossible, and those who will neither continue in daily communication with the physician nor learn to apply themselves the after-treatment through the nasal fossa.

DISCUSSION.

Dr. Otto T. Freer, Chicago, said that the intranasal operation for empyema of the antrum needs a champion, as most men are in favor of operating by the alveolar route. Dr. Freer thinks that the intranasal operation advocated by Dr. Richards and himself is the most rational one and that it will soon displace all others for the relief of chronic empyema of the maxillary antrum. He said that the trend of late years has been to employ the Caldwell-Luc method of operation through the facial wall of the superior maxillary bone but that this is a far more formidable operation than the intranasal one, as it includes a long incision severing the lip from the alveolar process, an opening in the thick bone of the upper jaw in front, the need of a general anesthetic, and the making of an unnatural opening between the antrum and the oral cavity; besides the usual shock and pain caused by a severe operation. In the majority of cases, he said, the result is no better than that obtained by opening the antrum by the intranasal route, while the latter operation inflicts much less injury on the patient. He agreed with Dr. Richards that the opening through the nasal wall may be made of varying sizes, from a mere puncture with the trocar to the removal of nearly the entire inner wall of the antrum. Dr. Freer's technic includes the use of an electric motor and should this for any reason fail to work, the operator could fall back on Dr. Richard's method, for a combination of the best features of both ways of operating will probably give better results than either alone. Dr. Freer has never seen bad effects from the removal of the inferior turbinated body, though he has often heard them suggested. He has frequently removed the lower one-third of the lower turbinated body and has not encountered the permanent crusting and scabbing supposed often to follow this reduction in size of the turbinal, nor has he encountered rhinitis and pharyngitis as a result, and he does not think that the lower turbinated body is as physiologically important as it is supposed to be. For this reason he does not hesitate to resect its anterior two-thirds in performing a radical opening of the antrum through the nasal wall. Resection of the inferior turbinate is also a part of the Caldwell-Luc method and its followers do not speak of bad results following. The Wells rasp seems to Dr. Freer to be a good instrument, for in ordinary mechanical work he has found that a rasp cuts nearly as well as a saw. When the empyema of the antrum is not yet chronic, and when there is but a moderate purulent or seropurulent discharge, the middle meatus offers sufficient access to the antrum and an opening here may be made with the greatest ease. Onodi enters the antrum in this place with a forceps-trocar, whose blades he spreads to make a preliminary opening. This opening he then enlarges to nearly the size of the meatus.

Dr. W. S. Bryant, New York, stated that he puts most reliance on opening through the middle meatus alone, removing if necessary part of the middle turbinate. He uses a probe to locate the natural opening and follows that with a curette, after which he uses one of the angle punches and takes out as much bone as is necessary. The quantity of bone to be removed is in proportion to the bad condition of the mucous membrane, according to whether the drainage must be absolute or need be only relative. After a sufficient opening is made, washing is unnecessary.

Dr. Gardner Perry Pond, San Francisco, said that he has been very much interested in this subject because of Dr. James G. Sharp's work on the accessory sinuses. Dr. Pond has been an advocate of the nasal route and Dr. Sharp of the canine fossa route. As an argument in favor of his method Dr. Sharp quotes the relative frequency with which a double cell is found—the antrum divided by a thin bony wall. In such cases the cell nearest the nose may be opened with the cannula and the operator may not suspect the existence of the other cell, consequently there will be no relief of the symptoms. If, on the other hand, the antrum be opened through the canine fossa, and the opening be made large enough to admit a finger, it can easily be determined whether or not there are two cells. Dr. Pond stated that there is no doubt in his mind that the best drainage is obtained through the floor of the antrum and said that he can see no reason for choosing the middle meatus as a route for entering that cavity.

Dr. L. C. Cline, Indianapolis, stated that he has had considerable experience in the treatment of these cases, particularly some time ago when there was a great deal of grip in the country. Each case is a law unto itself, and that must be remembered in operating. In the old neglected cases a radical operation is necessary; in the subacute or chronic cases of short duration, recovery will often take place if the opening is made through the alveolar process. Dr. Cline does not believe in cutting away the turbinated body unless it is necessary. Drainage is necessary and to get good drainage the anatomical relations in these cases must be borne in mind. Different skulls show marked variations in the size of the cavities. Dr. Cline has often practiced making an exploratory puncture in order to measure the distances. If the tooth is out—and often it is better that it should be out, because so often it is diseased—then it is easy to make a puncture with a sharp drill. Then he cuts with the burr in various directions. This enables him to examine the cavity for polypoid conditions and to determine whether or not a radical operation is necessary. It is a simple procedure. The field can be cocainized and the work done without general anesthesia. Dr. Cline does not believe in making an opening between the superior and the middle turbinated bodies, because then drainage can be obtained only with difficulty. With good drainage and cleansing, these patients, as a rule, will recover.

Dr. C. F. Welty, San Francisco, declared that these patients can be cured by one of these various procedures, so that the question arises as to which one of the routes shall be selected as the best. This can best be done by studying the individuals. The question naturally arises, which does the least harm to the patient. Dr. Welty is firmly convinced that least harm is done by the alveolar route. He has never seen any harm follow the removal of the anterior half of the inferior turbinate, however, but his experience, he said, is limited. All the patients he has operated on by that method have recovered completely. When operated on by the alveolar route they have not recovered so readily. Radical procedure cannot be determined on absolutely until some of the more conservative measures have been used and have failed. Sometimes puncture will cure the patients. Dr. Welty has seen a number cured by a single washing out through the inferior meatus. Hajek is a great believer in the alveolar route. About two years ago he began to use the inferior meatus route. Dr. Welty does not know with what ultimate results. The route by the middle meatus should be condemned from its anatomic relation.

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[2] Archiv. für Laryngologie and Rhinologie, vol. xvii, part I.

Dr. W. S. Anderson, Detroit, Mich., said that if possible, he should always try to save the inferior turbinated body.

Dr. S. L. Ledbetter, Birmingham, Ala., said that the question arises as to whether a given case is chronic or acute. In all the acute cases, he has found that the patients get well readily after a small puncture and one or two washings. The dentists in his section of the country get the majority of the acute cases; the patients go to them because they have some trouble with the teeth. In the chronic cases, when the lining membrane is diseased and in which there is often a polypoid condition present, recovery may not be secured by simple washings. These patients require the application of some remedy that will destroy the diseased condition of the sinus. This cannot be done without an opening sufficiently large to enable the physician to enter the cavity, which is not always regular and smooth, and to reach all the different portions of that cavity with a probe or applicator. Dr. Ledbetter does not believe that all the points can be reached as readily through the nose as through the canine fossa.

Dr. A. G. Greenstreet, Seattle, Wash., declared that the opening above the inferior turbinated is often referred to, but that very few advocate that route. He saw a case recently in which nature had performed a successful operation by that route. An old man had been suffering for several nights. When he consulted Dr. Greenstreet one side of his nose was full of pus, and in wiping the pus away Dr. Greenstreet got into the antrum above the inferior turbinate. The opening was a large one, so that he could swab the pus out of the antrum. Under antiseptic irrigations the patient was cured up in a short time. It seems to him that in many cases that might be a good route to adopt, for it obviates the necessity of resecting the anterior third of the inferior turbinate body.

Dr. DeVilbiss, Toledo, stated that in long standing cases a radical operation is needed. The cases in which the accessory sinuses are involved are those that have tried his soul the most. In acute cases an exploratory puncture for diagnostic purposes, with simple drainage may be all that is necessary, but in those cases that have lasted for a long time, in which there probably is disorganization of the tissue, whether the operation be through the canine fossa or through the inferior meatus, an opening should be made large enough to permit the introduction of the little finger. If the antrum is found to be in fairly good condition in a case of long standing, the physician should look to the sphenoidal sinus, the ethmoid cells and the frontal sinus. He mentioned a case in which Dr. Myles operated through the nose and the patient did well, but Dr. DeVilbiss usually operated through the canine fossa. He elevates the lip and with a hand trephine bores through the canine fossa and then uses a rasp or drill to enlarge the opening.

Dr. J. H. Martindale, Los Angeles, said that the views held in the different parts of the country seem to give these cases different interpretations. In Los Angeles he does not have an opportunity to treat acute cases, for in southern California there are few such. The cases he has are chronic cases, and in these cases he prefers to enter through the alveolar region if a tooth is absent or through the canine fossa if a tooth is not absent. He does not object to a permanent opening. The opening should often be large enough to permit the introduction of the little finger. It is of no importance, practically, whether the antrum be converted into a part of the oral cavity, provided it can be thoroughly washed out. The method advocated by Dr. Richards, he said, is probably of very great value in a climate where acute cases occur frequently, or where an exploratory operation may be required.

Dr. Robert C. Myles, New York, said that this subject is intensely interesting to him from a purely scientific standpoint, since he has operated in the last fifteen years by every method that has been suggested. He believes that the antrum of Highmore should not be treated after the ordinary rules of surgery. There are thin walls covered by thickened mucosa, and the general surgeon, following the ordinary rules of surgery, would advise curetting thoroughly. Dr. Myles claims that by curetting a worse condition than before is brought about. The normal mucosa is destroyed and part of the periosteum, and there is a large opening into the mouth. A new membrane can not form very soon. If curettement has been as thorough as many writers direct there is practically nothing left. The opening will contract before there is complete obliteration, and all who have tried obliteration of the cavity have abandoned it. A large opening into the nose is frequently made in these cases and the opening in the mouth allowed to close up. So there really is no radical operation. Any operation that leaves a pus cavity in an accessory sinus is not a radical operation. Dr. Myles would endorse the mildest operation that gives the best results, and that operation is a part of the so-called radical operation. The removal of the nasal wall of the inferior meatus is the most essential part of any operation on the antrum of Highmore. He has practically abandoned operating in acute cases because these patients rarely need operation; all they need is an opening to relieve the pressure from the fluid and the gas. Cases frequently become chronic because the pressure is not relieved and sloughing occurs. Dr. Myles presented two small chisels that he has found most satisfactory and simple for opening the antrum.

Dr. George L. Richards said that it seems to him that the dental engine is an instrument that is destined to go out of use rather than to increase in popularity. It is difficult to work in the nose with the large wobbly, flexible shaft. He has used the straight instruments that Dr. Freer describes and the antrum with them can be opened. If an instrument will do the work, the simpler it is the better. Dr. Richards does not recommend the dental engine. Often the operation must be done away from electricity and where it would be difficult to carry a foot-power instrument. He recalled a case in which the patient was nervous and dreaded the coming of a second man who might have surgical propensities. In that case Dr. Richards was able to get into the sinus without the patient hardly knowing that anything but a nasal examination had been done. The instrument that he almost invariably uses for exploratory purposes is a medium sized beveled steel cannula which may be pushed in with the finger or in some cases may require a tap with the mallet. If the gas pressure be gotten rid of the patients often get well of themselves. However that may be, even in the very acute cases a puncture under the inferior turbinate and washing out with some simple antiseptic solution will lessen the severity of the attack. The curved instruments of course go in more easily than the straight ones. Dr. Richards had some difficulty in maintaining the opening, but with the instruments which Dr. Myles has shown he does not anticipate any trouble in the future. With the beveled instruments one does not get out sufficient tissue. Even in the acute cases it may bother the operator to introduce the cannula. In such cases, Dr. Richards simply reintroduces his bevel edge cannula. Opening in the middle meatus, he said, is easier than the puncture under the inferior turbinate. In most instances he has preferred making the opening in the inferior meatus. If the point of opening be selected with reference to the conformity of the face, the operator will find it somewhere between the first and second thirds of the inferior turbinate, carrying the instrument as high up as possible, he will go through a very thin wall. Sometimes it is necessary to go as far back as the second third. It must be remembered that at times there may be great variations. An idea of the anatomic construction of the antrum can be obtained by noticing how the teeth grow and by taking note of the palatal arch. Now and then there is an almost complete septa between the antra so that one cavity might be entered and not the other. Dentists must be instructed concerning the nasal side of these cases, and they can instruct physicians as to the dental side. It does not seem to Dr. Richards that the dental route is the better. The patients who may be treated through the alveolar process may be treated better through the nose. An opening through the mouth is abnormal and the alveolar opening always tends to close. The patients treated through the mouth continue coming to the clinic for a long time. He does not think many American patients would care for such an operation. In his district most patients would prefer to have a little purulent discharge through the nose, rather than to have a so-called radical operation. In reply to a question, Dr. Richards stated that the radical internal method is not indicated in cases in which there is mucoid or polypoid degeneration, though it may give a certain amount of preliminary information. As a diagnostic measure the opening can be made through the nose. In acute cases, recovery usually follows the relief of pressure. In cases complicated with empyemata of the ethmoidal cells or of the frontal or of some of the other sinuses, he would make the opening under the inferior turbinate. If the patient seemed to have insufficient drainage, he would enlarge the opening. If the inferior turbinate lies in such a way that it folds right over the antral wall so that sufficient room cannot be obtained, part of it may be taken off. Again, the front end of the inferior turbinate can be taken off. The cases must be individualized. In a case with comparatively smooth walls and comparatively uncomplicated, drainage and washing will usually suffice. It does not matter so much how long these cases have lasted; more depends on the character of the pus and the condition of the mucous membrane. In cases with polypoid masses, it is better to operate through the canine fossa, unless the instruments presented by Dr. Myles will enable the operator to get sufficient drainage in these cases.

Dr. Otto T. Freer, Chicago, said that he thinks that Dr. Richards has been a little unjust to the dental engine. The handpiece may be disinfected and he should not like to give up the use of so valuable an instrument merely because it can not be cleaned like the implements used for a laparotomy. Dr. Freer certainly has never seen sepsis follow his frequent use of the nasal burrs and trephines. The long burr cuts away the strong ridge left at the bottom between the nasal floor and floor of the antrum, after resection of the upper part of the nasal wall of the maxillary sinus, in a way no other implement can, so that the nasal floor shelves down into the antrum and drainage becomes as nearly perfect as possible. The trephine also perforates the nasal wall with great speed in several places and causes practically no pain. After the trephine the burr may be used to enlarge the opening.

METHEMOGLOBIN AS A FACTOR OF CONSERVATIVE METABOLISM.*

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DEFINITIONS.

Hemoglobin (Hb) is a crystallizable body which constitutes the largest portion of the colored corpuscle. It is a respiratory pigment, has the power to attract oxygen and also other gases. (Kirk.)

Hemoglobinemia is a condition in which the hemoglobin is dissolved out of the red corpuscle and is held in solution in the serum. (Gould.)

Oxyhemoglobin (O_2Hb) results when hemoglobin is united molecule for molecule with oxygen. It is the characteristic constituent of the red corpuscle to which the scarlet color of arterial blood is due. (Gould.)

Reduced hemoglobin is the result of deoxidation of oxyhemoglobin. (Gould.)

Methemoglobin (Met Hb) is a modified form of hemoglobin. It is the product either of incomplete decomposition of hemoglobin or of its excessive oxidation. The oxygen is more firmly combined in it than in oxyhemoglobin. (Gould.)

Methemoglobinemia is the presence of free methemoglobin in the blood. (Gould.)[1]

To the physician of to-day, methemoglobin, because it is known to be a more stable oxygen compound than oxyhemoglobin and is capable of reduction by the tissues only in slight degree, is universally regarded as a blood change deleterious to the organism, or, otherwise to express the equivalent, methemoglobinemia is always an intoxication, be it great or little in degree. It is amply proved that if methemoglobin be present in the blood in sufficient amount death results. Nevertheless, I differ from accepted opinion in so far as to say that methemoglobinemia must not be regarded as invariably deleterious to conservative metabolism, and that, in fact, therapy empirically makes use of this blood change to aid in conservation of nutrition. The following is offered in support of this opinion:

The toxicologist, Selmi, used the word ptomain to describe certain alkaloidal bodies formed during the process of animal tissue putrefaction. Herein the name derived from the Greek word signifying cadaver was appropriate enough. Gautier applied the name leucomain, from the Greek term signifying white of egg, to basic substances preformed in the body tissues or which are products of living tissue metabolism. This distinction, it was found, could not stand. Because putrefaction and normal digestion are practically identical processes, we are not surprised that some of the basic substances originally obtained from putrefying animal matter can be isolated from living protoplasm, both animal and vegetable. More than this, enzymes or unorganized ferments and dilute mineral acids are capable, as well as bacteria, of producing ptomains when acting on the nuclein molecule. These facts enable us to draw conclusions from findings in reference to such basic substances without regard to the usual dual classification. Concerning this argument, however, so much may be said as to their differentiation. The interdependent relation, as based on chemic formulæ, of some of these basic substances (leucomains) to others of the same class and their final elimination products, has been identified with successive oxidation and cleavage processes, as, for instance, those of the best known purin group, form a continuous oxidation series with uric acid as the final product from which urea may be attained by cleavage. Much less is known of antecedent and also of oxidized elimination forms of representative ptomains, such as cholin, muscarin, putrescin, etc., although, as a general proposition, the sufficient oxidation of these basic substances is known to render them innocuous. For the same reason, the relation in general between oxidation of metabolic products and pathologic reduction of red cells hereinafter considered, is clearer as regards the leucomains than the ptomains, although a like need for the oxidation of the latter remains no less obvious.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] This definition given because as complete as any attainable, nevertheless does not convey the entire meaning of the term methemoglobinemia as used in this article. In experimentation on animals it has been found that an induced blood change from oxyhemoglobin to methemoglobin, in most cases, if not always, takes place within an intact red cell, disintegration occurring later, and hence we obviously may have a methemoglobinemia before the methemoglobin becomes free and reaches the plasma.

As clinicians, we are interested in the connection which retention of these basic substances may have to disease—a factor often recognized, at least, in general terms. C. E. Simon[1] says "both classes of substances (i. e., ptomains and leucomains) are of especial interest to the physician, as their formation or undue accumulation in the body may give rise to serious disturbances." Vaughan and Novy[2] state "the leucomains have been credited by many as playing the chief rôle in autointoxication," and, again, "Wiener's observations on uric acid show that the purin body is not only a nuclein cleavage product, but that it may also be a synthetic one. Furthermore, he has shown that uric acid is not only being made, but is also being constantly destroyed within the body.[3] The process of formation and decomposition results in the normal minimum excretion of uric acid. If, however, the latter change be diminished or inhibited, the amount of uric acid becomes apparently increased and may lead to disease conditions, such as rheumatism. The same view may be extended to the purin bases and the relatively large elimination of these bodies in leukemia may be due not only to increased formation, but also to decreased destruction."

As regards specific blood observations, Prevost and Dumas have noted an accumulation of urea in the blood where it failed of elimination by the kidneys,[4] and, according to Gschleiden, an accumulation likewise occurs in fever. Salomon found uric acid in the blood in demonstrable amounts in cases of pneumonia and fever. von Jaksch obtained blood by cupping from 102 persons, of which only a few were in health, and tested it for uric acid. He detected no uric acid in the blood of the healthy, but found it in varying amounts in the blood of patients who, as a result of heart lesions, of pneumonia, nephritis or anemia, were suffering from dyspnea. The same investigator detected xanthin bases and uric acid in exudates and transudates and also the former in the blood in various pathologic conditions. According to von Limbeck,[5] xanthin bases (i. e., purin bases) have been found in the blood in various diseases by Sherer, Mosler, Salkowski and Salomon. von Jaksch interpreted the accumulation of uric acid in the blood in dyspneic conditions to mean that in these occurred greatly lessened oxidation processes. von Limbeck points out that the error of this conclusion is demonstrated by Kraus, who, by comparative analyses of respired gases in cases of severe anemia as against those of healthy persons, found the coefficient, $\frac{CO^2}{O}$, to be the same in both conditions. In accordance, also, are the observations by Chvostek, Bohland and Biernacki that in simple anemia the patient, instead of using less oxygen, employs rather more than in health. A reasonable conception concerning all blood conditions which have been cited would be the following one, viz., that as a pathologic effect in a great many morbid conditions increased disintegration of tissue cells results in the increased formation of leucomains, the chief known source of which are the nucleins of the nuclei and the proteids of cell protoplasm. Also, it being established that progressive oxidation and subsequent cleavage advances the leucomains to a product suitable for body elimination or one required for further metabolism, *dyspneic conditions (without regard to clinical entity but merely as one sign of intoxication), are always manifestation of an inadequate effort on the part of the organism sufficiently to oxidize these cell disintegration products.* Or, to express the idea from a different view-point, *there is in the blood in conditions which result in increased tissue metabolism an accumulation of basic products which are prepared for further use or for body elimination by oxidation and cleavage processes, and, therefore, the same products up to the point of their sufficient preparation act as powerful reducing agents or deoxidizers.*

To one who approaches the subject without prejudice, the literature of methemoglobinemia develops some unconvincing conclusions as well as patent contradictions. He must be impressed by the fact that substances so far removed from others classed with them in physiologic effect or manner of therapeutic use as are hydrocyanic acid, amyl nitrite, iodin, turpentine, pyridin, chloroform, ether, chlorate and permanganate of potash, phenacetin and other antipyretic coal-tar products, certain toadstool and snake poisons, etc., require differentiation in the consideration of a systemic effect, even though all of these possess a common property to produce in sufficient dose a certain toxemia. He notes the statement by one investigator that before certain substances can change oxyhemoglobin to methemoglobin the hemoglobin must be freed from the corpuscle by the latter's disintegration. Another observer is equally certain that even in these cases the change to methemoglobin is primary and that the solution of the red cell occurs subsequently. If, as in this case, the same substances, as, for instance, arsenuretted hydrogen, snake venoms, toadstool toxins, be set down by a third authority as producers of hemoglobinemia only, the suspicion is born that at the door of the met compound, perhaps, are laid some of the ill effects of poisons whose paramount action is rapid solution of the red cells. It is true that disintegration of the red cell does follow methemoglobin formation,[6] and it is not surprising, for the reason that this superoxidation[7] of the corpuscle is needless in health and hence always presents an extraordinary form of hemoglobin. Yet, a legitimate question may be raised whether or not some other agent, beside that which produces the met oxidation, may not sometimes complicate the latter effect—for instance, the albumin destroying property and, therefore, destructive effect, on the red cell of potassium in the oft quoted met toxemia of potassium chlorate—a result which was manifest in experiments on herbivorous animals (rabbits); or, again, the possibility that in severe methemoglobinemia, the tissues being deprived of enough easily reduced oxyhemoglobin and unable to utilize the methemoglobin, do now attack the reduced hemoglobin, which, as we know, still contains considerable oxygen, deoxidizing it and, in turn, its derivatives up to corpuscular dissolution.[8]

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[1] Simon, Chas. E.: Text-Book Physiological Chemistry, 1904.

[2] Vaughan and Novy: Cellular Toxins, 1902.

[3] In this case, although successive oxidation is not followed by elimination, it nevertheless has played an equally important rôle in the antecedent metabolism.

[4] Baginsky holds that the amount of the purin base, xanthin normally present in the urine may be increased tenfold in acute nephritis.

[5] Limbeck, Rud. R. von., Grundriss einer Klinischen Path. des Blutes, 1896.

[6] The following are summaries of two detailed studies of fatal methemoglobinemia: Brandenburg's case, a woman 28 years old, who drank at night a solution of 525 grains of potassium chlorate in water was received at the clinic the following morning. The blood examination showed severe leucocytosis, poikilocytes, but these not numerous; also irregularly shaped large and small red cells. The blood was chocolate brown, and showed by spectroscopic examination, the bands of methemoglobin. The separated serum had a brownish tinge, contained methemoglobin, as did also the urine. Counts of red cells from the first to the seventh day demonstrated a daily decrease in red corpuscles as follows: 4.3 mill., 2.5 mill., 2.3 mill, 2.1 mill., 1.9 mill., 1.6 mill. After the fifth day no methemoglobin could be found in the serum. Necropsy following on the seventh day, exhibited parenchymatous inflammation of the myocardium, the liver, stomach mucous membrane and kidneys, the last also showing intense hemoglobin infarcts. (Grawitz.)

K. Ehrlich and Lindenthal's Case.—Ten hours after initial symptoms of poisoning by nitrobenzol, the blood was chocolate colored, the serum brownish, the spectral analysis showed presence of methemoglobin, which disappeared on the eighth day. Red cells were rapidly reduced, 2,275,000 on the fifth day, and falling to 900,000 before death on the nineteenth day. Poikilocytosis appeared on the third day and soon reached a remarkable degree. Polychromatic and fragmented cells were abundant. Nucleated red cells were first seen on the third day, and thereafter in very large numbers of all sizes. On the ninth day, the leucocytosis previously low, rose suddenly to 61,000, and the nucleated cells reported at 24,700. The Hb fell steadily to 40 per cent., which, with 900,000 cells was a remarkably high Hb index. There were many myelocytes among the white cells, so that at one time the blood presented the appearance of leukemia. (Ewing.)

Mohr observed six cases of benzol poisoning among workers in benzol factories. In all there was methemoglobinemia, schistocytosis and hemoglobinic degeneration, while nucleated red cells, microcytes and macrocytes were numerous. (Ewing.)

Experimental research as to methemoglobin poisoning has been largely confined to the effects of potassium chlorate, because of the overwhelming blood change which follows the ingestion of large doses of this drug and the former comparative frequency of methemoglobinemia from this cause on account of common administration of toxic doses. A brief review of such research as given in von Limbeck's work on clinical pathology of the blood is as follows:

Marchand, who first experimentally studied the toxic effect on dogs of chlorin salts, stated that the absorption of the latter resulted in a methemoglobinemia which was the cause of death in acute toxemia. Against this conclusion, Stokvis took the position, from experiments chiefly on rabbits, that death in chlorate poisoning was solely due to salt effect and that the formation of MetHb was a postmortem change. This view was apparently refuted by Lenhartz and Riess, who demonstrated methemoglobin in intravascular blood of the animal experimented on. Following these experiments, von Limbeck was able to show by volumetric computation of 0 in the blood of dogs poisoned by $NaClO_3$ that in the latter, and possibly also in man, death in acute chlorate poisoning is due to asphyxia, resulting from lack of reducible hemoglobin. How great, says this observer, is the toxic effect of the chlorate salt as such on the organism, remains an open question which, while it can not be eliminated, may be answered in so far that for dogs and in acute poisoning, this effect is probably subsidiary to asphyxia as a cause of death. For herbivera this conclusion does not hold good. Stokvis, Marchand and Bokai showed that, with rabbits, death followed acute chlorate poisoning in almost all cases without the characteristic blood change and that at least a period of one and a half hours after death needed to elapse before methemoglobin could be demonstrated in the blood. Here the cause of death could be ascribed to the effects of chlorate salts as such. There was no disintegration of corpuscles nor did this seem to occur in acute poisoning of dogs. According to von Limbeck, in subacute methemoglobin poisoning, one must reckon with a greater number of complicating conditions which include production of methemoglobin, effect of salt as such on the tissues, decomposition of blood corpuscles, circulatory disturbances due to thrombi and, as the factor of chief importance, kidney irritation.

As subacute toxemia is the only form that would have to do with this argument, we are especially interested in its several dangers—certainly each as a toxic effect is sufficiently evil. And yet, aside from mere production of methemoglobin, which needs a 66.6 per cent. blood change to be fatal, if the physician as he prescribes, could not depend on his judgment to guard his patient from grave tissue change arising from injudicious treatment as regards dosage and period of drug administration, said treatment causing, for instance, great cellular disintegration of the kidney, the liver or other excreting organs, he would need to take from his drug armamentarium many important constituents of it, such as chloral, phosphorus and its compounds, bromin salts, the coal-tar antipyretics, salicylic acid and its derivatives, etc. Hence, if it then be a matter for the physician, not that he must ever avoid a methemoglobinemia as such, but that in therapeutic use of substances capable of producing this blood change, he must avoid a toxemia in his patient, we find herein quite the same problem to solve in relation to these drugs as confronts us in the use of most others we employ in treatment. And, in the same case, the practitioner must be accorded the right to produce a methemoglobinemia of non-toxic proportions if he can benefit the patient thereby.[9] I believe the patient may be, and indeed is, often benefitted by an induced methemoglobinemia effected by drugs now empirically employed, *by oxidizing through this means the suboxidized leucomains which we have found in time of disease, accumulate in abnormal amounts in the blood. These powerful reducing agents are able to take 0 from methemoglobin, although the tissues can not.*[10] In the asphyxia of extensive and, therefore, toxic methemoglobinemia, pulmonary respiration is, to a great extent, eliminated, because the hemoglobin, unreduced by the tissues, is brought to the lungs already oxygen laden. Herein methemoglobin acts as no special poison, for oxyhemoglobin returned to the lungs would give them as little to do. On the other hand, the partial asphyxia of disease, as evidenced by dyspnea and cyanosis, has as one, if not exclusive cause, *the increased amount of oxygen required by the system to oxidize the tissues plus the leucomains or other like basic reducing substances, with which need the lungs can not keep pace.*

With an induced methemoglobinemia in just that degree that may be required to sufficiently oxidize the basic substances, thereby preparing them for elimination or for further use in the animal economy, we obtain two paramount results: (1) The O_2Hb is conserved for use of the tissues. In reference to this statement, it is true that methemoglobin contains the same number of oxygen atoms as oxyhemoglobin, which point might be advanced as an argument that the leucomains could as well be oxidized by the normal oxy-compound as the met-compound. It must be remembered, however, that the oxygen of the latter is in a different form wherein the oxygen atoms are more closely bound within the molecule than in oxyhemoglobin, and therefore the met molecule requires in all probability a greater amount of suboxidized basic material for its reduction than would be needed for the loosely bound normal oxy-compound.[11]

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[7] "In apparent contradiction to the fact that bacteria are capable of converting MetHb. to Hb. is that demonstrated by J. F. Lipowski that by means of pure cultures of other bacteria O_2Hb can be changed to MetHb. In the first case we have to do with reducing, in the second with oxidizing and oxygen-forming microbes." (Rudolf Kobert.)

[8] If Co_2 be passed through a solution of oxyhemoglobin for a considerable time, reduced Hb is first formed, but if the process be prolonged, the Hb is decomposed, a precipitate of globulin is thrown down and an absorption band similar to that obtained when Hb is decomposed with acids (acid hematin) is observed. (Landois and Sterling.)

[9] But for a generation of prejudice, originating in the therapeutic abuse of potassium chlorate and which pronounces all methemoglobinemia essentially toxic, a conclusion so self-evident would scarcely need discussion, if we but remember our daily use of three of the MetHb producing halogens in the form of iodin, chlorin and bromin compounds or salts, also the coal-tar analgesics and antipyretics. That one is called on to exercise care as to dose and period of administration of this class of drugs so as to avoid pushing a methemoglobinemia beyond therapeutic limits or because of other possible deleterious effects there is no question.

[10] "It (methemoglobin) is, however, affected by the products formed in the blood during asphyxia, while COHb is not, the MetHb formed by the nitrites is reduced by these products to Hb, which as it passes through the lungs takes up O." (Landois and Sterling, Human Physiology, Fourth Edition, 1892.)

(2) *Some oxyhemoglobin is produced within the tissues, and herein vicarious function for an embarrassed pulmonary respiration is established.* The view that oxyhemoglobin may be furnished the organism otherwise than by the lungs may appear radical, yet apparently forces acceptance in the light of the following observations, viz., that if a careful decomposition of methemoglobin be made in glass by just enough of the reducing agent to permit the process to proceed slowly, spectroscopic examination will demonstrate the presence of oxyhemoglobin absorption lines before those of reduced hemoglobin are attained, the sequence, therefore, being methemoglobin, oxyhemoglobin, reduced hemoglobin (Jaderholm). Not only this, but the reverse is also true. If reduced hemoglobin be slowly oxidized to methemoglobin in glass, the spectroscope shows that here, too, oxyhemoglobin is an intermediate compound, the sequence being reduced hemoglobin, oxyhemoglobin, methemoglobin (Saarbruch). The similarity of chemical reaction that attends methemoglobin formation and its reduction in the experimental animal to the same procedure without the body permits us to believe that where either of the preceding reactions occur during life oxyhemoglobin must also appear as an intermediate product. *Hence, in induced, slight methemoglobinemia some of the methemoglobin reduced to oxyhemoglobin by leucomains is, no doubt, further reduced by the tissues themselves, or, again, in the course of an induced oxidation from reduced hemoglobin to methemoglobin not all of the intermediate oxyhemoglobin would attain the methemoglobin state, because of the appropriation here also of some of the former by the tissues.* This conception of methemoglobin utilization in disease, it will be noted, differs materially from earlier theory that the internal administration of potassium chlorate benefits by furnishing oxygen to the tissues in the course of its decomposition. The present hypothesis includes a series of reactions, (1) superoxidation of reduced hemoglobin or oxyhemoglobin to methemoglobin; (2) reduction of methemoglobin to reduced hemoglobin, with concurrent oxidation of reducing substances in the blood; (3) the occurrence of oxyhemoglobin as an intermediate product in course of corpuscular oxidation and reduction.

But, it may be urged, if methemoglobinemia at any time be other than harmful, how comes it to be associated with various pathologic conditions and in these without extraneous origin? It has been found in exudates and transudates, also in the blood following severe burns and scalds, in insolation, septic conditions, in Addison's disease, etc. The question may be answered thus: In these and probably many other morbid conditions, methemoglobinemia (always noted as only a trace and by no means of a degree that could be responsible for death of the patient) represents a conserving process of nature which we imitate by inducing therapeutically a like blood change. Nature accomplishes this by the products of metabolism. Of such products, which produce methemoglobinemia, two which may be cited are pyrocatechin and hydrochinon, and doubtless there are many others.

Viewed from the dual standpoint of oxidizer, both of reducing substances in the blood and of the tissues themselves when for some reason pulmonary respiration is inadequate to furnish sufficient oxygen, induced conservative methemoglobinemia would explain the present empiric use of substances which produce the met compound, viz., nitrite of amyl in angina pectoris, pyridin inhalations in asthmatic attacks, potassium chlorate in tonsillitis and its occasional use, long continued and with success to prevent recurrent abortions, the bromin salts in epilepsy, iron as the perchlorid in chorea minor and as insisted on by the older practitioners in sepsis, Lugols solution and the iodid of iron in scrofulous and cachectic conditions, potassium permanganate in anemia, quinic acid[12] recently recommended as specific treatment in gout, etc.

Because fumes of pyridin proved useful in asthmatic attacks, I concluded to try potassium chlorate as a constitutional in the same condition, and obtained good results, although I would not care to have a patient continue long on this drug, or at least without constant supervision, for fear of damage to the kidneys. Also, one need be clear as to one point. I do not mean to say that, because each of a number of drugs can produce a methemoglobinemia, they may be indifferently substituted in treatment, one for another. Without doubt other affinities, too, of these remedies must decide our choice. The rapid but evanescent relief from dyspnea and vasomotor spasm effected by use of amyl nitrite or pyridin fumes could not well take the place of the prolonged effect on metabolism of potassium chlorate or the latter of the bromin salts which experience has shown approaches specific effect in epilepsy. Yet substitution of met-producing drugs is, to some extent, efficient, as we have seen, and may again be noted herein that the one vegetable drug which it has been found fills a serviceable place beside the bromids in the treatment of epilepsy is *Solanum carolinense,* a plant which belongs to one of several classes that contain so-called saponin bodies, glucoside substances which produce methemoglobin.

There are many other facts pertinent to this line of thought which might be added, but enough has been said if, in response to this first paper, members of the profession, and especially such observers as are able concurrently to utilize clinic and laboratory, will find the subject of sufficient interest to test the principle here advanced, full confirmation of which would materially extend the province of rational therapeutics.

I take pleasure in expressing my obligation to Prof. W. E. Engle of the University of Denver for the privilege of working in his laboratory and for his assistance in examination of blood with the spectroscope.

Since writing the above article J. von Mehring's[13] frequently quoted thesis on potassium chlorate has come into my hands. One important conclusion of von Mehring was "that with an accumulation of CO_2 in the blood (blood from carotid artery in dyspnea) and in an amount not resulting in death, the deleterious effects of $KClO_3$ are increased in great degree" (i. e., absorption bands of methemoglobin were noted after a much shorter space of time than with normal blood from the carotid). The same result was observed after addition of small amounts of acid sodium phosphate to blood.

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[11] In reference to this, the fact already pointed out, that methemoglobinization of the red cell is equivalent to a superoxidation, is again of interest here. In that it suggests the possibility that the O atoms when freed act as nascent O. According to Engler's views, the first step in systemic oxidation is the decomposition of peroxids by that class of ferments, known as peroxydases, while, according to Landois and Sterling, it is the active or nascent O that acts as so powerful an oxidizing agent that it converts water into hydric peroxid, N of the air into nitrous and nitric acid and CO into CO_2, which ozone does not.

[12] Dry distillation of quinic acid yields pyrocatechin and hydrochinon (U. S. Dispensatory 17 Ed., page 1432) both of which transform O_2Hb to MetHb.

[13] Mehring, J. von: Das Chlorsaure Kali, 1885.

My own conclusions are just contrary to the above where slight, therapeutic methemoglobinemia is concerned, and which may, therefore, be stated thus—in dyspneic conditions, the greater the rapidity of an induced methemoglobinemia proportionate to the needed oxidation of increased amounts of reducing substances in the blood, the greater and more rapid the benefit to the patient. This is also in accord with personal clinical experience as regards relief of dyspnea by administration of certain methemoglobin-producing drugs in small amounts. I have not tested the effect of this same class of drugs in phosphorus poisoning, but I find in von Mehring's thesis the following reference: "Tessliers[14] observed at the clinic of du Moulin in Ghent a case of phosphorus poisoning, wherein the patient, owing to great repugnance to turpentine, was given potassium chlorate, with apparent beneficial results." It is significant that turpentine shares with potassium chlorate methemoglobin producing properties.[15]

SYMPTOMS, DIAGNOSIS AND PROGNOSIS OF UNCOMPLICATED INTESTINAL AMEBIASIS IN THE TROPICS.

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SYMPTOMATOLOGY.

The symptomatology of amebiasis varies more than is generally taught and it seems desirable that this more comprehensive clinical picture be taken up more in detail, calling particular attention to the early diagnosis of the disease and to some of the peculiarities of the milder forms.

In discussing this question, writers have generally divided the cases into groups according to the clinical manifestation which, as clinical conveniences, answer the purpose and are fairly uniform. Osler considers it under the headings acute and chronic. Harris divided the disease into very mild forms, moderately severe cases and very severe ones. Lafleur and Futcher divide them into grave and gangrenous forms, those of moderate intensity and chronic ones.

I shall discuss the subject under the following convenient clinical divisions:

1. Latent and masked infections.
2. Mild and moderately severe ones.
3. Severe cases, including gangrenous and diphtheritic ones.
4. Infection in children and in the aged.

These clinical forms often change from one to the other and may do so several times during the course of the disease in the same patient. The amebic process in all is essentially chronic, but acute symptoms from concurrent or secondary infection by other agents are frequently seen.

Latent Infections.—By this term are designated those cases in which there is a true pathologic process, containing amebas without diarrhea or other symptoms which would ordinarily indicate the presence of such an infection.[1]

It might be objected that this latency is really a period of incubation. In a sense, this may be true, but as many of the cases, even fatal ones, always remain in this class, and as there are nearly always certain manifestations in addition to the positive one of the presence of amebas, it seems better to give latency a separate place in the clinical classification; and, furthermore, the most useful results will be secured by making such divisions rather sharp and by confining the incubation period in all classes of the disease to the unknown time between the infection and the appearance of amebas in the stools.

Under these circumstances it is readily seen how difficult latency may be to differentiate from what properly may be termed incubation. This becomes all the more difficult when we remember that amebas may possibly be found transiently in the normal intestine and that there are at present no practical means of differentiating between species of amebas. It is clear, therefore, that by basing treatment on the method of diagnosis recommended, unnecessary therapeutics may occasionally be instituted.

Cases of this latent class are not infrequent in Manila and are becoming more and more recognized, as we learn more of the character of the infection, and I do not believe that giving them a place in a purely clinical classification can be criticized by those who have had experience with the disease in the tropics. They are certainly of very great importance and deserve the most careful consideration, for the life of the patient often depends as much on the diagnosis and treatment here as it does in some of those clinically more active infections. Some of these patients, as has been noted, never show clinical manifestations during life, and in some others, when such symptoms do develop, the time for successful therapeutics may have passed.

The course and outcome, as in some other types, varies greatly. Usually, after a period ranging from a few weeks to many months, more active symptoms develop and in general the patient assumes the clinical type of a more or less severe dysentery. This change may occur gradually or very suddenly, and in the latter instance, unless the patient has been under very close observation, we may be misled into believing it to be one of primary acute amebic dysentery. On the other hand, some of these cases go on to recovery or death, without ever showing active diarrhea.

The symptoms during latency may be entirely absent subjectively and objectively for considerable periods of time; but usually conditions develop, which, by the aid of postmortem findings, we have come to recognize as indicating the nature of the process. As has been stated in previous publications, these cases are essentially those in which the lesions are in the cecum and upper colon. Careful stool examinations, obtained after a hydrogogue cathartic, often show mucus mixed with old discolored blood and other tissue elements, indicating both the location, and with their associated amebas, the nature of the infection. Rather indefinite, dull, aching abdominal pains are frequent and are often attributed by the patient to "taking cold," because they are first noticed during the night or early in the morning, and afterward are usually most active at these times. There may also be some "indigestion," lassitude, headache, a coated tongue, foul breath, etc. Loss of appetite may be present, and the patient often notices slight loss of weight, and, if a woman, usually complains of loss of color and a yellow skin. Physical examinations will usually secure additional data. Deep palpation discloses tenderness along the colon, most often over the cecum, and if the duration is great and the patient not too fat, a thickened intestine may be made out.

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[14] Annal de la Soc. de med. de Gand, 1882.

[15] Other authorities which may be referred to are: Beilstein, F., Organische Chemie, Dritte Auflage. DaCosta, John C., Jr., Clinical Hematology, 1901. Ewing, James: Clinical Pathology of the Blood, 1903. Grawitz, Ernst: Klinische Pathologie des Blutes, 1896. Kobert, Rudolf: Lehrbuch der Intoxicationen, 2 vol., 1902-1904; U. S. Dispensatory, 17th edition, Article on Ptomaines, 1898. Wood, H. C., Therapeutics, Principles and Practice, 10th edition, 1897.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

NOTE.—The other papers in this symposium will appear in a later issue of THE JOURNAL.

[1] Dock, in 1891, reported extensive amebic ulceration in the cecum of a man who had not had dysentery and who had passed only normal stools. Councilman and Lafleur, in 1892, and Lafleur, in 1897, called attention to the fact that an amebic process may be latent, the stools being well formed and no amebas being found in the small adherent flakes of mucus, and that in these cases the true nature of the disease is often not suspected until abscess of the liver calls attention to it. These observations have been confirmed by Osler, Rogers and many other writers.

Examples of this class of cases, as stated above, have been reported by several writers, and I have called particular attention to them in previous publications. Two additional examples from many that might be given are briefly as follows:

Case 1.—A young married woman, previously in good health, came to the Philippines in 1903. About three months later she consulted me, complaining of general lassitude, dull pains in the back of the head and neck, coated tongue and bad breath.

Treatment.—She was given calomel and soda in broken doses, followed by a Seidlitz power the following morning, when examination of the stool showed amebas fairly numerous and of good size. She was placed on a bitter tonic of iron, quinin and strychnin. For the next three months there was little change in the general health and the bowels continued regular. Amebas were again demonstrated in the stools and this time were mixed with mucus, showing streaks of old discolored blood.

Course of Disease.—During the next month she complained of dull abdominal soreness, which on pressure was more marked in the region of the cecum. "Indigestion" was complained of, anemia was noticeable, and she had lost five pounds in weight; but the bowels were still regular and apparently normal. At this time she consented to take enemas, but after about a week's time she became dissatisfied and passed to the care of another physician, on whose recommendation she spent three months in Japan. While in that country her symptoms of indigestion were less noticeable and headaches were absent, and she returned feeling in better health and spirits. Shortly after her return to Manila, however, there was a recurrence of the symptoms before complained of, and in a more pronounced form: in addition flatulence became annoying; but there was still no diarrhea. Stool examinations after a hydragogue cathartic showed numerous amebas, and considerable mucus with some blood. Her symptoms, as usual, were relieved temporarily by the cathartic. About this time she had had a moderate diarrhea, which lasted for a few days and was followed by constipation, with severe pains in the right iliac region. Another attack of diarrhea came within a week and dysenteric feces began to be voided. Typical acute dysentery developed, and death occurred within ten days after the acute onset and nearly one year from the time when amebas were first found in her stools.

Autopsy.—At necropsy an old advanced amebic infection of the cecum and upper colon, with most extensive ulceration and chronic fibrinous adhesions were found. More recent amebic lesions were scattered throughout the rest of the colon, and an exquisite acute diphtheritic dysentery was engrafted on the older process.

Case 2.—A Filipino prisoner in Bilibid prison showed amebas in his stools on repeated examinations for more than four months. Sometimes after administration of salts blood cells were present, and the mucus was sometimes stained with dark, partly decomposed blood. He was apparently a perfectly healthy man, and had no diarrhea or dysentery.

Autopsy.—At necropsy, following death from intercurrent lobar pneumonia, the cecum, and ascending and transverse colon showed amebic ulceration, which was quite advanced about the hepatic flexure.

In addition to latency, the symptoms of this infection may be completely masked, and mistakes in diagnosis are, no doubt, frequent when the disease is endemic.

The clinical manifestations of several diseases may mask those of a latent or mild amebic infection. The scope of this paper will not allow a full discussion of these, and the subject will be treated more thoroughly in a paper soon to appear on the complications and sequelæ of amebic infections. Perhaps the most frequent of these conditions, and those which are also likely to lead to mistakes, are chronic constipation and gastritis or appendicitis. The latter of these has already been discussed.[2] Gastric symptoms of more or less severity are particularly prevalent in the tropics, both with and without amebic infections of the colon; and for this reason, particularly when severe, often completely obscure the less active disease when present.[3]

Numerous examples might be cited, showing the variety and prevalence of such conditions; but my object here is to call particular attention to it, without leaving the impression that every case of stomach trouble in the tropics masks an amebic infection of the colon.

Constipation is a very prevalent condition in the tropics, as it is in the United States, particularly among women; and, as might be inferred, may frequently mask amebic infection in the early stages, and in the latent and less active forms until irreparable damage may have been done to the colon.

I have under my care now a woman who has for years been a chronic sufferer from constipation. About five months ago she began to lose weight and other symptoms developed, suggesting probable amebiasis, which was confirmed by microscopic examination of the feces. During this time, the constipation had persisted, notwithstanding that blood and mucus were obtained with every specimen secured by salts, and diarrhea did not develop until about two weeks ago. Dysenteric stools quickly followed, and treatment, which is still being given, was instituted.

Such cases as this and those previously described are of frequent occurrence in practice in Manila and support the conclusion which I have already expressed, namely, that the presence of amebas in the stools should always be considered diagnostic, at least in so far as treatment is concerned. The fact that one occasionally sees a case similar to those mentioned above, in which clinical dysentery never appears, the patient never feels ill, and amebas eventually permanently disappear from the stools, is not a sufficiently strong argument against the conclusion given, until such time as definite data indicating the final outcome are available early in the infection.

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[2] Bull. 18,. Bureau of Governnment Laboratories. The Journal A. M. A., April 8, 1905, p. 1098.

[3] I now have in mind such a case in a very prominent man in Manila. He had for years been a sufferer from chronic gastritis, and after a few months' residence in the Philippine Islands the symptoms became more aggravated, and just as previously, he had periodic outbreaks of diarrhea, only that with the increase in the stomach symptoms, the diarrhea became much worse. At the end of six months he was confined to his bed, unable to retain food, and reduced almost to a skeleton, and the bowel evacuations had become dysenteric. An examination of the feces showed numerous amebas with blood and mucus. Under careful treatment, directed particularly to the amebic infection, he slowly improved and was eventually restored to his usual health.

Mild and Moderately Severe Cases.—These form by far the great majority of those seen in Manila at the present time. Formerly they occupied about the same place as that occupied now by latent ones, i. e., they were treated as simple diarrheas from other causes, and often the true nature of the infection was not recognized until the development of bloody mucus discharges, or more often the pathologic report called attention to it.

The symptomatology of this class of cases, as well as that of the more severe cases, is so well understood and has been so often described that I will condense that part of the paper into calling particular attention to the conclusion which we have come to in our work in Manila, that diphtheritis and other acute pathologic processes seen at postmortem in this disease are the result of other etiologic agents and are not a part of the true amebic infection.

The larger number of these cases develop from the latent ones already described, just as the majority of the more severe ones usually arise from this type. It is impossible to say just what proportion of them develop as such primarily or follow a more or less definite latent period; clinically, the time of onset is usually dated from the appearance of diarrhea. There may be prodromal manifestations before the onset of diarrhea or dysentery in cases in which amebas may not be found at the time, but here the prodromes are very like the manifestations of the latent type, viz., indefinite abdominal pain, generally attributed by the patient to "taking cold" and explained by not a few as being caused by sleeping without an abdominal band on certain cool nights; tenderness on palpation along a part or all of the colon, "indigestion," headaches, usually of a dull cerebral type, a general feeling of depression, ill health and irritability of temper, and sometimes melancholic tendencies, with anemia and loss of weight.

In the majority of properly treated patients the disease clinically rarely passes from diarrhea, but sometimes here as well as in the larger number of untreated ones diarrhea is only preliminary to a more violent clinical picture. Many cases, however, even without treatment, never become dysenteric in the general acceptation of the term.

The course in uncomplicated cases is extremely chronic and the outcome rarely recovery, being most commonly the development of "sprue" or chronic gastroenteritis giving other clinical pictures; and the most frequent termination is death from intercurrent disease or complications. I am still in correspondence with a number of old Manila patients, now in the United States, in which the cases are of from four to six or more years' duration, and in which symptoms are still very much the same as when the patients left Manila.

Following a gradual onset from a period of known latency, the diarrhea is usually intermittent and more marked in the mornings, consisting of two, three or four soft, semi-fluid stools, without mucus or blood and passed without pain. This condition may last from one to several days, and is usually followed by a tendency to constipation. Succeeding outbreaks usually become more severe and may last for days, weeks or months, until the appearance of blood or mucus causes the patient to realize that he has dysentery, and it is at this stage that he most often appears for treatment. When the onset is more sudden, some blood and mucus are frequently noticed in the stools from the first; there may be some tenesmus and symptoms may continue for a few days, to be followed, as in the first case, by a period of constipation. The subsequent course of the disease in the two cases may not be different, but usually the more acute the onset the more rapid development of more severe symptoms. It is certain that in not a few of these the sudden outbreak is not due to amebas, but to other causes. There are frequently the same extrinsic causes for these outbreaks as when they occur in subjects free from amebas, which is, of course, of frequent occurrence in the tropics, and, in addition to this, careful inquiry will often reveal that there were significant manifestations before the onset in the amebic cases, and it may even be observed when amebas were known to be present for some time prior to the outbreak.

Severe Cases.—The clinical aspects of this type of the disease are the best understood and carefully described, and need but a brief summary here. As is true of the class of cases just discussed, in by far the greater number of cases it develops from a previously existing latent or milder type.

To this class belong also the diphtheritic and gangrenous cases, which are always severe and are undoubtedly due to a concomitant or secondary infection with some other agent, which is also the cause of severe forms of other types.

The onset here, whether occurring in an apparently healthy subject or following an existing milder type, is usually quite sudden and is characterized by the phenomenon of an acute dysentery from other causes. There are frequent mucus bloody passages, with tenesmus, colic, thirst and perhaps some fever.

In this severe form, whether apparently primary or secondary to one of the milder types, the course is usually much shorter and death is frequent from toxemia, perforation of an ulcer or from exhaustion of the patient. There are cases in which postmortem examination may show excellent nutrition and a rotten intestine, with either extensive gangrene or diphtheritis. Even in these, however, not infrequently the severe symptoms subside under treatment, and the case may continue as a more moderate one, or may be even mild in its symptoms, thus exemplifying the previous statement that the clinical types designated may frequently change from one to another even in the same patient.

Infection in Children.—Particular attention has been called to the disease in children by several writers.[4]

I have had twenty-one cases in children between the ages of 6 months and 10 years in private practice in the Philippine Islands, and one necropsy in a girl 3½ years old. When we consider the increased danger of infection which is present for children in the tropics, we must conclude that they present an increased natural immunity, a fact which is still further borne out by a study of cases in which infection does occur, for the disease is usually of a very mild type and is very amenable to treatment. In only two of my cases (in addition to one death) was the disease what could be called moderately severe from its clinical manifestations. The symptoms, in general, conform to the milder types in adults, and recovery is almost certain under proper treatment. I have seen children in whom there was undoubted active infection recover without treatment.

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[4] Amberg, in 1901, carefully reported five cases from the Johns Hopkins Hospital, and reviewed the literature on the subject. Harris reported thirty-five cases, four of them in children under 10 years of age. Strong found amebas in the tuberculous ulcers of a 3-year-old child; Slaughter in liver abscesses of a 17-year-old boy; Kartulis in children of all ages except infancy; Pfeiffer in the stools of several children; Lamb in a 2-year-old child; Lutz in the stools of a little girl; Sonsino in the intestinal mucus of a child; Cahen in a girl 4 years old; Gneftos in the liver abscess of a 6-year-old girl. Oddo (1897) reported twelve cases of liver abscess following dysentery in children between the ages of 2 and 13.

The aged, as in the case of children, seem to manifest a decided natural immunity; but, when once established, the disease in them is usually of more serious import than even in young adults. The symptoms are commonly of a severer nature, the course is more rapid, and the mortality higher, generally, as in other patients, due to complications or to intercurrent disease.

One thing particularly noticeable both in children and in the aged, as well as in natives of the Philippine Islands, is the great relative infrequency of liver abscess. I have not seen a case of liver abscess in more than one thousand clinical cases and one hundred autopsies of natives of the Philippine Islands.

Analysis of Symptoms.—All varieties of facial aspect are seen, from a healthy one in some of the rapidly fatal cases to the more emaciated, anemic, yellow and even cachectic of some in the old long-standing ones. Usually for a long time the patient does not appear to be ill, and I have seen patients with the disease of more than two years' duration who had lost no time from the daily occupation.

In the early part of the disease the skin rarely shows any noticeable change, but in the old emaciated cases there is a general waste and a scrawny, dull, goose-flesh skin, often of a muddy color or even jaundiced. In this class of cases there is frequently an odor which is quite disagreeable and which is as characteristic as for any of the diseases in which its diagnostic value is emphasized. Perspiration is usually not very active, but cases are occasionally seen in which the night sweats equal those of tuberculosis. Edema, particularly of the feet, ankles and less frequently at the hands, and the face about the eyes, is often present, but is not necessarily an indication of Bright's disease. Albuminuria and casts may be present at times when these edemas are noticed; and involvement of the kidneys is frequently observed postmortem, though in the majority of the cases terminating in recovery the proper functioning of the kidneys is restored, and there is no further trouble from this source. Bed sores are rarely seen, except in the most chronic types of old emaciated, anemic patients, shortly before death. Boils are frequent in the tropics during convalescence from any wasting disease, and in amebiasis they are not exceptional. Of rashes, urticaria is of quite frequent occurrence and often annoying in its persistence. Quinin rashes, from absorption of this drug, are the most frequent and troublesome, often requiring a suspension or change of treatment. Enlargement of the superficial lymphatics without pain is common, particularly among natives; but this is so frequent an occurrence in health and other diseases that diagnostic importance can not be attached to it.

Digestive System: The organs of digestion bear the brunt of this disease, and it is here that diagnostic symptoms are most frequently observed. The appetite is most generally good, particularly so in the latent and mild cases during the early part of the disease. Later catarrhal conditions of the upper intestine, stomach and even esophagus are followed by variations in the appetite, due to such alterations. In the early disease, likewise, but little or no discomfort is felt from satisfying a normal desire for food, but later such action is often followed by an increased diarrhea and by a further disturbance of the already disordered upper digestive tract.

The tongue is in no sense a valuable interpreter of the conditions at the seat of the amebic lesions. It may be clean or coated with furs of various colors and types. It may be large or swollen, showing the marks of the teeth along its edges, or it may be red and pointed. In very old chronic cases, in which the clinical picture is that of sprue, the tongue is one of the valuable indicators and here often shows small ulcers along its sides and under the tip. Glossitis, with superficial ulcers and hyperemia of the mucous membranes (sprue), is not uncommon, and when present causes a dryness and burning sensation, which is very annoying. In the same class of cases, too, the frequent lesions of the esophagus cause a burning pain along this viscus, which is aggravated by acids or solid food. Thirst is usually increased and often markedly so when the clinical symptoms are quite active, due, no doubt, to the loss of body fluids through the ulcerated bowel.

Symptoms referable to the stomach depend, for the most part, on various stages of catarrh of this organ and do not differ from symptoms of similar conditions due to other causes. In the early part of the disease, the stomach most frequently remains in good condition, but in the later stages, and sometimes quite early, its symptoms may be very annoying. Nausea is frequent, but vomiting rare at any stage. Both these conditions are aggravated and frequently are direct sequences to treatment by enemas. Symptoms of hyperacidity, with beefy-red tongue and epigastric pain (heart-burn), are encountered from time to time in all classes of cases; but a fermentative condition, with gas, a large, coated, flabby tongue, nausea and loss of appetite, are more common conditions.

The small intestine may be normal, but sometimes in the more chronic cases it shows a general catarrhal condition, which manifests itself by the usual symptoms of enteritis of other etiology. True amebic ulceration occasionally extends for from 2 to 10 cm. into the ileum, and in one case a perforation of an ulcer above the valve occurred, and the symptoms brought about by it closely resembled those seen in severe infection of the cecum.

The Large Intestine and Feces: The bloody-flux interpretation of the word dysentery must be abandoned in this disease, or, perhaps, a better solution would be to change our nomenclature so as to avoid calling it dysentery at all. It is true that diarrheic, or even dysenteric, stools are present at some time during the course of the disease in the majority of cases which proceed to a fatal termination; but even here this is not always so, and true dysenteric stools are not the rule in patients in whom treatment has been instituted early and properly administered.

There are numerous examples in literature of patients who have died of the disease in whom during life there was slight or no clinical dysentery. Such cases have been reported by Councilman and Lafleur, Osler, Dock, Strong and Musgrave and many others; and we (Mr. Clegg) have emphasized it in a recent paper.

In this paper I have already cited cases, and to them could be added at the present time a considerable number in which there was no diarrhea or dysentery at any period during the course of the disease, and yet death occurred from perforation of an ulcer or from intercurrent disease. Further, within the past year, in addition to a case already mentioned, I have performed the necropsy on the body of a patient who had been treated for more than six months for constipation, in whom advanced amebic ulceration of the cecum and ascending colon was found after death, resulting from perforation of a liver abscess. Such cases, of course, are not the rule, but they are sufficiently numerous to be of importance and are emphasized particularly for the purpose of demonstrating that, as in the case of many other infections, experience broadens our conception of the clinical picture.

With this data, I am prepared to state that in this disease there may be any stage between constipation and severe clinical dysentery, or alternations between these two conditions may be present throughout the course of the disease; and it is in this variation that we secure data for the arbitrary clinical division of the cases.

From what has been said it is seen that this clinical division is not necessarily borne out by the pathologic picture, and, therefore, it must not be inferred that the disease is of necessity mild because of the absence of a severe diarrhea.

In the great majority of cases, after a more or less prolonged incubation or period of latency, alternating periods of diarrhea and constipation develop, and usually the diarrhea becomes more severe with each return and persists longer, the constipation becoming less marked until finally formed feces are no longer passed. The diarrhea is usually more pronounced in the morning and after meals. In long-standing cases, the patient complains that the food passes through unchanged as soon as eaten.

There is nothing characteristic in the macroscopic appearance of the feces. Their consistency, amount, color, etc., may vary between the widest limits. In the early stage of the disease they are frequently formed and otherwise normal, and the surface may or may not show coatings of mucus sometimes streaked with blood. The morning specimens are usually the first to have a diarrheic appearance and are often copious and fermenting. When the infection is more advanced, the feces may take on the appearance of those due to chronic catarrh—fluid, with mucus and particles of undigested food. On the other hand, frequent large, light gray fluid or granular, foul-smelling evacuations, with mucus, and with or without fresh or old blood, and sometimes masses of tissue and occasionally casts of the mucosa, may persist for weeks or months. Again, particularly when the infection is low in the colon and rectum and there is some severe secondary infection, the stools may resemble those of acute dysentery in character and symptoms produced. The odor of the feces in many cases is particularly offensive and all but characteristic, so much so that diagnostic importance may be attached to it. The next most important point of diagnostic value obtained from a macroscopic examination is the indication of the location of the infection by the character of the blood, when such is present.

Amebic infections can be diagnosed with certainty only by microscopic examination of the feces or other material, and by this method also other valuable data may be obtained.

The best method of securing a specimen and the manner of procedure for microscopic examination have been described in *Bulletin* No. 18, Bureau of Government Laboratories, and some additional points are mentioned under the heading of diagnosis in this paper.

The presence of motile amebas should be considered diagnostic, at least in the tropics. The difference in size and numbers, the presence or absence of enclosed blood cells, and other described points of differentiation, I believe to be fallacious, as pointed out in a previous publication.

Many other parasites and substances of more or less importance are often found associated with amebas. Among animal parasites are the *Trichomonidæ, Cercomonidæ, Megastoma entericum, Embryo strongyloides,* ova of uncinaria, *Trichuris, Tænia, Oxyuris,* and others, either singly or in various combinations. At least some of these have a part in the production of the symptoms and must be reckoned with in treatment. Of other substances present may be mentioned leucocytes, red blood cells, pus, epithelial and other cellular elements. Various crystals are often present, but with one or two exceptions are of no diagnostic importance. Many other substances may be found, but as they have been so repeatedly discussed by others and are of such slight importance to the subject in hand they will be omitted.

Circulatory System: The circulatory system in this disease shows essentially the changes of secondary anemia. The pulse is usually of good quality, except in the later stages or in the presence of complications, when it takes on a type due to such involvements. Early in this disease the blood shows little or no change, the red cells being normal in numbers and free from abnormal elements, the leucocyte count is normal, the relative proportion of the cells is not disturbed, and the hemoglobin estimate is also normal. As an uncomplicated case progresses, the red cells begin to show changes due to anemia, and in the later stages the irregularity in their size and shape may be quite marked, and the count may show great reduction, notwithstanding the loss of fluid from diarrhea. The leucocytes under like conditions show some disturbances in relation of varieties, usually an increase in polynuclears and eosinophiles, but these changes are never such as to be of diagnostic value. Hemoglobin decreases with a reduction in the number of red blood cells. The spleen is not enlarged, except in some severe cases complicated by or associated with other infections.

Temperature: Fever is most often absent throughout the course of the uncomplicated disease. It may be present in a moderate degree, when it is usually of an intermittent type, highest in the afternoons. In acute exacerbations from any cause, and when there is an intense secondary involvement, particularly diphtheritis, it may be an important factor. Only recently I was for some weeks very much puzzled by an intermittent temperature, reaching its maximum of from 38 to 39° C. about 10 o'clock a. m. daily, in an amebic patient, until other symptoms proved the presence of an intercurrent syphilis. It is frequently found, but by no means constantly so, in liver abscesses. Here, if the abscess is also the seat of bacteria in considerable numbers, the septic temperature may closely resemble that of a malarial infection, endocarditis or almost anything else, of either the intermittent or the remittent type. On the other hand, one occasionally finds a large liver abscess without fever at any time. As the disease becomes more advanced, it is quite common for patients to exhibit subnormal temperatures, particularly during the forenoons, for days, weeks or months in succession.

Nervous System: This probably does not suffer much as a direct consequence of amebic infections, but of this I am not at all sure. There are many cases of neuritis, neuralgia, etc., which are so closely connected with the disease that until we are more fully acquainted with the exact method of the action of amebas in other parts of the body, our opinion can only be based on supposition.

Pain: The subject of pain in general, however, may be conveniently discussed here. Its variety and intensity in this affection is very great. It is partly a direct consequence of lesions and partly the result of more remote and sometimes unexplainable causes.

Tenesmus is more often an indication of complications or severe secondary involvement than of amebic infection. It is never present in the latent forms and is usually absent or very slight in those of moderate severity; but during acute exacerbations of either of these, and particularly when diphtheritis or other secondary infection, including that of *B. dysenteriæ Shiga,* is present, it may be very severe. It is much less severe or more likely absent when the lesions of whatever type are in the cecum or upper part of the colon.

Colicky pains are not infrequently seen, and even severe acute intestinal colic sometimes supervenes, especially when there is marked catarrh of the small intestine.

Dull, aching, somewhat indefinite abdominal pain is one of the most frequent prodromal symptoms, and quite frequently it is persistent during the disease. Sometimes it is so severe and constant that rest is impossible for days or weeks at a time. Though most usually complained of as being of maximum intensity along the course of the colon, as general careful palpation will show, not unusually it is found only in the region of the cecum and is sometimes complained of in the muscles of the back. Such pain may be due to the processes going on in the bowel, and, again, as demonstrated by postmortem examination, it may be the only indication during life of the most extensive serous inflammations and adhesions. These pains are often most active in the night, even in the mildest cases of infection, and may interfere seriously with the patient's rest.

Pains described by patients as "heart burn in the abdomen" may be general or more frequently local. When active lesions are low in the sigmoid and rectum, these and what are described as burning pains are frequent. The latter may be intense about the rectum, and may sometimes extend down the backs of the thighs and even to the calves of the legs. Old sciaticas are often "fired up" under these circumstances, and the beginning of sciatica is associated with such cases often enough to be suggestive.

Pains simulating those in appendicitis have been more fully discussed in Part 2 of *Bulletin* No. 18, Bureau of Government Laboratories, and in the Journal A. M. A., April 8, 1904. They are probably the most important with which we have to deal, because their true interpretation is so vital to the patient and because they are of such general occurrence in all varieties of amebic infection, from the latent to the gangrenous, with or without the presence of amebic or other forms of appendicitis.

Neuralgias, myalgias and arthralgias are met with too frequently to allow them always to be considered accidental associations. Persistent, dull headaches, particularly of the back of the head and neck, are also not uncommon. The genitourinary and respiratory systems and the organs of special sense rarely contain lesions which produce symptoms of any importance in the uncomplicated disease. The same is true of the joints and the osseous system, though complications may involve any of these structures.

DIAGNOSIS.

There are no classical symptoms in the disease, and hence an absolute diagnosis can be made only by microscopic examination of the feces.

In remote areas where the infection is endemic and where microscopic facilities are not available, one would be justified in making a diagnosis for purposes of treatment from clinical manifestations alone, but where laboratories are accessible this should never be done.

If one remembers the multiform clinical pictures which have already been discussed and watches the case for some time, a diagnosis of amebic infection may reasonably be inferred, but it must be borne in mind that the clinical picture does not in general differ materially from that often seen in diseases with an entirely different etiology, and, further, that there is not a single symptom or group of symptoms which is confined to this disease alone.

The following are the most important clinical manifestations in a question of diagnosis:

1. The bowel evacuations, particularly their odor, and the presence or absence of blood. Their consistency, quantity, frequency and the presence or absence of mucus, are much less important.

2. Abdominal soreness, which is increased on pressure and extends particularly along the colon, is most common and, taken singly, is one of the most valuable symptoms. Its diagnostic importance is greatest when of maximum intensity over the cecum and ascending colon.

3. So-called "indigestion" headache, general lassitude, with nausea or pain below the stomach after eating, etc., is quite common, but is also prevalent at other times, so that but little importance must be attached to it alone.

4. Loss of weight, especially in the presence of a good appetite, is quite important and is the best guide to the progress being made by the infection.

As already stated, neither one nor all of these symptoms taken together are sufficient for an absolute diagnosis; but when taken together in cases where careful palpation reveals a thickened, tender colon in places where it may be felt, they make the nearest approach to a sure diagnosis possible without microscopic examination of the feces.

The question as to whether the presence of amebas in the feces is always absolutely diagnostic of an infection of the colon has already been discussed. It may be that such is not always the case, but I believe that it is so nearly so that such an occurrence, at least in the tropics, should be considered diagnostic, at any rate for purposes of treatment. Such a conclusion is all the more justifiable when we consider the great certainty of good results in treatment instituted early, the long incubation period or latency which severe cases may show, the inability ever to establish a more certain diagnosis in those cases of light infection which terminate in recovery and, finally, above all, *the great reduction of the danger of liver abscesses by instituting early treatment.* It will be remembered that, according to statistics from many places, including Manila, over 20 per cent. of untreated patients or those not treated by enemas have developed liver abscesses, and that in a very large number of patients treated by my colleague and myself in private practice during the last few years, along lines laid down in *Bulletin* No. 18, there have not been more than two cases of liver abscess which developed after treatment was instituted. Inasmuch, then, as a correct diagnosis can be made only by finding amebas in the intestinal contents, and as their presence here, at least for purposes of treatment, are to be considered diagnostic of infection, regardless of clinical symptoms, the best method of determining their presence or absence should be part of our subject.

This is not always an easy matter. When there is active clinical dysentery, a microscopic examination of one of the passages will usually reveal amebas, but even here single or even several examinations will often yield negative results. The specimen for examination should, when practicable, be one obtained by some hydragogue cathartic, because the infected area frequently includes only a portion of the colon, and by this means the specimen is more certain to contain feces from the entire track.

For the same reasons, the method of extracting a specimen through a speculum can be of maximum value only where the lesions are in the lower bowel. For obvious reasons castor oil is not a satisfactory cathartic for this purpose, and specimens obtained by enemas are likewise unsatisfactory.

The specimen should be as fresh as possible when examined, for, while amebas will usually remain motile for several hours and sometimes for days, in many instances they lose their motility in a very short time. In Manila, a warm stage will never be found necessary, and a diagnosis had best not be made from any but motile organisms.

Usually no difficulty will be experienced in differentiating amebiasis from other diseases, but when other troubles exist as complications or associated diseases, which is of very frequent occurrence, the solution is often not so simple. Suffice it to say here that in practically every instance in which such complications or associations do exist they are rarely of a nature which offers contraindication to the institution of the usual treatment of amebiasis, and, therefore, whether or not the nature of the complicating trouble is determined, treatment of the amebic infection should be prosecuted.

PROGNOSIS.

The prognosis in this infection should take several points into consideration, and the evidence in each individual case should be carefully weighed before an expression of opinion is justifiable.

Fortunately, in Manila, owing to the good results of treatment, the physician is rarely called on to say very much; but in the more prolonged and persistent cases prognosis is eagerly sought by the patient and his friends. In general, under proper treatment recovery is the rule in young, well-nourished adults, in whom the disease is not of too long duration.

The principal determining factors in giving such prognosis are the manner of treatment, age, nationality, general condition of the patient and duration of the disease at the time treatment is instituted, reaction to treatment, the presence of complications and associated diseases, and, finally, the location of the amebic lesions.[5]

It must be remembered that in a certain percentage of cases, particularly in children and natives, the patients recover from the disease without any treatment whatever. On the other hand, one occasionally sees a patient in whom the disease is progressive from the first, and death is not apparently delayed by any form of treatment.

The disease is generally milder in children and in natives of the tropics, and its course is more often shorter and its mortality higher among the aged. Alcoholics apparently are less frequently infected, but when once the disease is established the gravity of the prognosis is increased. Previous good health and good general physical condition are favorable factors. The shorter the duration of the disease at the time treatment is instituted and the greater the tolerance for enemas the more favorable the prognosis.

The presence of complications or associated troubles, such as liver abscess, severe hemorrhoids, fistula or fissure in ano, and many others less frequent, materially decrease the chances of ultimate recovery. Probably most important of all, however, is the location of the lesions. As a rule the higher up the lesions, the greater the mortality and the less active the clinical dysentery. Severe infections of the cecum, unless treated early and carefully, are always serious.

CONCLUSION.

In conclusion, I wish to emphasize the fact that intestinal amebiasis (amebic dysentery) manifests itself in a much broader and more comprehensive clinical picture than is generally allotted to it.

Waiting for bloody mucus stools to appear before making a diagnosis and instituting treatment is responsible for a large percentage of the present mortality from the disease in Manila. Such stools sometimes appear early in the disease, more usually after considerable damage has been done, and occasionally are never seen before a fatal termination or recovery.

Suppose, for example, that by treating every patient in whom motile amebas are found, as recommended in this paper, we do occasionally treat a person who would have recovered without treatment, or possibly would never have had an active lesion, are we not justified, when we consider that by such procedure established early, without waiting for clinical dysentery, we increase many fold the chances of recovery of all patients?

DISCUSSION.

Dr. George Dock, Ann Arbor, Mich., said in regard to the importance of distinguishing the latent, that he was fortunate enough to see a latent, mild or variable case very long ago, and he has already called attention to it. Briefly, the history of the case is as follows: The patient was a man who, for several months, had no loose stools at all and no diarrhea, and was absolutely free from any symptoms ordinarily referred to as dysenteric, yet he developed a liver abscess which was operated on and proved to be amebic. The patient died a few days later, and it was shown that not only were there lesions in the cecum, but also in the upper part of the large intestine, as well as in the liver. The stools Dr. Dock examined and found no amebas or other evidences of the disease. If the patient had been under his observation a longer time the diagnosis might have been made prior to death, especially if saline cathartics, as Carlsbad salts, had been given to facilitate the examination of the stools. In diagnosis, the most important thing is the proper examination of the stools, and this has been much neglected because it has been supposed to be so difficult. By giving Carlsbad salts, stools can be secured whenever wanted, and there is really no difficulty in finding the amebas, even in cool media or in cool rooms. As an important and practical aid in this examination of the stools, they should be examined, not in deep vessels, but in flat vessels, the broad low granite dishes answering the purpose very well. A certain amount of practice is necessary in order to be sure always that what is seen are really amebas. Dr. Dock likes the modification of Jenner's stain, which he believes to be as good as the specific stains. His experience in the South shows that it is comparatively easy to treat this disease if it is seen at the beginning. Cathartics should be vigorously given, and irrigations of any kind are useful, his preference being for strong saline solutions. In the chronic cases the treatment is more difficult. These latent cases are the ones which are likely to be seen in this country. At the Saratoga session, Dr. Dock was able to report such a case, and within the last year he has seen another example which occurred in a man who had never been outside of the United States at all, and yet he had a severe infection with *Amœba coli.* The greatest care possible is demanded in the treatment of the patient. It is very necessary that constipation should be avoided. Instructions regarding the diet may vary greatly. He has seen beneficial effects from the use of ipecac used after the manner of Strong, covering it with salol. About one year ago he saw an interesting case of amebic infection from the Philippine Islands. The patient had amebic dysentery, as well as uncinariasis and the *Tricocephalus dispar.* He was treated for uncinariasis with thymol, and the amebic signs then disappeared as well. Although this is spoken of as a tropical disease, it may occur in other parts of the country. Though the clinical picture varies greatly, the diagnosis can be made, and the treatment is becoming more and more satisfactory.

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[5] In my last 100 completed cases treated in private practice including all types and stages of the disease, 96 patients have permanently recovered without leaving the Philippine Islands. There has been one death and three have returned to the United States.

Dr. H. R. Lemen, Alton, Ill., stated that he has had two years' experience in the Philippines, and made careful examinations of 532 males and 53 females who were taken there as prisoners without any apparent evidences of the disease whatever, and he found 91 males and 11 females with amebas. Among 50 soldiers there were found 10 cases of liver abscess.

Dr. Stanley Black, Los Angeles, Cal., asked Dr. Musgrave for the points in differential diagnosis between *Amœba coli* and other amebas which exist in the stools. Dr. Black has seen a number of cases in which amebas were present in the stools, but in which there were no symptoms of dysentery, such as one expects to find when the *Amœba coli* is present. He also asked if Dr. Musgrave considers the presence of red corpuscles diagnostic of the *Amœba coli* and if the pathogenicity for cats is of importance in diagnosis. In Dr. Black's opinion the material for examination can best be obtained by the introduction of a rectal tube. The mucus so obtained often contains many amebas.

Dr. F. C. Shattuck, Boston, stated that he has seen one case of amebic dysentery in a man who had not been out of New England. This simply corroborates what has already been stated, that the disease is not necessarily one of the tropics.

Dr. Claude A. Smith, Atlanta, Ga., said that physicians meet some cases of amebiasis in the South, but of course not anything like the number found in Manila. As an illustration of the fact that some patients appear to recover or even recover without treatment, Dr. Smith said that five years ago, at the request of Dr. H. F. Harris, he made a postmortem examination of a man who ten years previously presented clinical symptoms of a severe type of the disease. He removed the colon, but there was no evidence of any ulceration, nor any macroscopic signs of previous ulceration. This also showed that the symptoms of the patient are not necessarily an index of the extent of the lesions. He recalled one or two autopsies in which he found extensive ulcerations throughout the colon, and yet the clinical symptoms did not indicate anything serious. There was one case in a negro man, about 45 years of age, whose muscular development was perfect, presenting no signs of emaciation, and who was not considered to be in serious condition, and yet he died forty-eight hours after admission to the hospital. The colon's entire mucous membrane was found to be necrotic, and yet that man had been hard at work until two days before death. He asked if Dr. Musgrave has been able to trace these cases of amebiasis after apparent recovery, and if he has found many relapses.

Dr. W. E. Musgrave, Manila, P. I., said that all the questions and points brought out in the discussion have been carefully gone over in the present paper and in previous publications. (See The Journal A. M. A., April 8, 1905, p. 1098, and Bull. 18, Bureau Government Laboratories, Manila.) In conclusion he emphasized the fact that the symptoms produced by this affection are in no way proportionate to the danger done to the bowel.

AFFECTIONS OF THE THYROID IN CALIFORNIA.*

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SAN FRANCISCO.

Six years of hospital and private work in San Francisco have strengthened the conviction that affections of the thyroid, like aneurisms and early arteriosclerosis, are more common here than in many other cities of the United States. With this idea in view, letters were sent during the last months to men in each county of the state asking for information as to the occurrence of goiter, myxedema, sporadic cretinism, and exophthalmic goiter in their districts. My obligations are here expressed to many colleagues who have kindly sent reports. There seems to-day little need for review of reasons in grouping exophthalmic goiter with thyroid affections—the influence of nervous factors can not be denied, the possible influence of other internal secretions in etiology is recognized, but the gland plays a chief rôle in symptomatology (even though, as Moebius says, there may be a prethyroid stage of the disease). Despite the vast amount of work of late on the parathyroids by Gley, Edmunds, Welch, Benjamins, Jeandelizo, Moussu, Vassale and Generali, Lusena, MacCallum, Brissaud, Pineles and others, it is not yet possible to say that they color in any way the picture.

The statement of Hirsch that "our information on the endemic occurrence of goiter in North America belongs for the most part to the early years of this century and is very fragmentary" can be modified in light of articles by Richardson, by Adami on goiter in Canada, by Osler on "Sporadic Cretinism in America," by Dock on "Goiter in Michigan." *The Medical Sentinel*, February, 1904, had an editorial on goiter in the northern Pacific states, and lately Musgrave of Washington described the great frequency of the condition in the Wenatchie and Puyallup Valleys in animals as well as man. Praslow years ago reported cases of cretinism among Indians near Cape Mendicino, Humboldt County, and among the Spaniards in Southern California. Osler in his article on sporadic cretinism wrote: "Praslow's account of the occurrence of cretins in California I have not seen, but I have letters from several correspondents in that state who know nothing of its existence at present, while in the State Insane Asylum at Stockton, Dr. Hoisholt tells me there are only two cases." It is interesting to note from reports of Dr. Gross of Eureka and Dr. Delamere of Ferndale that goiter is common in Humboldt County, not far from Cape Mendicino, although accounts of only two cretins are sent from that district. I have seen two cretins among Indians near Kelseyville, Lake County. Reports from Southern California do not substantiate the account of cretinism among the Spanish settlers.

GOITER.

Data concerning goiter must of necessity be unsatisfactory, as slight or even moderate enlargements of the gland are often overlooked; and, as in all statistics, the personal equation of the reporter must be considered. A few weeks since a physician came personally to report the absence of thyroid affections in his district and presented himself a good example of myxedema. The testimony of physicians from counties about San Francisco Bay (Marin, Alameda, Santa Clara, San

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

Mateo, and San Francisco), confirms the idea that moderate enlargements of the thyroid are common. Most patients are natives of California, and inheritance from parents coming from endemic goiter regions of Europe would seem to play little part. Dr. Eleanor Bancroft, Berkeley, writes me that 5 per cent. of the young women entering the University of California in 1904 had enlarged thyroids. Since January 1, 1905, I have noted moderate enlargement in 75, large goiters in 8 patients out of 546; 14 cases were in men. This would give a percentage of 15.2 in individuals, nearly all of whom are native born, or who have lived for years in California. In one family five members have goiter, in another three. In a number of young women accompanying nervous symptoms seem definitely referable to thyroidism, but in the majority of instances the enlargement is without influence on the general condition.

Dr. Pope of Watsonville has noticed 12 decided goiters in 1,200 cases, but writes that small tumors are much more frequent. Reports from the southern part of the state (San Diego, Riverside, San Bernardino, Los Angeles, Santa Barbara, Kern, Tulare, Kings, and San Luis Obispo counties) would indicate that goiter is less common there than in the bay counties. Dr. von Zwalenberg of Riverside says it is much less common than in Michigan. Dr. Sanborn writes from Redlands that there are about 40 cases of moderate goiter in the practice of different physicians there. Los Angeles and Pasadena physicians report the condition uncommon, and men from Fresno, Tulare and San Luis Obispo as rare. Through the kindness of Dr. P. K. Brown, however, I am able to quote a letter from Miss Jacobs of the Los Angeles Normal School in which she says goiter is common in the young women in attendance, and that not a few report other cases in the family—one term 8 per cent. had enlargement of the thyroid.

The interior mountain counties of the central part of the state seem much less affected. Letters from Madera, Merced, Mariposa, Stanislaus, Tuolumne, Amador, El Dorado, Placer, Nevada, Sierra, Butte, Yuba, Sutter, Yolo, Colusa, San Joaquin report few cases. Dr. W. A. Briggs thinks moderate sized goiter fairly common in Sacramento county. Dr. Dempsey of Vallejo, Solano county, sees enlarged thyroid in 4 per cent. of his patients. Lake, Napa and Sonoma have few cases. Dr. Margaret Evans mentions a family in Calistoga, Napa county, four members of which have goiter. Of the northern coast counties Mendicino and especially Humboldt appear to show endemic goiter. Dr. Bond of Ukiah writes: "I can only state in a general way that thyroid enlargement is very prevalent in this vicinity, most cases being of American parentage and without symptoms. Dr. H. G. Gross of Eureka writes that he sees a number of cases practically all of which come from an area about ten miles long and three wide, partly in the valley and partly in the foothills. Dr. H. S. Delamere of Ferndale, within the district spoken of by Dr. Gross, says: "Thyroid enlargement is quite prevalent here." Dr. Jorgensen of Fortuna, Humboldt county, however, sees but few cases. Professor A. C. Lawson of the University of California, in a paper on "The Geomorphogeny of the Coast of Northern California," describes the peculiar formation known locally as the "Wild-Cat Series" that extends through Humboldt county. Its peculiarity depends on the softness of the beds in general, the frequent alternation of harder and softer rocks, and the deep erosion of the Eel River and its tributaries. It would be of interest to map out the goiter region with reference to this peculiar terrane. The entire peneplain consists of marine deposits, pliocene and postpliocene, with a coastal strip of later mesozoic and tertiary rocks. The reports deal but slightly with questions of etiology—mention is made simply that most cases are seen in women and that enlargement of the neck has often been first noted during pregnancy. In several instances note is made that the goiter has enlarged with each pregnancy. No mention is made of goiter in animals, but I have seen it in one horse and two dogs in the past year.

MYXEDEMA.

Reports here are less equivocal. The bay counties again show the greatest number of cases partly on account of greater population, and partly because cases from a distance drift to San Francisco as a center. I have descriptions of 30 cases throughout the state. Tehama, Monterey, Sacramento, Santa Barbara, Riverside, Stanislaus, Marin, Yuba, Mendicino, Santa Cruz, Yolo, Kern and Colusa report one case each; Solano, Santa Clara, Butte, two cases; Fresno and Los Angeles three, and Alameda sends five. San Francisco physicians send accounts of 43 cases, without duplicating any of the reports from other counties as far as can be ascertained. Adding 10 of my own, there is a total of 53 cases from San Francisco, and 83 throughout the state. I have purposely omitted reports of doubtful cases, accounts of *formes frustes,* or descriptions of exophthalmic goiter with myxedema. In 50 cases in which mention was made of sex, 39 were women and 11 men. Age varied from 18 to 64. Thirteen had decidedly large thyroids, the myxedema resulting from changes in old goiters. In 22 the thyroid was not palpable, and no mention of the gland is made in 31. Of 55 ten were of foreign birth, but had been years in California. Twice the condition resulted from operation on goiter. Two of my cases were born in Norway. Two had spent some years in Alaska, and symptoms developed while there. Emphasis in description is laid chiefly on skin, voice, and mental changes and disturbances in locomotion. Three women had frequent epileptiform attacks which did not yield to thyroid medication, although skin and mental conditions improved. A woman reported by Dr. P. K. Brown had profuse menorrhagia before thyroid treatment was begun.

Some years ago I saw myxedema in a girl of 20 whose mother had just died of the disease. Skin of the face and over the extensor surface of the arms was thick and dry, there was a diffuse growth of hair over the face and arms that had appeared during the last year; the voice was remarkably deep and harsh, menstruation had ceased ten months. The fundus showed atrophy of the nasal side of both discs, and color vision was limited in the temporal half of both fields. In all probability change in the hypophysis was the cause of eye symptoms and perhaps of the hypertrichosis. Menstruation appeared under thyroid extract and the skin grew better, but the girl committed suicide and no autopsy was obtained. Uhthoff described blindness in a boy of 6 with myxedema; vision improved under thyroid, and this was attributed to shrinking of the hypophysis. Coppez describes retrobulbar neuritis from thyroid feeding, but no instance has fallen under my observation. Endeavor has been made chiefly by Brissaud, Murray and Pineles to distinguish between myxedema of thyroid and of mixed thyroid and parathyroid origin. They would attribute considerable influence to the parathyroids in determining sexual and mental changes. In cases with profound mental changes, therefore, we would look more closely for other signs of disturbed parathyroid function—particularly for evidence of tetany or convulsive seizures. Only one of my cases was mentally profoundly affected, and here the Chvostek and Trousseau phenomena were constantly absent. In one woman with most marked exophthalmic goiter and epileptiform attacks the Chvostek phenomenon was present on two examinations; partial thyroidectomy led to disappearance of all symptoms, no tetany developed, and the patient has been well three years.

FORMES FRUSTES.

Very interesting to me are the *formes frustes.* I have notes of 11 cases, 5 men and 6 women, all of whom presented the same clinical picture, and in whom definite improvement took place under thyroid medication. One was a woman of 35, two were men of about 45, and the others were from 55 to 65; the sister and daughter of one woman had goiter; one man and two women had small goiters. Such cases are fairly common in the literature of thyroid insufficiency. Some of these people have for years had dry skins, thin hair, pains between the shoulders, paresthesiæ, joint pains. In two of my cases influenza seemed a factor in precipitating thyroid symptoms—skin changes, nervous unrest and tachycardia. Most characteristic is the dry skin, scaling of the scalp, thinning of the outer half of the eyebrows, loss of hair on the neck and in the axillæ. Fat pads occur above the clavicles, and not infrequently there is a large pad over the upper dorsal vertebræ, a bib-like roll across the neck and upper sternum, thickening of the subcutaneous tissue across the lower ribs and above the elbows and knees on the extensor surface. Pains in the knees and ankles and occasional "giving away of the legs" are frequent. The voice has often a peculiar deadened husky quality.

Five instances of infantilism of the thyroid type described in detail by Brissaud, Meige. Hertoghe and others have come to my notice in the past two years. Two boys of 14 and 18 grew quickly under thyroid treatment, and showed increased development of pubic and axillary hair and of genitalia. One boy of 17 was excessively fat and had complications of muscle dystrophy and coxa vara. Another boy of 16 died of diabetes; thyroid extract had no effect on the sugar elimination. The fifth boy had acute nephritis and uremic convulsions.

SPORADIC CRETINISM.

In Osler's article on "Sporadic Cretinism in America" are included three cases from California, two of Dr. Hoisholt from the Stockton Asylum and one of Dr. Osborne from the Home for Feeble-minded Children at Glen Ellen. I have reports outside of San Francisco of 37 cases that from descriptions or photographs seem definitely examples of cretinism. Mongolian idiots and chondrodystrophy cases are not included in the classification. Of these, seven were born outside of the state in Mexico, Wisconsin, Illinois, New Zealand, New York, New England, and four have died. Doubtless the list can be extended by a more thorough canvass at some later day. Dr. Dawson, superintendent of the Home for Feeble-minded Children at Glen Ellen, Sonoma County, writes that there are several cases of idiocy of Mongolian type and a few cretins, but these are not included in the above. Physicians in San Francisco send me accounts of 28 cases, to which I can add 7 of my own, making a total of 61 cretins now living in the state, and all native born. The majority of reports chronicle absence of palpable thyroid enlargement. No valuable data as to etiology are available. Dr. Frances Sprague reports a girl of 2 from the Children's Hospital in San Francisco who died of general tuberculosis, with extensive tubercular changes of the thyroid. Dr. Millicent Cosgrave sends me notes of a girl of 5, born in New York. Mother and grandmother had goiter, and the maternal grandfather died of tuberculosis. The child seemed normal during the first year, and walked at 18 months, at 3 had measles and later tuberculosis of the glands of the neck. Since then she has not walked well, has backache, is nervous, skin dry and rough, appearance that of a cretin, is extremely stupid, abnormally developed—is as tall as a child of 10. Breasts, hips and limbs look like those of a girl of 16. The mental condition has improved under thyroid treatment. Brissaud calls attention to tuberculosis of the cervical glands as a cause of myxedema. In one of my cases symptoms developed soon after diphtheria. Dr. Dempsey of Vallejo reports seeing a cretin whose mother had a large goiter, with myxedema. Dr. Sprague mentions a girl of 14 with a big thyroid, another of her cases was but 18 months old. In a case of mine—a girl of 7—the parents were from the south of France. From the history, the father's sister was probably a cretin, and a brother of the patient died at 6 months in a condition suggesting cretinism. Dr. P. K. Brown tells me of two brothers born in San Francisco whose parents are German and perfectly well. In the greatest number of cases parents were born in California. In three instances parents were from the Azores, in two from Austria, in two from southern Italy, in three from Ireland. Detailed descriptions will be left to a later paper, but photographs of ten cases are now available.

EXOPHTHALMIC GOITER.

This affection would appear to be much more common in the counties about San Francisco Bay than in the other parts of the state. Dr. Emmet Rixford of San Francisco sends me notes of 8 primary cases and 3 secondary to goiter of years standing; Dr. T. W. Huntington, 5 primary and 8 secondary; Dr. W. I. Terry, 10 primary; Dr. J. H. Barbat, 10; Dr. Mac Monagle, 29. Physicians content themselves, as a rule, with saying that the affection is "common" or "decidedly frequent." Dr. Abrams has seen 30 cases. My own list includes 33 well marked cases of exophthalmic goiter, excluding *formes frustes.* Of these, 9 were male and 24 female; 7 occurred in patients with goiters of years' standing. Most observers agree as to the thyroid factor in the disease, but emphasize the influence of an unstable nervous system and the immediate effect of nervous shock. Dr. J. H. Barbat saw 3 cases develop acutely after fright. Some few years ago in the wards of Dr. Kerr in the City and County Hospital of San Francisco I saw an Italian with unusual history. Three weeks before, in perfect health, he had been out prospecting in one of the interior counties, had strayed off, and was lost in the mountains for two days. He was sick from that time, excited, restless, could not sleep, vomited, grew rapidly thin, had breathlessness, palpitation, trembling, could scarcely walk. Examination showed exophthalmic goiter, with cardinal signs, emaciation, terrifying unrest. For days he remained the incarnation of terror, but then slowly changed to the more uneventful stage of the disease.

In a woman under the care of Dr. Abrams, the father and brother showed symptoms of the disease. Two of my patients were mother and son and two brother and sister. The mother of one young woman under my care has myxedema. Dr. Crowley of Oakland reports exophthalmic goiter in mother and son. Dr. F. L. Adams of Oakland reports the disease in mother and daughter; the mother is from Derbyshire, a well-known center for goiter. Another of his cases gives history of the same affection in her mother and mother's mother.

In the reports of simple goiter, frequent mention is made of associated nervous symptoms, tachycardia, and tremor. These cases are similar to the ones described by Mikulicz and Rehnbach, by Kocher and others as instances of thyroidism associated with goiters of varying types. They form a transition to true exophthalmic goiter developing in individuals who for years have had goiter without symptoms. In a woman of 41, seen two years ago, there had been a marked goiter for 18 years; eight years before nervous symptoms became bothersome; there was exophthalmos, tachycardia, tremor. Swelling of the eyelids and a peculiar brawny infiltration of the side of the neck and face led to a diagnosis of complicating kidney disease, but this was not present. The swellings were analogous to the hardening of the skin of the face reported by J. Schulze, a firm infiltration not like true scleroderma nor yet of the consistency of myxedema. In a woman seen four years since, there had been a moderate goiter for years. During pregnancy signs of myxedema, as thinning of the hair, dry skin, supraclavicular pads, were reported to have developed and to have disappeared under thyroid extract. Unfortunately with continuance of the thyroid extract a typical exophthalmic goiter developed, which was marked by all cardinal signs when I saw her.

Breuer of Vienna and Gautier of Geneva have lately emphasized anew the occurrence of exophthalmic goiter after treating goiter with iodin preparations. Breuer cited a case developing after the use of K I—a syphilitic woman who had shown no previous struma. Rilliet, 1860, and Lebert, 1862, gave many instances of iodism in goiter cases. Theodor Kocher, in a recent article on "Die Therapie des Kropfes" in the *Deutsche Klinik*, gives a masterly review of the action and dangers of iodin compounds. His conclusions are based, in part, on the studies of iodin elimination in normal individuals and cases of goiter by A. Kocher published in vol. xiv of *Die Grenzgebieten der Medizin und Chirurgie*. He makes clear that most symptoms are due to thyroidism rather than iodism. With quick recession of a goiter, danger of intoxication greatly increases, but the disappearance of a struma is not necessary for production of symptoms. The smallest dose of K I may cause severe thyroidism in exophthalmic goiter or cause rapid emaciation in the newborn or in pregnant women. "In excited, unduly animated, thin individuals who always have congested faces, who tremble at nothing, get palpitation on the least occasion, and who sweat easily, one has to deal with beginning thyroidism, and one may cause outspoken exophthalmic goiter through careless use of iodin."

I have had several cases of iodism after small doses of K I in patients with small goiters, and now make it a rule to examine the thyroid and to look for signs of exophthalmic goiter before prescribing it. In one young man in whom K I, syr. acid. hydriod. and tr. iodi gave toxic symptoms, iodipin was given hypodermically with impunity, confirming the observations of Schuster and Lesser; it could be demonstrated in the tissues by x-ray plates six weeks after injection. According to Gautier, the source of plant and water iodin supply is the iodin "dust" given to the atmosphere by sea water. Rilliet of Geneva thought a change to the seashore might develop symptoms of exophthalmic goiter in patients with struma. It is an interesting speculation whether the number of cases about San Francisco are in any way due to the prevailing strong sea winds. It is certain that a few cases from the interior have done worse on the coast, and insomnia is apt to be a bothersome feature of the change. In eight of the reported cases there is noted a combination of exophthalmic goiter with myxedema, but description lacks sufficient detail to admit such classification. It is well known that edema and skin infiltration of different kinds may occur in pure exophthalmic goiter. Kocher describes a number of such cases. Dr. Rixford reported a remarkable case of a young woman of 29, who was married a few weeks before contracting scarlatina. Three months later a goiter, the size of a walnut, was observed. One year later there was rapid growth during pregnancy, and still greater enlargement after a second pregnancy two years later. General edema, tremor and choreic movements were noted, besides the usual symptoms. Edema rapidly disappeared after operation. In two of my cases, fat pads and hard infiltration of the skin over the lower ribs persisted after operation. In a discussion on "Internal Secretions" two years ago (reported in the *Clinical Journal*), Horsley described certain anomalous cases of myxedema, with a peculiar excitable mental state, inability to exert, symptoms of heart insufficiency, and fat pads or diffuse skin infiltration. He regarded them as combinations of athyroidism, with a certain amount of aberrant internal secretion, the "dysthyroidism" of Moebius. He advises in treatment almost total removal of the gland, and then supplementing its secretion with thyroid extract. I have under observation for two years and a half a woman who lived abroad years ago, for some time in centers of goiter, such as Geneva and the Pyrenees, and who for years had the nervous and heart symptoms of exophthalmic goiter. There has never been exophthalmos, but at times there is a fixed stare or glare that to me is rather characteristic. For six months the pulse was never below 100, and during attacks of palpitation 160 or more. There are at times remarkably large supraclavicular pads, such as are seen in myxedema, and a diffuse bib-like pad of the same tissue, feeling like half solidified fat, stretches across the front of the neck and down irregularly four or six inches below the clavicles and across the sternum. An apron of the same kind extends across the epigastrium and lower ribs. The case is similar to those reported by Horsley. Of chief interest is the variation of the condition under alternate treatment with rodagen and iodid of iron as described below.

Formes frustes of exophthalmic goiter would require a separate paper. There is danger in labeling too many indefinite nervous affections with this convenient diagnosis, which only a combination with cardinal symptoms should justify. I have seen enlargement of the thyroid, with nervous symptoms and tachycardia, the result of masturbation in young men. Since my attention was called to it by Ortner of Vienna, I have seen the same thing, the result of excessive tobacco smoking in boys. Of interest in considering eye symptoms of the disease are the reports of Arslau, Spiegler, and Holz concerning the occurrence of exophthalmos in adenoid cases and its disappearance after operation. During the last year Dr. C. M. Cooper and I have been testing the value of von Graefe's sign in diagnosis. It was curious to note the occasional development of this and Stellwag, with other symptoms of mild thyroidism, after administration of K I. Our results confirm the observations of Sharkey and of Flatau that the sign is frequently seen apart from thyroid disease. It was particularly common in Italians, probably because of the greater tendency to keep the eyes widely open while talking.

THERAPY.

The goiters seen here rarely demand operation on account of their size. Dr. Rixford, Dr. Terry, Dr. Rosenstirn, however, send me accounts of 20 operations for cystic or adenomatous goiter. The necessity of caution in the treatment of goiter, and particularly exophthalmic goiter, with iodin compounds or thyroid extract has been sufficiently emphasized above; the senseless administration of thyroid extract in large doses for obesity, arteriosclerosis, and other cases of supposed thyroid insufficiency should be discountenanced. Cunningham has attempted to prove that toxic symptoms are due to contaminating cadaveric derivatives and not to the active thyroid principle, and claimed that fresh glands may be given with impunity in exophthalmic goiter. The occurrence of well-marked exophthalmic goiter after administration of K I or iodothyrin in goiter cases would, however, speak decidedly for the theory of hyperthyroidization.

The reports of treatment in myxedema and cretinism are enthusiastic. It is usually not necessary to give large doses of a good thyroid preparation; in cretinism I begin with one grain daily and rarely go beyond 5 grains. Many myxedema patients need only small doses, even at first; some of them can not take more than 2 or 3 grains without disagreeable nervous symptoms. Dr. Ebright tells me of a man of 64 who had severe rheumatoid pains each time the dose was increased beyond two or three grains daily. Bramwell speaks of an acquired intolerance, and mentions a case in which large doses were well borne, but later even 1/20 of a tablet produced marked toxic symptoms. Paresthesiæ and other unpleasant symptoms may be modified by giving Fowler's solution at the same time. Opinions are in accord that preparations representing the whole gland can not wholly be replaced by the active principle iodothyrin. Bramwell, Magnus-Levy, Warner von Jaurenegg report encouraging results in the treatment of endemic as well as sporadic cretinism.

Until recently medical treatment of exophthalmic goiter was limited to electricity, hygienic measures, and a long list of drugs for symptomatic use. It is very difficult to judge of the efficacy of any method of treatment in an affection notoriously so uncertain in course and symptoms. I have seen good results from long-continued faradism, as recommended again of late by Horsley, the patients use the battery themselves for an hour or two daily, fastening the electrodes over the neck, front and back. With the treatment suggested by Wm. Thompson, I have seen no effect in marked cases. Strontium or calcium bromid—30 to 45 grains daily—or the bromid of quinin, 15 to 30 grains daily, as recommended by Forscheimer and Shattuck frequently modify nervous symptoms. Phosphate of soda, suggested by Trachewsky and indorsed by Kocher, or the glycerophosphate of soda, certainly control tachycardia and nervous unrest in not a few instances. Belladonna I prefer to digitalis or strophanthus; salicylates, sulphanilate of soda, intestinal antiseptics have availed little.

Despite reports of Goutschomkov and Mankovsky, endeavors to produce a specific thyreotoxic serum have as yet been abortive. Gley first suggested that deficiency of parathyroid function might be a chief factor in etiology of exophthalmic goiter. MacCallum found the parathyroids four times in eight operations for exophthalmic goiter; twice they were smaller than usual and twice degenerated; in one acutely fatal case none were found. Benjamins found them apparently normal in three cases. Moussu saw no result in one case from feeding parathyroids of cows. MacCallum reports feeding 12 glands daily for some weeks in a case of moderate severity without effect. From evidence yet at command it is not possible to say that the parathyroids in any way influence the affection.

It is not possible to dwell on results of operative treatment, though I am convinced that many cases belong to the surgeon. Five of my cases have gone to operation. In four improvement was almost immediate and the patients have remained well. One woman died four days after operation, with symptoms suggesting parathyroid insufficiency. It has seemed to me that more attention in operating should be given to the statement of Horsley, that division of the isthmus is sufficient to lead to retrogressive changes and shrinking in the rest of the gland. I have had no experience with the *x*-ray treatment as advocated by the Mayos and Beck.

In the last years effort has been made to develop a specific treatment of exophthalmic goiter. Ballet, Enriquez, and Lanz were pioneers in the movement. Lanz suggested that milk of dethyroidized goats might contain substances antagonistic to the exophthalmic goiter poisons. Burghart and Blumenthal from Leyden's clinic first used serum from a myxedema patient with encouraging result, and later introduced "rodagen," a precipitate from the milk of dethyroidized goats. Leyden, in *Die Medicinische Klinik,* reviews results attained and thinks them definitely favorable. Improvement is noted in three or four weeks, but treatment must be continued for months. Kollaritis reports three cases treated four to six weeks with rodagen without effect. Kuhnemann reports betterment in one case under 6 grams of rodagen daily. In 1901 Moebius communicated three cases somewhat improved by serum of dethyroidized goats. This has been put on the market by Merck and is given internally in 5-gram doses every second day, being administered in wine. Moebius has since reported benefit in 2 cases, Schultes in 1, Rosenfeld in 1, and Indermans, Boerma, Hempel, Lomer, Duerig, Peters, and Thienger in others. Thienger gives account of an acute case responding quickly to the serum, of two with improvement, and of one with no result.

Such a new method of treatment must be most conservatively judged. I have had experience with rodagen in three marked cases over periods of four to eighteen months. In one severe case, 6 grams daily were given for four months with no appreciable effect, and the woman was later operated on successfully by Dr. T. W. Huntington. In a woman with marked nervous symptoms, insomnia and tachycardia, all symptoms seemed definitely to improve under five months' treatment with 6 grams daily; the moderate exophthalmos is unchanged, but the pulse rate is normal and the struma is smaller. A third woman has been taking 6 grams daily, off and on, for eighteen months. She had suffered from tachycardia, insomnia and nervous unrest for years. Sodium phosphate, bromids, salicylates, bromid of quinin and electricity did not control symptoms, and she refused operation. She had supraclavicular fat pads and the peculiar skin- infiltrations described above. Rodagen has seemed to control the pulse for months as nothing else did, and she is enthusiastic over its effect on insomnia. After four or five weeks of steady use, she complains of depression and weakness, and has to stop for two weeks. Fat pads increase during rodagen administration, and two or three times the experiment has been tried of giving her iodid of iron in small dose. This each time promptly brings return of tachycardia and nervous symptoms, but modifies skin infiltration. Rodagen would seem to be of some benefit in these cases, therefore, but I would pass judgment only after a long series of cases. My experience with thyreodectin has been too limited to report. Dr. W. F. Cheney mentioned a case in which it seemed to control the heart symptoms. Dr. P. K. Brown tells me of a woman who grew worse rather than better under four or five weeks' treatment.

The whole question of the thyroid and its influence on development, metabolism and decay is a fascinating one. It would be valuable to report more fully the early history of patients with myxedema and exophthalmic goiter, to classify more carefully early heart, digestive and skin symptoms of the latter affection. I have seen two paroxysmal tachycardia cases that developed later exophthalmic goiter. In one woman peculiar general pigmentation with vomiting, diarrhea and weakness had led to diagnosis of Addison; Oppenheim mentions a similar case. I have under observation a man with Parkinson who presents thickening of the skin of face and extremities as described by Fraenkel and Lundborg. A woman who has twice had eclampsia came to me with a large thyroid and symptoms suggesting beginning myxedema; she is interesting in view of the work of Nicholson, Lange and others on the relation of thyroid to eclampsia. The possible influence of the thyroid in California as an etiologic factor in our very common arteriosclerotic and renal affections should be remembered.

DISCUSSION.

Dr. James J. Walsh, New York, stated that he has tried the effect of paratyphoid extract, though without getting very encouraging results. About three years ago Dr. McCallum of Baltimore suggested a connection between the parathyroids and the symptoms of Graves' disease. Many years ago Professor Gley made investigations on this subject, and came to about the same conclusion. It seemed thoroughly justifiable then to try the effect of the drug. Dr. Walsh treated four patients. In two milder cases the parathyroid seemed to be of benefit. In two severer cases, it not only gave no relief, but seemed to make some of the symptoms worse. It is doubtful if the parathyroid extract was entirely pure and free from thyroid material, although every effort was made to secure it in the pure state. It must not be forgotten, he said, that younger patients, that is, those under 25, frequently get better, even with marked symptoms, under almost any treatment. It is surprising to note how severe some of the cases are and how complete the recovery. Intermissions are extremely common, and may well be attributed to treatment when they are only phases of the disease. In older patients intermissions are rarer, and it is on these that new remedies must be tested if there is to be any reliance on the results.

Dr. E. F. Wells, Chicago, said that it has been his fortune to see many cases of exophthalmic goiter, and no patient who had been treated for any considerable time before coming under his observation, but had been given thyroid extract, and invariably with the effect of increasing the symptoms. He is sure that there is an impression in the profession that thyroid extract is the remedy for exophthalmic goiter, and a warning as to the danger attendant on such treatment is eminently desirable. Empirically, Dr. Wells has found that codein is extremely useful in these cases. He gives from one-quarter, one-half or three-quarter grain three or four times a day, and for months with perfect immunity. The patients bear it well. After an experience with this remedy for eight or ten years, he is led to advocate it as the most efficient for the purpose of any which he has any knowledge.

Dr. G. W. McCaskey, Fort Wayne, Ind., emphasizes the importance of noting the spontaneous fluctuations that occur in some of these cases of a very chronic character with any line of treatment and sometimes without any treatment. He has had two patients under observation for a period of ten or twelve years, which have exhibited these peculiarities to a striking degree. At times they appeared symptomatically well, and one of them has remained so for one period of two or three years, but in both cases the characteristic syndrome has infallibly returned. Due allowance must be made for these variations in estimating the value of treatment.

Dr. George S. Whiteside, Portland, said that the type of thyroid enlargement seen in Oregon is a very mild one and much more prevalent among women than men, and more among the young than the old. As a rule, these patients present no symptoms. The condition seems to increase at the time of pregnancy and goes down afterward. Goiter in dogs is not uncommon in Portland. Exophthalmos seems to be the exception in both men and beasts in Oregon, but Dr. Whiteside has heard that it is much more common in California.

Dr. C. R. Grandy, Norfolk, Va., thinks that there are many more cases of enlarged thyroids in the United States than were formerly thought, simply because physicians had not been looking for them. In his own practice he has seen a considerable number of cases. When occurring in young girls he does not do anything for them. There is one class of goiter with a decreased secretion, which, as a rule, occurs in fat women with slow pulses. In such cases thyroid extract would do good. In the other class of cases there is an increased secretion which occurs in nervous people, with fast pulse rates, etc. Here the thyroid extract does harm. Dr. Grandy has seen two rather remarkable cases occurring in women past the menopause, in both of whom hysterectomy had been performed for fibromyoma for several years previously. In one there appeared to be a malignant change in the thyroid. The other woman passed from observation. In both cases there was not enough thyroid secretion; one patient seemed to improve with thyroid extract; the other had some of the symptoms of myxedema.

Dr. J. A. Lichty, Pittsburg, Pa., agreed with Dr. Moffitt that it is a difficult thing to make a diagnosis when there are so few symptoms; and yet he knows of no disease in which an early diagnosis is so essential as in exophthalmic goiter. A great deal of harm may be done in a very short time if the disease is not recognized. There may be several so-called cardinal symptoms, but only these are necessary to make a diagnosis, i. e., rapid pulse, tremor and exophthalmos. If any two of these are present it is perfectly safe to place such a patient on treatment for exophthalmic goiter. If the patients are young girls, who are fond of dancing, bicycling, gymnastic work, etc., they should be warned of the danger and the harm that might result because of an existing exophthalmic goiter. These exercises should at once be forbidden. Dr. Lichty has tried the *x*-ray treatment without any benefit in these cases. During the past ten years he has cured two patients with the rest treatment. He emphasized the importance of an early diagnosis in exophthalmic goiter.

Dr. Christian Jonsson, Clinton, Iowa, said that young people seem to have a tendency to spontaneous recoveries, and that this disease seems to be more dangerous in old people. He has observed that thyroid gland treatment is extremely harmful in most of those cases, and it is his conviction that it should never be used in exophthalmic goiter. The treatment should consist in rest and freedom from worry, besides a tonic and sedative drugs, such as we have in a so-called sumbul tablet, containing iron, arsenic, sumbul, asafetida. In a number of cases this has given Dr. Jonsson surprisingly good results.

Dr. Herbert C. Moffitt, San Francisco, declared that he did not agree with Dr. Walsh that cases of exophthalmic goiter in old people necessarily go wrong. He has seen not a few such patients kept comfortable by routine medical treatment, giving clinical evidence of further thyroid changes and slipping slowly from symptoms of exophthalmic goiter to those of myxedema. He mentioned one case in which stomach and intestinal symptoms were so marked that the affection was considered primarily a stomach one. After instituting the proper treatment the patient, a woman nearly 60, went along well, and is now showing signs of myxedema. The pulse rate is normal and the skin changes are those of myxedema. Dr. Moffitt is of the opinion, in the light of our present knowledge, that marked cases of exophthalmic goiter are helped but not cured by medical treatment, and that such patients should be referred to the surgeon.

REPORT OF COMMITTEE TO AID POSTOFFICE DEPARTMENT IN EXCLUDING OBJECTIONABLE ADVERTISING.*

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WASHINGTON, D. C.
AND
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PHILADELPHIA.

The following details concerning the work of the Postoffice Department, so far as it has involved the drug laboratory, present some of the problems which may be of interest:

THE ROBUSTO CASE.

All members of this Section are probably familiar with the "Robusto" case, full details of which were published in a recent number of The Journal A. M. A. In that report is clearly set forth the ignorance and stupidity of the promoter and the fraudulent nature of the advertisements. One statement in the advertisements is "there is no disease which Robusto will not cure." The would-be patient was led to believe that he was to receive medicines which were progressively increased in strength as the time of treatment continued. It was clearly shown on the witness stand that no such system was in vogue at any time by the promoter. In the case of "Robusto," there was at no time any question relative to the efficacy of the medicines employed, but the gross misrepresentations were abundant on every hand. This case presented numerous problems that we are confronted with in the case of many remedies of a similar character, but each one presents new problems to solve. For example, one promoter will claim that his remedies are new, were invented by him, are applied in a novel way, or that particular combinations produced wonderful results. The most difficult cases we have to deal with, however, are those involving results obtained by electrical appliances. It is very well known that electricity is a valuable agent in assisting in bringing about cures, but just to what extent this can be accomplished is at present largely an uncertain quantity.

OTHER SIMILAR CASES.

A few more cases similar in character, may serve to illustrate.

Dr. Stevens & Co. presented a host of medicines, largely in the form of crayons, with the contention that they were novel, in that the medicinal agent was applied directly to the affected part and in this way brought about wonderful effects. This firm also claimed that they were the originators of murituama, protargol and hyoscin bromid. One of the extremely interesting tactics of this firm was the sending of a strip of "medicated paper," advising the patient to dip the same in his urine and to return it to the company, and from it the company would make a diagnosis and inform the patient relative to the nature and seriousness of his condition. The strip of "medicated paper" proved to be nothing but litmus paper. It is almost beyond conception that a medical man, for there were medical men connected with this company, would stoop to such a downright misrepresentation.

Another firm claims to be able to cure almost all the ills that the flesh of man is heir to by a simple purgative consisting of powdered mandrake, powdered aloes, powdered capsicum and spearmint.

The Force of Life Chemical Co. claims to restore "lost manhood" and "lost vitality" by a progressive treatment consisting of a liquid containing as its chief constituent lecithin, which is present, but an examination of the remedy shows that all the packages are virtually of the same composition. This company claims to cure many infirmities by what is called by them "radium capsules." These capsules are found on examination to be free from radium.

Another great fraud met with is "aquamiel," a product claimed to be made from a Mexican plant, possessing most marvelous healing properties, and in particular stimulating the growth of the mammary gland. An examination of this product showed that it consisted of two strengths, one containing 2 per cent. of alcohol and the other 8 per cent., with 0.5 per cent. of plant extractive, the liquid being colored with caramel and sweetened with saccharin.

A Detroit firm submitted many medicinal agents, among which was a tablet consisting of capsicum, which, according to directions, was to be dissolved in water and applied to the organ as necessity required.

A product called "predigested olive oil" was also met with. The olive oil, however, was not predigested.

"Cupidene" consisted largely of red pepper, cantharides and a bitter principle.

"Ambaline" consisted for the most part of different ammoniacal salts dissolved in water.

"Liquid electricity" was another catchy term. The active constituent of this preparation consisted largely of red pepper, ammoniacal salts and volatile oils in an aqueous solution.

COMPLEXION POWDERS.

We also have to report on complexion powders and complexion tablets. One complexion powder consisted wholly of Rochelle salts. A complexion tablet consisted of extract of nux vomica, calcium carbonate and reduced iron. The unfortunate part connected with this remedy is that its promiscuous distribution was the cause of the death of a child. This was brought about by the present possibility of transmitting remedies of this character through the mails without requiring them to be marked in any way so as to inform the recipients of their poisonous nature.

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* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

RULING OF THE POSTOFFICE DEPARTMENT.

For some time, it was ruled by the Postoffice Department that the transmission of poisons through the mail was prohibited. It appears pressure was brought to bear on certain officials, and as a result the following ruling was put in effect:

"Proprietary articles of merchandise, not in themselves unmailable, such as fancy soaps, tobacco, pills, tablets or other preparations such as are used by the medical and pharmaceutical professions, put up in fixed quantities by the manufacturer, for sale by himself and others, which may be sealed in such manner as to properly protect the articles, but to allow examination of such package in its simplest mercantile form, will be accepted for mailing: provided, that poisonous articles, or articles containing poison, and not unmailable, shall be accepted for mailing only when the package bears the label or superscription of the manufacturer of or dealer in the article mailed."

Under this ruling, it is possible to send any poison through the mail provided it is used by the medical and pharmaceutical profession and is put up by a physician or pharmacist in fixed quantities for sale by himself or others. It seems that it would be well to call the attention of the postoffice authorities to this matter and inform them it is the law in almost all states that poisonous remedies of the above character must be marked with poison labels indicating their dangerous character. Of course, it probably would be unjust to withdraw the privileges of the mail entirely from remedies of the above character, but the public ought to be protected in some way by suitable labeling at least.

"Skin-bleachers" have also received some consideration at our hands. The active constituents of these preparations consist for the most part of corrosive sublimate mixed with such articles as glycerin, tincture of benzoin and water. The effect of such a mixture is well known to all physicians. It is claimed by the promoters that they are able by the use of these mixtures to turn a black skin white.

The colored race comes in for an additional "soaking" by firms who claim to make curly hair straight by ordinary ointments and oils.

OTHER FRAUDULENT REMEDIES.

One of the most interesting fraudulent remedies claiming to restore "lost vitality" is "Yousouf's celebrated Turkish salve," which an analysis showed to be nothing but a preparation of petroleum containing approximately 20 per cent. of beeswax.

The action of methylene blue is taken advantage of in many cases, and one firm claimed that if the patient would forward a colored "medicated cloth" (which proved on examination to be nothing but cheese cloth), after moistening the same with his urine, they would submit the colored cloth to an examination and report the nature of the disease to the patient.

INTERPRETATION OF THE LAW.

We wish to call attention to several different points that have been encountered and which at present can not be acted on, first, because of the marked division of opinion among the medical profession, and, second, because of the present construction placed on the law governing the use of the mails by the Department of Justice.

The first point is illustrated by a specific case involving a solution containing a very minute quantity of an organic copper salt, glycerin, phosphates, and, the manufacturer claimed, heroin, which could not be found. The greatest value of this remedy, it was claimed, resided in the very small percentage of copper it contained, which, it was held out by the manufacturer, was a remarkable cure for consumption. An investigation among the best medical authorities showed that they were all ignorant regarding the usefulness of an organic copper salt in the cure of this disease. Literature, however, showed that a number of remarkable cures had been effected by several French physicians, and there was nothing to do but to give the manufacturer the benefit of the doubt and permit him to continue his practice.

Attention is called to the fact that there are at present many remedies that are highly fraudulent and which are relieving the poor people of much of their hard-earned money. The concerns manufacturing these, however, can not be successfully attacked because they have transacted their business in such a way as to come within the rulings of the Department of Justice in the distribution of their remedies.

This ruling is somewhat as follows:

"The privilege of the mail can be withdrawn from parties only when they are using the mail for the distribution of their goods or the reception of money directly from their patients, or both."

There are many that are taking advantage of this situation, chief among which is that much-advertised and highly deceptive product known as "Liquozone."

It might be well to consider the desirability of placing these conditions before our legislators, but the chief difficulty is the point made by certain government officials that many of our senators and representatives are using remedies of this character in their own homes and believe that they have merits.

It would be a gracious thing on the part of the American Medical Association to encourage the Postmaster-General and the Secretary of Agriculture in prosecuting this line of work and to inform them of hearty support and the full co-operation of the Association.

It is difficult to say approximately what amount of money has been thrown into proper channels by withdrawing the privileges of the mails from many dishonorable concerns during the past two years. This, of course, has brought some ill feeling on the part of certain manufacturers who are recognized as of good standing, some of whom have come out and declared that these firms to whom they were supplying goods were legitimate and honorable, and that they could see no reason why they should be interfered with in any way.

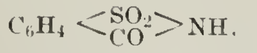
THE INFLUENCE OF SACCHARIN ON THE DIGESTIVE ENZYMES.

S. A. MATHEWS AND HUGH McGUIGAN.
CHICAGO.

Saccharin is of interest both from physiologic and economic points of view. Its extensive use as a sweetening agent in canned fruits and vegetables, in syrups, chewing gums, confections, etc., makes it of general dietetic importance. It is also a very common ingredient of lotions, especially of mouth washes. Its use in the diet of diabetics, where sugar can not be tolerated, gives it some importance in medical dietetics. The fact that the food laws of many states prohibit its indiscriminate use, and consider it more or less as a harmful adulterant, makes it incumbent on the pharmacologist to investigate its action on the body; the purpose of the investigation being to find out whether or not it exerts a deleterious influence.

CHEMISTRY AND PROPERTIES OF SACCHARIN.

Saccharin is the imido derivative of ortho-sulphobenzoic acid and is represented by the following formula:



$$C_6H_4 < \genfrac{}{}{0pt}{}{SO_2}{CO} > NH.$$

It dissolves with difficulty in cold water and slightly more in hot water. Its sodium salt is readily soluble in water at all temperatures. Saccharin possesses an extremely sweet taste, given usually at from 300 to 500 times as sweet as cane sugar. It is this characteristic sweet taste that makes its use so widespread. Most commercial manufacturers of the substance make much of this point in advertising their product.

For the detection of saccharin it is extracted with ether, or with a mixture of ether and light petroleum spirit. After evaporation of the solvent the intense sweet taste is characteristic. As a confirmatory test a part of the residue is treated with concentrated KOH or NaOH and the dish heated until the mass fuses and is maintained thus for about half an hour. By this means the saccharin is converted into salicylic acid. This can be recognized by its crystalline form, melting point and reaction with ferric chlorid. The reactions on fusing can be represented thus:

I.

$$C_6H_4 < \genfrac{}{}{0pt}{}{SO_2}{CO} > NH + 2H_2O \longrightarrow C_6H_4 < \genfrac{}{}{0pt}{}{SO_2OH}{COOH} + NH_3$$

II. $C_6H_4\,(SO_3)\,COOH + 2KOH \longrightarrow C_6H_4\,(OK)COOK + H_2SO_3 + H_2O$

On acidifying and extracting with ether, free salicylic acid is liberated from the salt. If salicylic acid is formed in this way outside the body, we thought there was a probability of its formation within the body. It is well known that many reactions which require high heat and the aid of strong acids or alkalies outside the body can take place readily when subjected to the energy of the body cells. On the other hand, benzol compounds in general leave the body in other well known forms. In our experiments, which are given below, we found that not a trace of salicylic acid was formed and that saccharin left the body entirely unchanged.

METHOD OF DETERMINING THE CONDITION IN WHICH SACCHARIN LEAVES THE BODY.

A solution of saccharin (garantose) was prepared by dissolving a known amount in water, by the aid of sodium carbonate. Just sufficient carbonate was used to dissolve the garantose and at the same time keep the reaction of the solution neutral, or very slightly alkaline. The solution was made to a known volume and injected slowly into the femoral vein of a dog. It was allowed to remain in the circulation from two to six hours, and then was washed out through the kidneys with a diuretic —M_8 Na_2 SO_4. The urine was collected from the ureters, and the amount of saccharin determined by converting it into salicylic acid. By this method we found that when we used from .25 grm. to .5 grm. garantose we could obtain 90 to 95 per cent. of the theoretical amount of salicylic acid in the urine. As commercial saccharin is not chemically pure it is necessary as a control to determine the amount of salicylic acid it will yield. The amount of the diuretic necessary to wash out all, or practically all of the saccharin can be approximately determined by taste. When about 150-200 cc. of the solution of urine and diuretic has been collected from the ureters, the fluid is practically all Na_2 So_4, and fails to give the test for saccharin. It is then made to a known volume and aliquot-portions used in the analysis.

ACTION ON THE BLOOD.

A neutral solution, prepared as above, and containing .25 grm. was injected into the femoral vein. After two hours some blood was withdrawn and its action on hydrogen peroxid tested. Normal blood from the same animal was used as a control. The results are as follows:

I.	II.
2 c.c. blood (sacch.)	2 c.c. Blood (normal).
10 c.c. water.	10 c.c. water.
2 c.c. H_2O_2.	2 c.c. H_2O_2.
Gas given off in 30 minutes:	
12 c.c.	13.5 c.c.
Gas in 2 hours:	
14 c.c.	14.0 c.c.

The only action here is a slight retardation of the oxidation.

In a second experiment normal blood was taken from the carotid artery and dry saccharin added to it.

I.	II.
2 c.c. blood.	2 c.c. blood.
0.1 gm. sacch.	3 c.c. H_20_2.
3 c.c. H_20_2.	
Gas in 10 minutes:	
18 c.c.	27 c.c.

Here the larger amount of saccharin causes a marked diminution in the oxidative power. On standing a longer time only a slight change was found in the relative and absolute volumes given in the table.

ACTION ON THE OXIDATION OF SUGAR IN THE BLOOD.

Every animal can oxidize a certain amount of a monosaccharid if it is injected directly into the circulation. The total amount that can be oxidized before sugar appears in the urine can be called the oxidizing coefficient of the animal. This amount will, of course, vary with different sugars, depending on the ease with which the sugar can be oxidized. In other work one of us (McGuigan) found that levulose is very much easier oxidized than any of the other common sugars. Consequently in this work we started with levulose. If the oxidizing power of the animal is lessened by the injection of saccharin—a fact which we have shown fully—then less sugar can be oxidized by an animal with saccharin in its blood than can be oxidized by a normal animal. To test this point we selected two dogs of about equal size and age. Dog 1 was used as a control. A solution containing 15 grms. levulose and 1 grm. sodium bicarbonate made to 500 cc., was injected into the femoral vein at the rate of 10 cc. every 5 minutes. Sugar commenced to appear in the urine when 250 cc. had run in. No sugar appeared before this time. The same strength of sugar solution with the addition of 2 grms. of garantose to 750 cc. of the solution, was run into the femoral vein of Dog 2 at the same rate as in Dog 1. Sugar appeared in the urine in this case when 140 cc. had been injected. If we assume that the dogs possessed the same oxidizing power, then clearly the addition of garantose materially lessens the oxidative power. This is corroborated by the rest of our work and is strikingly brought out by the work of Bornstein[1] We are aware that most diuretic salts and many anesthetics will produce a condition of glycosuria, and have been careful to avoid the use of such. In all this work chloretone was used as the anesthetic. In this last experiment no diuretic was used.

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[1] Zeit. für klinische Medicin, vol. 40 p. 208. This reference also contains a résumé of the literature of the work on saccharin.

INFLUENCE OF SACCHARIN ON THE FERMENTATION OF SUGAR.

The urine containing levulose from the above experiments did not ferment with yeast. A solution of pure levulose was then tried and it fermented rapidly. If, however, a slight amount of saccharin was added, fermentation was entirely inhibited. Garantose is only slightly soluble in water; it is yet sufficiently soluble to prevent fermentation. This point is worthy of consideration in diabetic diets.

INFLUENCE ON THE WORKING OF SALIVA.

The influence of saccharin on the diastatic action of saliva is more pronounced than on any other enzyme of the body. Even traces exert an enormous retarding influence, while larger quantities completely arrest the action of the enzyme. This is shown by the following experiments:

	I	II	III	IV	V
Dry sacch. grms.	.2	.1	.05	.01	0
Saliva, c.c.	2	2	2	2	2
Starch paste, 2 per cent., c.c.	5	5	5	5	5

The solutions were mixed in vitro and placed in a thermostat at 40 degrees C. The results were as follows:

V—All digested in 8 minutes.
IV—All digested in 16 minutes.
III—All digested in 40 minutes.
II—Only trace digested in 360 minutes.
I—No digestion in 360 minutes.

The point when digestion was completed was indicated by the iodin test. No digestion was shown by failure to reduce Fehling's solution.

ACTION ON PEPTIC DIGESTION.

A 1 per cent. neutral solution of saccharin was prepared and the following experiments carried out:

	I	II	III	IV	V	VI
Pepsin, 2 per cent. acid reaction, c.c.	4	4	4	4	4	4
Sacch. sol., c.c.	5	4	3	2	1	0
Water, c.c.	1	2	3	4	5	6
Fibrin, grms.	2	2	2	2	2	2

The above were shaken in test tubes and placed in the thermostat at 40 degrees. Results:

VI—All digested in 45 minutes.
V—All digested in 60 minutes.
IV—All digested in 85 minutes.
III—All digested in 100 minutes.
II—All digested in 130 minutes.
I—All digested in 350 minutes.

The retarding influence here is very apparent.

ACTION ON TRYPTIC DIGESTION.

Experiments were carried out with commercial pancreatin; with fresh pancreatic extracts and with pancreatic extract mixed with extract of the duodenum (dog). The proteolytic action of pancreatin and extract of the pancreas alone was only slightly affected by the addition of small amounts of saccharin. The diastatic action is materially decreased by the addition of saccharin, though not to so great an extent as the diastatic action of saliva. The most striking results are obtained when extract of the pancreas and duodenum are mixed.

An extract of the pancreas and duodenum of a dog was prepared by grinding the organs to a pulp and macerating 30 minutes with a 5 per cent. $Na_2 CO_3$ solution. The extract was then filtered and added to fibrin as follows:

	I	II	III	IV	V
Filtered ext., c.c.	5	5	5	5	5
Sacch. dry grms.	.1	.05	.02	.01	0
Fibrin, grms.	1	1	1	1	1

The mixtures were placed in the thermostat at 40 degrees C. and observed at short intervals, with results as follows:

V—All digested in 45 minutes.
IV—All digested in 105 minutes.
III—Almost digested in 270 minutes.
II—About half digested in 270 minutes.
I—Practically no digestion in 270 minutes.

No observations were made again for twelve hours, when the same condition was found as at the end of 270 minutes. These results indicate clearly enough the inhibitory action of the substance on pancreatic digestion.

ACTION ON THE OXIDATIVE POWERS OF MUSCLES AND GLANDS.

The muscular and glandular tissues of the body will all liberate oxygen from hydrogen peroxid. The amount of oxygen liberated by a given amount of the dried tissue is roughly proportional to its oxidative powers. If saccharin is added, the oxidation is lessened; if sufficiently large amounts are added, the oxidative power is entirely overcome. This influence is illustrated by the following experiments:

The tissues were prepared by grinding the fresh material to a fine pulp and macerating in 95 per cent. alcohol for 24 hours. It was then filtered, washed with alcohol and ether and dried in the air. After drying it was ground very fine and run through a fine sieve. The first experiment was with rabbit's muscle, 2 grms. in each:

	I	II	III	IV
Dry sacch., grams	.1	.05	.01	0
Water, c.c.	5	5	5	5
H_2O_2, c.c.	2	2	2	2
C.c. gas in 5 minutes	0	0	.8	2.5
C.c. gas in 10 minutes	0	0	1.5	3.4
C.c. gas in 30 minutes	0	0	2.0	5.5
C.c. gas in 60 minutes	0	0	2.2	5.8

In a second experiment rabbit's liver was prepared in the same way; using .2 gms. gave the following results:

	I	II	III	IV	V
Saccharin, grams	.2	.1	.05	.01	0
Water, c.c.	5	5	5	5	5
H_2O_2	2	2	2	2	2
Gas in 5 minutes	0	0	2	4.5	12.0
Gas in 10 minutes	0	1.5	3.0	6.0	15.0
Gas in 30 minutes	0	2.5	3.8	8.0	17.2
Gas in 45 minutes	2	2.6	4.8	9.6	18.0
Gas in 60 minutes	2	3.0	6.5	12.4	19.0

In Experiment 3, dog's muscle and liver were treated in the same manner, with the following results:

DOG'S LIVER, TWO-TENTHS GRAM IN EACH.

	1	II	III	IV
Sacch., grams	.1	.05	.01	0
Water, c.c.	5	5	5	5
H_2O_2, c.c.	2	2	2	2
Gas in 5 minutes	0	0	1.5	4.0
Gas in 10 minutes	0	0	2.3	5.5
Gas in 20 minutes	0	.5	4.0	8.5
Gas in 40 minutes	0	1.0	5.2	9.5
Gas in 60 minutes	0	1.8	6.8	9.6

DOG'S MUSCLE, TWO-TENTHS GRAM IN EACH.

	I	II	III	IV
Sacch., grams	.1	.05	.01	0
Water	5	5	5	5
H_2O_2	2	2	2	2
C.c. gas in 5 minutes	0	0	1	2
C.c. gas in 15 minutes	0	0	1.5	2.5
C.c. gas in 30 minutes	0	0	2.0	3.0
C.c. gas in 45 minutes	0	0	2.5	3.5

From these results it is evident that saccharin in small amounts retards oxidation, and in larger amounts prevents oxidation both in herbivorous and carnivorous animals. These results agree fully with those of Bornstein.[1] who found that the administration of saccharin caused an increased elimination of total nitrogen. The amount of nitrogen in the urine was less than before the using of saccharin, but the amount in the feces was greatly increased, so that the average of the two was greater than before using it. This means either a decreased hydrolysis or a decreased absorption of proteid, or both. As a matter of fact, Bornstein proved that absorption was materially lessened by the use of saccharin. He also observed that on those days in which he used it he suffered from headache and other symptoms of gastrointestinal derangement.

The experiments recorded above confirm the work of Reigler,[2] although it seems that we noted a more powerful action than that reported by him. This is undoubtedly due to the using of different brands of saccharin. In our work we used the "garantose" handled by Merck & Co. Reigler used that manufactured by Fahlberg, List & Co. The commercial products vary in strength, and to obtain uniform quantitative results a chemically pure preparation must be used.

PHARMACOLOGY OF SACCHARIN.

Saccharin is used in medicine solely on account of its sweetening properties. As we have shown, it has a retarding influence on the action of the digestive juices, especially that of the saliva and pancreas. Its prolonged use would, therefore, tend to produce digestive disorders. When injected into the circulation of an animal it produces depression and stupor, followed by labored respiration similar to asphyxia. This is evidently due to its inhibitory action on the enzymes in the blood and also in the tissues in general. This action very probably accounts for the headache and other symptoms which follow its use. Like many of the other benzol compounds, it may be considered a general protoplasmic poison, in that it inhibits nearly all the fermentative processes of the body. Consequently it interferes with and decreases the general body metabolism.

LEPROSY, BLASTOMYCOSIS, LUPUS, SYPHILIS, ALOPECIA AREATA, LUPOID SYCOSIS.*

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Professor of Diseases of the Skin, Rush Medical College.
CHICAGO.

LEPRA TUBEROSA.

Case 1.—J. G., male, aged 20, a native of Russia, came to this country six years ago, and has since that date lived in one of the western states contiguous to Illinois.

History.—Three years ago he began to suffer from a series of febrile attacks, accompanied by chills and by eruptive symptoms of an erythematous type, which were supposed to be syphilitic in character and for which he was subjected, without remedial results, to a course of specific treatment. Aside from the symptoms referred to, he has enjoyed fair health. There is no history of venereal disease; he has occasionally indulged in tobacco smoking; his family record is good. His father, who accompanies him, is a healthy-looking, though somewhat undersized, Polish Jew.

Examination.—The face of the patient is seen to be the seat of a diffuse infiltration, chiefly conspicuous about the nares, the brows, the lips, and the ears. The infiltrated area, though diffuse, is studded here and there with smaller and larger tubercles. There is marked alopecia of the brows. On the forearms, hands, legs, and the dorsum of the feet, there are larger and smaller poorly defined areas of punctate pigmentation; and here, as also where no such coloration exists, there are areas distinctly insensitive to hot and cold applications and to the prick of a pin. On the extensor surface of the left wrist is a large, coin-sized keloid developed from a burn which, he states, at the time of its infliction, produced no pain. The ulnar nerves are enlarged and somewhat corded, but the ascending great auricular nerve is not involved. This special nerve is said to be implicated in nearly 90 per cent. of similar cases, and its induration is readily demonstrated in the patient whom I shall next present to you. There is a deep, funnel-shaped ulcer in the sole of the left foot corresponding in character with the symptoms of *mal perforant du pied.* This young man has had frequent attacks of epistaxis. The mucous membrane of the nasal cavity is studded with small pin-head-sized and larger tubercles and irregular, shallow ulcers, thus explaining largely the catarrhal symptoms of which he complains.

This patient was first examined on Dec. 4, 1904, at which time a small nodule was excised for examination. The section when stained exhibited numerous lepra bacilli and the same micro-organisms were thickly dispersed in a smear of the nasal secretion.

Points of Special Interest.—Though presenting typical and unmistakable symptoms of tubercular leprosy, with an admixture of lesions commonly found in anesthetic types of that disease, this patient presents several points of special interest.

His youth and the relatively brief period of time during which he has suffered from the disease may be named first in order. These promised well if an appropriate therapy were instituted. He was placed on chaulmoogra oil, beginning with five minims in a glass of milk administered three times daily, the dose being progressively increased to nearly a teaspoonful. With this were administered ferruginous tonics; and a carefully directed hygiene was insured.

The results have surprised all who have watched the progress of the case. The general appearance and health of the patient have greatly improved. The skin is fairer, less muddy, less infiltrated. Over the brows the tubercles are now scarcely evident. The catarrhal symptoms are less severe. The only feature of his case in which there has not been corresponding improvement is the plantar ulcer. This we shall treat surgically.

Second: The origin of the disease. The youth almost certainly contracted leprosy in Russia. Instances of this malady, originating in the United States, are, indeed, few. My colleague, Dr. Ormsby, has reported one such case, the patient having been exhibited to this clinic last year. In his published report of this case, Dr. Ormsby makes reference to the case of the child of a leprous patient presented by me before this clinic several years ago, in which it seemed highly probable that the child, a native American, contracted the disease, presumably from the father, in the state of Nebraska.

Third: The demonstration of lepra bacilli in great numbers in the nasal secretion would seem to argue in favor of the opinion long sustained by Dr. Morrow, of New York, that most cases of leprosy are contracted by the medium of nasal secretions. It should be added, however, that in most of the leproseria visited by me the organs, apart from the skin and viscera, most frequently involved were without question the eyes. The number of blind lepers in any asylum devoted to this class of patients is pitifully large.

Case 2.—This patient, F. B., aged 27 years, a native of Australia, left his home seven years ago to become a sailor.

History.—In the course of his voyages he has visited Ceylon, India, Norway, Sweden, China, and the West Indies, and has lived an irregular sexual life in all these countries. At one time he was associated with a bunk-mate supposed to have the same disease and with whom he occasionally exchanged clothing. It appears, however, that before he left Australia an odd-looking "patch" appeared on his back, which may possibly have been the first symptoms of the disease with which he is now affected. There is a leper asylum in the vicinity of his native town. His history, prior to the development of the present disease, is not significant. His parents are healthy and free from symptoms of his ailment. The tip of the left index finger has been removed as the result of a traumatism. His functions are regularly performed.

Examination.—At the present time, the dorsum of the trunk is seen to be symmetrically, though irregularly, overspread with circular and ovoid patches having a faintly erythematous central area surrounded by annular bands from one to two centimeters in width, pigmented in yellowish-brown shades. There are about a score of these visible, varying in size from the section of a hen's egg to the palm of a hand; some of them are insensitive to both superficial irritation and to cold and heat. There are other areas of anesthesia where the pigmentation and color changes are absent, as, for example, about the popliteal spaces, but more particularly over the posterior aspect of each forearm from the elbow to the ulnar side of the hands as far as the digital borders. The anterior surfaces of the thighs and the left patellar region are equally insensitive. The nerve trunks in both arms are corded and tumid; the great auricular nerve (as explained in the case of the patient previously presented) is distinctly thickened and indurated. There are a few pea-sized nodules, subcutaneous in situation, discernible in the skin of the forehead. Here, however, as in the skin covering the temples, the ears, and the alæ of the nose, the integument is more or less evenly infiltrated. Making allowance for the characteristic color of the skin of the native Maori, the hue is of a deep mahogany shade and glistens as if artificially oiled. The expression of the countenance is characteristically dejected. The reflexes are exaggerated; the mucous membranes apparently are not involved.

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[2] Archiv. für Exp. Path. u. Pharmacologie, vol. 35, p. 306.

* A clinical lecture delivered before the Visiting Alumni of Rush Medical College at the Commencement of 1905.

This leprous patient first applied for treatment at the clinic in February, 1903, and since then at regular intervals has been under our observation. Lepra bacilli were readily recognized in sections of tissue; the diagnosis was thus assured. His disorder is predominantly of the anesthetic type.

Treatment.—His improvement during the first year was pronounced and in a high degree satisfactory. The treatment pursued was largely hygienic and by the administration of tonics. For the last year, however, during which time he has been absent from the city, he has manifestly deteriorated in health. The leonine facies of lepra is becoming pronounced; he suffers from vague pains; is somewhat cachectic and has lost flesh. It is a source of regret that he was not placed at once on the chaulmoogra oil, which we purpose now to administer in the largest tolerated dose, as in the case of the patient last examined.[1]

BLASTOMYCOSIS.

Case 3.—W. K., a Lithuanian, aged 34, male, laborer, weighing 160 pounds, married but childless, has a fairly good family history. Three brothers and one sister are living, in good health; two sisters are dead of some disease unknown.

History.—He has suffered for one year from a lesion somewhat below the left popliteal space. This lesion is an irregularly oval ulcer, 4½ by 2½ inches in dimensions, with its long axis at right angles to that of the limbs. This is a typical blastomycotic patch, the presence of innumerable blastomycetes having been demonstrated with the microscope. The organisms are now growing in cultures of several generations. As the peculiarities of these lesions have been made the subject of a vast amount of description and illustration, I shall content myself with pointing out the chief peculiarities here visible, merely adding that none of the pictorial representations of the disease as it affects the skin is more classical in its features than the patch now before you.

The surface is beset with irregularly massed verrucous and papilliform projections, uniformly elevated, and no part markedly projected above the general level of elevation. The edge of the patch is formed by a raised ridge, sloping gradually to the surrounding sound skin, the outer surface of this sloping border being thickly beset with exceedingly minute typical abscesses containing, when explored with due precautions, pure cultures of double contoured organisms, each having a central or laterally placed vacuole, and all showing budding outgrowths, the daughter organisms being both smaller than, and in cases as large as, the mother body. In general, the exposed surface is hemorrhagic, bleeds readily on gentle friction, and here and there is slightly crusted from desiccation of the purulent secretion it furnishes, though as the dressings have been removed prior to bringing the patient into the arena, the general aspect of the patch as we now see it is florid.

General Discussion of the Disease.—This disorder has been named the "Chicago disease," for the reason that more cases have been reported in this city than in any other of the world, though the first studies of the malady were made in patients observed by Busche and Buske in Germany and by Gilchrist in Baltimore. The scientific men of Chicago, and of other American cities as well, have diligently but vainly sought the reason for the enormous preponderance of the disease in this city.

One of the most significant and imperative of the questions which have arisen in this connection relates to the fatality which has of late befallen the victims in these Chicago cases, now numbering more than forty in this city alone. The first instance reported by us justified the name originally given to the disease by Gilchrist, of Baltimore, viz., "blastomycetic dermatitis." But the occurrence, under our observation, of cases in which not merely the skin, but also the viscera were involved, cases, in fact, in which the skin was secondarily attacked after organisms plainly had been demonstrated as of earlier origin in the liver, spleen, or kidneys, cases going on to a fatal termination, and in which, even after a first cutaneous expression of the malady, there was later systemic infection, revealed the subject in an entirely novel light. They presented for solution a new problem. Were these cases in any way related to those recognized by our colleagues in California and described by them under the titles, "protozoic infection," "coccidioidal infection," etc.? In all the California patients there had been a fatal issue; but the organisms in the human body in these sufferers never formed buds, but invariably reproduced by sporulation. We are now closely watching two subjects of the disease in whom there are symptoms pointing to a speedily fatal issue; one of these cases, for the first time in our experience, occurred in private practice.

The originally highly vaunted treatment of blastomycosis, by the administration of iodid of potassium internally, is without question of value. That this drug possesses an inhibitory influence on the evolution of the organism and at times completely suffices to destroy its activity can not be questioned. A few patients, without doubt, have been thus relieved. In many others, and in those cases resulting fatally, the medication has proved of temporary value only. In some of the fatal cases, intercurrent disorders, tuberculosis more particularly, has been responsible for the issue. The study of these phenomena is as yet in its infancy.

TWO CASES OF ERYTHEMATOUS LUPUS.

Cases 4 and 5.—Of the two women now presented, one aged 35, is married and has suffered from a facial disease for two years; the other, unmarried, aged 29, has presented symptoms of the same affection for sixteen years.

Development of the Lesions.—In the first instance, the lesions have developed from a single patch on the left temple, which at first was a reddish disc, slightly elevated, scale-covered, and never discharging. Gradually over the bridge of the nose, the scalp, the cheeks, and in a less degree over the upper chest, similar roundish, flattened, scale-covered discs have developed. Those on the scalp have resulted in distinct depressions of the surface without complete loss of hair in the atrophic areas. In the case of the younger woman, similar roundish, scale-covered discs are exhibited over the face and also within the left ear between the tragus and the antitragus. A few smaller but similar discs are visible near the border of the scalp on the forehead. Both patients, treated by my associate, Dr. Quinn, have been greatly improved by radiotherapy and the use of the Pick jelly, which can be highly praised as a local application in the lesions of this character.

Remarks.—These are typical illustrations of erythematous lupus, a disease which has never yet been identified with tuberculosis of the skin, seeing that very rarely have tubercle bacilli been recognized in the tissue. Yet lupus erythematosus is a disease in which, as the French long have taught, curious, and in certain groups of observations, remarkably close relations are sustained by it toward tuberculosis. There are few clinicians of experience who have not seen generalized tuberculosis develop as a sequel of lupus erythematosus; and in other instances the two affections have unmistakably coexisted. In yet others absolutely no proof of tuberculosis of the skin or other organs can be adduced when lupus erythematosus has developed with classical symptoms. The common-sense view of these questions suggests that both in tuberculosis of the skin and in other conditions in which from any cause a diminution has been wrought in the resistance-power of the economy, the skin undergoes this singular metamorphosis. Hutchinson and other English writers have laid stress on the fact of the frequency of these lesions in faces that have been much exposed to the weather; indeed, at times in those which have been wholly, or in part, frozen. Certainly it is significant that in most instances of the affection, first, the face, which is pre-eminently exposed to vicissitudes of the weather, is most often involved (cases of generalized erythematous lupus with grave symptoms are exceedingly rare); second, the face is affected rarely in infancy and childhood, but most often when the maturity of the body is nearly attained; in other words, when the face is, in its early experiences, most exposed to out-of-door accidents; third, women in slight preponderance with the delicate skin of the face unprotected by a beard, are somewhat more often disfigured in this way than men.

The old method of attempting to remove these patches by caustic treatment has been generally, though not wholly, abandoned. It has been asserted that radiotherapy, in these instances, is without value, but a great error is involved in such an assertion. Many of the discs wonderfully improve under judicious exposure to the *x*-rays; and in all cases a protective treatment accomplishes more in the way of cosmetic effects than any caustic method hitherto devised.

VERRUCÆ ACUMINATÆ OF THE ANUS.

Case 6.—This lad, aged 15, has indurated and enlarged inguinal, postcervical, and epitrochlear glands, the relics of a fading syphilitic exanthem over the skin of his body, and gives a history of recent patches in the mouth.

Examination.—Two months ago he noticed a soreness about the anus, and then the lesions now exposed to view were recognized. These increased in size with great rapidity. When carefully inspected, it is seen that a group of venereal warts surrounds the verge of the anus, the entire mass being as large as a butternut, the individual warts being tufted, florid, secreting a thin, offensively smelling mucopus. As usual in similar instances, the warts are pointed, and in appearance resemble the comb of a cock.

I call special attention to the infundibuliform shape of this anus, the orifice of which, instead of being, as should be expected in so young a subject, neatly closed by the aid of the sphincter, is readily made sufficiently patent to admit a large thumb.

Remarks.—To the credit of the class of persons annually frequenting this clinic, it can be stated that this is one of the rarest of observations made in this ampitheater. I can not recall a similar instance in many years. The patency of the anus here is due to unnatural practices with a person of the same sex as the patient. The French, who have had a large experience of similar cases, call attention to this striking feature of the infundibuliform anus; and attention is directed to it here for the purpose of placing on guard every practitioner confronted with a similar case. Chancres of the anus are often, though not invariably, produced in the same way, exception being made in the case of women, in whom, on account of the anatomic features of the anogenital region, such an accident may result from venereal, though not from unnatural, practices.

Verrucous lesions of this sort, whether syphilitic or blennorrhagic in origin, it should be noted, are especially frequent in the very young. The vulva of a nurse girl, 16 years of age, lately examined here, was quite obscured to the view by similar growths. She had been infected on the finger by a syphilitic child for whom she had been caring. Venereal warts of the progenital region in both sexes, are, however, seen also in the third and fourth decade of life, but the larger growths, springing rapidly to full evolution, most often originate in the second decade of life, and in girls more often than in boys.

TWO CASES OF ALOPECIA AREATA.

Cases 7 and 8.—These two patients, both male, both married, each 30 years of age, exhibit circular areas of baldness on the skin of the scalp, the patches being well defined, free from evidences of inflammation of every sort, and destitute of scales, crusts, or other evidences of disease, save that the scalp in the denuded areas is of an unduly whitened color. The patient on the left has noticed his disease for two months; the other, on the right, has suffered for four months. Each gives a similar history, first of a loss of hair over limited area not larger than a small coin; later there was an enlargement of the affected patch, and the appearance of new spots equally denuded in other regions of the scalp. These are typically evolved instances of alopecia areata, a disease as old as the time of Celsus, whose name was first associated with its lesions.

General Discussion of the Disease.—The valuable researches of Sabouraud respecting the bacterial origin of the malady, the unquestioned occurrence of small epidemics of the affection where the evidences of contagion have been apparently irrefutable, and the general suggestiveness of the appearance of the victim of the disease, have strongly influenced a large number of scientific men to ascribe to it a parasitic origin. The arguments cited on the other side, that, viz., in favor of the neurotic origin of the malady, are numerous and not to be ignored. First, no typical evolution of such patches in sound individuals has resulted from intentional inoculation of pure cultures of the micro-organisms asserted to be the effective cause of the disease. Lesions, it is true, have been thus produced; but these fall short of betraying classical symptoms of alopecia areata. Second, a fact abundantly demonstrated in scores of cases exhibited in this clinic during the last few years, traumatism of the skull (blows, falls, etc.), have repeatedly brought about these losses of hair; and the same may be said of intense nervous strain, domestic grief, and grave exhaustion of the nervous centers. One of our recent patients, a child, was shocked by a scream that brought on temporary unconsciousness, the hair falling typically in due time after; in yet another instance, a boy who had suffered from classical symptoms of alopecia areata suffered from a lightning stroke which left him insensible and, according to the statement of his attendant, "black in the face" for twenty minutes. He had prompt return of the hair after the effective shock of the nervous centers.

In most of the clinical cases seen here, whatever the origin, antiparasitic treatment with scrupulous attention to the hygiene productive of value to the nervous centers, in the most cases, has set aside the chief danger, that, viz., of complete and remediless loss of all the hairy filaments of the body. The larger number of such incoercible cases occurs in private practice, the fact being possibly due, in the well-to-do classes of society, to the greater frequency of the stress and strain of modern life in large cities. The most important point in the forecasting of the future in these subjects concerns the age of the patient. After the thirty-fifth year of life, severe baldness of this type may be remediless.

Locally, we employ brisk stimulation of the bald surface, and, when the areas are not too large, gradual application to each of iodized phenol, creosote, and remedies of that class, always limiting the area attacked at a sitting to a few centimeters. We also employ with advantage the Finsen light, applied over small areas in successive sittings, so as to produce a characteristic reaction, as in the local management of lupus vulgaris. In all cases in which it is not contraindicated, there should be brisk friction of the body surface daily, not neglecting the spine, after cool salt-water sponging; a tonic treatment, both dietetic and medicinal; and relief from nervous strain.

LUPOID SYCOSIS.

Case 9.—This patient, male, a fish-packer, married, aged 41, without a history of significance in connection with his present disorder, has suffered for nine years from a disease of the region of the beard which during the time named has been at times better and worse. He uses tobacco in moderation, both by smoking and chewing. The disorder first affected the left side of the chin, from which point it gradually extended until at present the entire bearded region is involved. The subjective sensations are those of itching and burning.

Examination.—On close inspection, it is clear that a somewhat active inflammatory process concerns the upper lip and the chin, which are evenly and symmetrically involved in a reddish infiltration dotted with minute pustules, each of which is pierced by a hair shorn in the process of shaving so as to leave for inspection a blackish stump at the apex of each pustule. The redness is due in general to a perifollicular halo about each hair-pouch, the proximity of each to its neighbors producing the general appearance of redness of the involved area.

This is the common picture of sycosis vulgaris, the absence of trichophytosis being demonstrable even without aid of the microscope, by the absence of bald areas in the bearded region, whence hairs have fallen in most well-defined instances of true "barbers' itch;" by the absence of the characteristic "lumpiness" of the affection last named (a feature due to the mass-ing together of follicles invaded by the large-spored ringworm); and also by the general smoothness and symmetry of the lesions invading the chin and lips, a feature rather common in the usual type of sycosis vulgaris, that due to coccogenous invasion of the hair follicles. To this extent the symptoms presented are sufficiently common.

When the cheeks of this patient are examined, the picture presented is wholly different; in fact, the inexpert might be led to suppose that the disease in these parts differs from that which is actively invading the central portions of the bearded face. Here on the cheeks the redness is less distinct, the pustules are few, the tissues otherwise altered. The skin is thrown up into unsightly ridges; and between these, without appearance of arrangement in order, are sunken valleys, these last suggesting to the eye that the skin here is atrophied. The irregularly corded, ridged, and furrowed condition of the cheeks is one which is as characteristic of what is termed lupoid sycosis as are the phenomena recognized in the lips and chin of the ordinary vulgaris type.

Nor is this all. One rarely sees a distinctly developed and obstinate sycosis of lupoid type (Unna's *ulerythema sycosiforme*) without noting that the eyelids, as here, are the seat of a folliculitis, the hairs of the lids, especially of the lower lids, projecting from pouches distinctly involved in the same process as that visible in the actively progressing disease of the bearded region. The eyes are encircled, thus, with pinkish-tinted rims, a feature at first sight suggesting that the patient has granular lids; the symptoms, however, differ *in toto* from those of chronic conjunctivitis. These male patients, red-eyed and red-bearded, with chronic inflammation besetting the periphery of their hair follicles, present a complexus of symptoms that are especially interesting.

General Discussion of the Disease.—Here are some of the questions that arise in this connection:

Why do young male adults with the common symptoms of staphylococcic infection of the skin of the face, usually acute in type and readily relieved by appropriate treatment, not slide into conditions of sycosis in which the microscope only reveals staphylococcic and streptococcic invasion of their follicles? Why do pustular dermatites of the bearded region not invite attacks of sycosis? Why do most patients with the ordinary forms of sycosis vulgaris escape such severe manifestations as those displayed in the case of the patient before us? It is not easy to make scientific responses.

In the case of lupoid sycosis various hypotheses have been framed to explain the conditions present. By some it has been assumed that the disorder is simply a variety of lupus erythematosus affecting the region of the beard. An objection to such an inference is the fact that not rarely this part of the face is actually invaded with the occurrence of patches which then are distinctly characteristic of lupus erythematosus, and not at all similar to those of lupoid sycosis. It has also been claimed that the malady is one *sui generis*. In a few instances coming under our observation we have discovered the presence of tubercle bacilli. I am of opinion that the disease, in some cases at least, is one of the rare manifestations of tuberculosis in the skin.

Treatment.—The therapy of the skin in these cases is one that taxes to the utmost. No means at our disposal compare in value with radiotherapy. We shall treat the active symptoms in this patient with the usual shaving, shampooing, and application of the Wilkinson salve, containing sulphur, tar and green soap, at first in the strength of one part to ten of a simple unguent; later, if productive of good results, with the ointment in full strength. It is always needful in these cases to set aside the results of a catarrh, the secretion from the nasal passages in many cases lighting the disease afresh in the upper lip, whence it spreads. Tobacco usage is always prohibited; cold sponging of the body is regularly practiced; and bichlorid lotions regularly employed before the application of the pastes to the surface; these latter being always kept in contact with the affected face by means of lint spread with the remedy to be applied and bandaged over the part until improvement is demonstrated.

CASES ILLUSTRATIVE OF SYPHILIS.

I show you four patients, each exhibiting a different phase of the evolution of syphilis.

Case 10.—Man, unmarried, aged 28, gives a history of a progenital sore a few weeks ago, the date being indeterminate.

Examination.—He now suffers from mucous patches of the mouth, general adenopathy, and a generalized papular exanthem, covering the entire body surface. The picture is one sufficiently common in all clinical experience. The absence of subjective sensations, the discrete papules of the kind described in the text-books as the "small papular syphiloderm" in groups, their distribution, color, and symmetry taken in connection with the non-cutaneous symptoms make the diagnosis relatively facile.

Appearance of Syphilitic Eruptions.—I call attention to the fact, not sufficiently emphasized, that by the color of an eruption alone, apart from other symptoms presented, it is not safe to distinguish the character of an exanthem. The color of a cutaneous eruption varies from hour to hour with the special condition of the patient; it is not the same in a brunette and a blonde; it is not equally tinted in the face, the lower extremity, and the anal region; it is unlike in the palm of an infant and over the buttocks of an aged man. When one hears it said that as soon as the color is seen the diagnosis became clear, a shadow of suspicion crosses the mind. Syphilis has been described as an "imitator" of other diseases; it would be, perhaps, nearer the truth to declare that many non-systemic affections of the skin resemble those induced by syphilis.

All said and done, however, taken in connection with the character of the lesions exhibited, the browns, the purples, and the deeper reddish hues—the combinations producing what has been described as the "color of raw ham"—are often conspicuously displayed in the skin lesions of lues.

Case 11.—The next patient, a man, aged 45, has suffered from this disease for six years; and his symptoms are widely different from those presented in the younger patient just examined.

Examination.—The left leg is the seat of a circular, well-defined, clean-cut ulcer, with sloughy floor and purulent secretion; while here and there over the lower limbs, deeply pigmented circular patches of gummatous infiltration are displayed chiefly over the left lower extremity.

Remarks.—Between these two patients there is scarcely a point of close resemblance. Only the comparison of observations collected by many men during many years of experience has taught us the varying shades and pictures of the malady in multiform expression, at different periods of its curious career.

Case 12.—A woman, married, aged 28, complains of eruptive symptoms involving the face and hands.

Examination.—Here are symmetrical groups of papules, which do not itch, which have never exuded a serous discharge, and which are chiefly annoying by reason of their unsightliness. They involve the left side of the face near the nose—a common site—and the palms of the hands, the groups rarely exceeding the size of a half-dollar. In places they are covered with a thin, brownish-tinted crust. This patient has been infected, presumably by her husband, some two or three years ago.

Remarks.—It is the practice in this clinic to refrain from asking married women whether they have or have not had syphilis. Their answers to such a question, for the most part, would be valueless. We must know more than they, after inspecting their objective symptoms and securing such tags and ends of a physical history as they can furnish. By far the larger number of them all are innocent of sexual wrong-doing and are the victims of the faithlessness of their husbands, or, what is too often the case, of the infection of the latter prior to marriage.

Case 13.—A woman, aged 35, presents still a different picture.

History.—The patient has been married 18 years, and gives the following history of her pregnancies: First, a living child, now 16 years of age; second, a miscarriage at the fourth month; third, a child, which died three hours after birth; fourth, a miscarriage, the period of pregnancy in which it occurred not stated. She is suffering from severe cephalalgia, with nocturnal aggravation, and exhibits a tibial node, due to gummatous osteoperiostitis productive of intense pain at night and interfering with her sleep.

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The American Medical Association has undertaken the publication of a medical directory of the United States and Canada which will be called the

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It will appear early in 1906.

It is desired to make this directory absolutely accurate and reliable.

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The American Medical Association is preparing material for a general directory of the Medical Profession of the United States and Canada. The book will be issued early in 1906. It will contain only the names of legally qualified physicians and graduates of recognized medical schools. It will furnish exactly the same information in regard to each physician whether he is or is not a subscriber to the book. It will contain a list of the important hospitals, medical colleges and societies, medical practice laws of each state, and other information of interest to physicians. It is desired that this directory shall be absolutely correct, and to this end personal information is requested from each physician practicing in the United States or Canada. It will be necessary to furnish this information once only, as it will be preserved in permanent form in a Biographical Card Index of the American Medical Profession. The following data will be given in the Directory, regarding each physician:—Name, year of birth, literary degree received in course, Medical College and year of graduation, address, with office address and office hours in towns over 50,000.

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(Over)

Remarks.—This last patient illustrates the importance of securing in all suspicious cases a record of the issues of every pregnancy. Such a record not only throws light on the fact of infection, but often also points with definiteness to the approximate date of the accident. In the case of this patient, the first pregnancy resulting in the birth of a healthy child now living suggests that during the first period of her married life both she and her husband were free from this disorder. Then followed a suspicious miscarriage at the fourth month and the sequels of the pregnancies following point to infection occurring between the two first conceptions; that is, twelve years ago. The present condition of the patient can be sufficiently explained by assuming that syphilitic infection occurred at that time. The cephalic pains which she endures are possibly due to an endarteritis obliterans, not sufficient to produce the graver symptoms of nervous syphilis, but capable of engendering the cachexia from which she obviously suffers. They are a menace to her future if they be not relieved, for while the hemiplegias and tabetic phenomena of late syphilis are more common in men than in women it is not to be forgotten that women, though less frequently, do actually endure the same affliction.

General Discussion of This Disease.—Why is it that when the virulence of syphilis is most potent and energetic, that is, in its earlier periods, when its manifestations are commonly most abundant, active, and impressive, the menace to the health, especially in the item of involvement of bone, nervous tissue, and viscera, is less formidable than later in the career of both the disease and its subject? The answer, given by those who yet hold to the old doctrines formulated by Ricord, is practically derived from the schemes of railway travel. The train starts on a time schedule from the point of departure, and only arrives at the more distant stations when a given period of time has elapsed. The objection to such a scheme, though widely accepted in the past, is admitted even by the French writers who were obliged to coin such phrases as "galloping" and "precocious" for those instances of syphilis in which what should be "late" symptoms of the disease develop "early." The truth seems to be that it is when the system is most taxed in the careworn periods of life, when child bearing has pressed its heavy burden on the woman, often otherwise overwrought, when the worry, the care, the burden of poverty, and the stress of life begin to tell on the reserve force of the body, that the toxins of the disease become most dangerous, even though possibly less potent.

Metchnikoff is of the later school of investigators who think that they have discovered the effective germ of syphilis. Schaudinn's *Spirochœta pallida*, recognized in eight cases of syphilis in man and anthropoid apes, never in non-syphilitic subjects, stained both by the Giesma and the Marino method, is believed to be the parasite long sought. Its discovery in experiments conducted in the Pasteur Institute of Paris seems to lend support to the position. We can only at this time repeat with Lerrede: "The great question seems to make progress."

Special Article

IMMUNITY.

CHAPTER XXV.—Cholera.

Concluded from page 789.

Prophylaxis.

The rational prophylaxis, which was founded by Koch on a knowledge of the biologic characteristics of the comma bacillus, has proved of great efficiency. The essential points are the following: 1. Immediate bacteriologic examination of the stools in suspicious cases. 2. Absolute isolation of patients, in a hospital whenever possible. 3. Thorough disinfection of the stools, linen, room and all articles with which the patient has been in contact, including water-closets and privies. 4. Continued isolation during convalescence until the stools are free from vibrios. 5. Repeated bacteriologic examination of the stools of those who have been in contact with cholera patients until their freedom from vibrios is assured. 6. Frequent examination of the water supply at different points in order to detect the occurrence of water infection. 7. In case water infection exists, exclusion of the water from all domestic uses, and the institution of means to rid the water of infection. This may be done in the case of infected wells, but in the case of large systems reconstruction may be necessary for future protection. Water for household use should be boiled. Kolle compares the conditions in Germany and Russia during the epidemic of 1892-4. In Germany, where Koch's principles of prophylaxis were rigidly observed, about 10,000 cases occurred, 9,000 of which were confined to Hamburg, whereas in Russia, where precautions were not enforced strictly or generally, 800,000 cases developed during the same period.

Vaccination.

Protective inoculation has shown itself to be of distinct value for prophylaxis against cholera. Ferran, a Spaniard, first practiced vaccination on a large scale in 1884, although little definite knowledge of the value of the procedure resulted from his work. He is supposed to have used impure cultures. Haffkine introduced protective inoculation on a large scale in India, and up to 1895 had inoculated 40,000 persons. Following Pasteur's method with anthrax, he used two vaccines. Vaccine 1 was a culture which had been attenuated by prolonged growth at 39 C. Vaccine 2, which was administered five days later, was a virulent culture. The living organisms were used in both vaccines and the injections were given subcutaneously. The local and general symptoms were mild. Instead of living cultures Kolle has proposed the use of virulent cultures which have been killed by exposure to a temperature of 58 C. for one hour. The vaccine is preserved by the addition of 0.5 per cent. phenol. In the Japanese epidemic of 1902 this method was used on an extensive scale. The incidence of disease among the uninoculated was 13 per cent., among the inoculated 0.06 per cent.; the mortality among the uninoculated was 10 per cent., among the inoculated only 0.02 per cent. The disease, when it occurred in the inoculated, was of a mild type. A single injection of from 2 to 4 mg. of a killed agar growth was given subcutaneously (cited by Kolle). Strong has proposed the use of the products of autolysis of the cholera vibrio as a vaccinating substance, a method founded on the observations of Neisser and Shiga in relation to typhoid, and of Conradi and Drigalski in relation to dysentery. The local and general symptoms are said to be of a mild type. The method has had no practical application.

Natural Immunity.

From what was said above in connection with the so-called cholera carriers, it is evident that not all are equally susceptible to infection with cholera. The conditions on which such cases of individual immunity depend are not known conclusively, although it is often intimated in a general way that a strong bactericidal power of the body fluids, or a high phagocytic power on the part of the leucocytes, is responsible for it. The gastric juice, on account of its acidity, offers a barrier to the passage of living vibrios into the small intestines. It is nevertheless evident that the barrier in many instances is not a serious one. Organisms which are ingested with water may pass rapidly to the intestines without being affected by the acid of the stomach, or when taken with food they may be buried in the latter and hence not come in contact with the gastric secretion. It seems probable that the intestinal epithelium has a certain resistance to invasion which is most manifest in the case of those who do not become infected in spite of the presence of the organisms in their intestines. Natural immunity is said, by Germans, to be one which is directed against the bacteria rather than against the endotoxin. Proliferation of the organisms in the intestinal epithelium is thereby prevented. Poorly nourished individuals, the very young and the very old are particularly susceptible. Other gastrointestinal disorders, in the presence of an epidemic, predispose to infection. Defects in the intestinal epithelium, or a decreased resistance of the latter, may afford conditions which are favorable for invasion.

Active immunity, as that which results from infection or from protective inoculation, is characterized by the appearance

Acquired Immunity.

of bactericidal amboceptors, agglutinins and specific precipitins in the serum. It is now widely believed that acquired immunity depends on the presence of the bactericidal amboceptors in the circulation and body fluids, although Metchnikoff holds, on the other hand, that it depends to a large degree on an increase phagocytic power on the part of the leucocytes. According to Pfeiffer and Marx, the antibodies are produced in the blood-forming organs. An attack of cholera confers immunity of prolonged duration, although it is not always absolute.

Passive immunity is readily induced in animals by the injection of anticholera serum. As in other instances, it is of short duration, however. Doubtless the same condition may be induced in man. Besredka has proposed mixed active and passive immunization by way of protective inoculation, using killed bacteria which have been saturated with the specific amboceptors.

Serum Therapy and Agglutination.

Serum therapy has been no more successful in cholera than in typhoid fever. The antitoxic serum of Roux and others has had no practical trial. According to Achard and Bensaude, the serum of cholera patients, on the third or fourth day of the disease, agglutinates the cholera vibrio. However, they used the serum in dilutions of 1-20, and in this strength even normal human serum may be agglutinating (Pfeiffer and Kolle, cited by Paltauf). Convalescents even after seven months may show an agglutinating power of from 1/100 to 1/120.

The bacteriologic examination of the stools is the most reliable means of early diagnosis (see above).

Clinical Reports

ERYTHEMA MULTIFORME FOLLOWING VACCINATION.

LOUIS M. WARFIELD, M.D.,

ST. LOUIS.

Considering the great number of persons vaccinated, the comparatively few complicating eruptions that occur is not a little surprising. As has been often remarked, many eruptions occurring in the course of a vaccination period are undoubtedly accidental, while others are undoubtedly due to the vaccine virus.

A condition sufficiently interesting to report came under my notice not long ago.

Patient.—Miss J. H., aged 23, a trained nurse, had never been vaccinated previously, and has always enjoyed exceptional health. Her appetite and digestion are good and menstruation regular. She had had the usual mild children's diseases when young, but had never had any eruptions. For about a year she has been very slightly troubled with constipation. Previous to her vaccination she had been in perfect health and had no gastrointestinal disturbance nor any symptoms of even a mild illness.

Vaccination and Result.—She was vaccinated July 29 on the upper left arm. On August 1, before she noticed anything at the site of the vaccinated area more than a slight itching, she saw irregularly shaped bright red spots on the forearm. These spots soon appeared on the lower legs, and shortly both arms from shoulder to wrist, and both legs from thigh to ankle, were thickly covered. These spots soon became firm, nodular and painful. There was no itching or burning. She felt sore all over. There were pains in the knee joints, and wherever the lesions were close to the bones they were very painful to the touch.

Examination.—August 4. She is a well-developed, well-nourished woman. The mucous membranes were a good color, tongue somewhat coated, pulse slightly accelerated, temperature 100 F. Over the extensor surfaces of the arms and legs there was an eruption consisting of rose-red irregularly-sized and shaped spots, level with the surface of the skin, bright red, somewhat infiltrated areas, varying in size from that of dimes to five cent pieces, and firm, deeply seated nodules, perceptibly raised above the surface of the skin. There were no vesicles, nor was there umbilication of the nodules. The nodules situated over bony prominences were quite firm and exquisitely painful to the touch. Some were of a typical violaceous hue and appeared shiny. There was no definite line of demarkation seen between the lesions and the surrounding skin.

Subsequent History.—New crops came out, following the order of ripening described from day to day, until August 8. In the meantime, the older lesions grew softer, less painful and more purplish in color. On August 8 vesicles appeared at the site of the vaccination. These ran a normal course. On August 10, three small vesicles appeared on the right forearm; by the next day these had disappeared, leaving small red spots with slightly umbilicated centers. By August 14 the rash had entirely disappeared and only a few brownish stains were visible. During the period of the eruption there was slight fever but not more than could be attributed to the effects of the vaccine itself. The only inconvenience was the general soreness, especially in the knees and elbows.

Remarks.—That this was a typical case of erythema multiforme is certain. The whole course of the eruption was short, but the lesions and their appearance in crops were typical. Most curious were the great tenderness of the nodules and the feeling of soreness over the arms and legs, especially around the knee and elbow joints. There were no lesions on the backs of the hands or dorsal parts of the feet. As usual with erythema multiforme, the eruption showed itself before the vesiculation of the vaccinated area.

LAPAROTOMY UNDER LOCAL ANESTHESIA ON A PATIENT, AGED SEVENTY-TWO.

R. L. IGEL, M.D.

LEAVENWORTH, KAN.

I wish to report a very interesting case that came under my care July 31, 1905.

Patient.—A woman, aged 72, was suffering from an ovarian cyst of seven years' standing, which had grown to such an extent as to fill the whole abdominal cavity.

Examination.—I found her in terrible pain, resembling that of obstruction of the bowels. An enema was given, with no results, and I knew that cathartics would only increase the trouble. I therefore determined to relieve the bowel that I was sure was being obstructed from the pressure of the cyst by tapping the tumor.

Operation.—She was taken to the hospital, a few blocks from her home and was prepared for operation. Chloroform and ether were contraindicated by her age and exhausted condition, so I began by injecting a small amount of a 4 per cent. solution of cocain three inches below the umbilicus, in the median line, just under the skin, and followed with my knife, making a clean incision. The adipose tissue was then gone through and separated until the peritoneum was reached, and this tissue was cocainized in like manner in front of the knife. This incision brought the cyst into plain view. I then tapped it with a small needle, to allow shrinkage enough to grasp the walls with forceps, after which a trocar was inserted and the liquid, which measured four gallons, was allowed to run off slowly. I made a complete exploration of the abdomen and of the adhesions and withdrew as much as possible of the cyst from the walls of the abdomen, so as not to allow of any infection, washed the sac out with normal salt solution, replaced it and allowed one-half pint of the solution to remain. I also filled the abdomen with normal salt solution and did as thoroughly aseptic an operation as possible. The peritoneum was closed with four stitches and the abdominal wall with two stitches. The patient talked to me in the meantime and turned herself on one side to help me drain the cyst. Her pulse and heart were constantly watched and she was allowed to take continuous sips of cool water.

Result.—She was removed from the table to a ward. She did not complain during the operation, nor since. The bowels moved freely of themselves. That night she took two cups of tea and slept the whole night, and has been doing well ever since. She experienced no shock whatever.

Remarks.—I did not allow any stimulants, such as strychnin or brandy, to be used. Morphia gr. 1/4, atropin gr. 1/150 was given at the start. I entered the abdominal cavity with the intention of giving my patient every possible chance, as I did not wish to infect the abdomen with a probable infectious tumor and, therefore, to endanger her life. As a general anesthetic was contraindicated it was necessary to use local anesthesia, but, in all, probably not more than 40 minims of a 4 per cent. solution of cocain was used.

The case appeals to me, for the ease in which the abdomen was entered, the absence of bad after-effect and of shock, the entire absence of any discomfort from the operation, and the wonderful manner in which the patient is continuing to recover.

A FATAL CASE OF TETANUS OCCURRING WITHIN SEVENTY-TWO HOURS OF INJURY.

J. B. TYRRELL, M.D., Sc.M.
WATERVILLE, MINN.

Patient.—W. D. G., boy, aged 10.

History.—On Tuesday, Aug. 15, 1905, at about 6 p. m., the boy fell from a stageing to the ground, a distance of about 8 or 10 feet, and sustained a compound fracture transversely through the lower epiphysis of the tibia, the bone ripping the soft parts and stocking for a distance of 4 inches above the site of the fracture and sticking to the ground.

Treatment.—He was picked up and carried to his home, where the wound was cleansed thoroughly, care being taken to leave no foreign particles in it; hydrogen peroxid was used finally. The bone was replaced and the leg put in a temporary splint dressing. The subsequent treatment consisted of irrigation of the open wound and the liberal use of hydrogen peroxid.

Subsequent History.—On Saturday, August 19, his father, who is a physician, told me the boy had had during the previous night what appeared to him as premonitory twitchings, and on that day, Saturday, there was slight rigidity of the muscles of the neck and inability to open the mouth wide.

Antitetanic serum was ordered for him. Intraneural and intraspinal injections were advised, but were refused. The serum was given subcutaneously, and the paroxysms were controlled by hypodermics of morphin every few hours. His symptoms progressed rapidly, and death occurred at 2 p. m.. Aug. 23, 1905.

Remarks.—There is a question in my mind as to the time of inoculation in this case. Was he infected at the time of this injury or at an earlier period? About a week or ten days previous to this injury, according to the boy's mother, he stepped on a rusty nail, running it into his foot. The boy did not let his father know of this, and had his mother dress the wound, which healed promptly. He received this wound in practically the same locality in which the leg was fractured—not over 50 feet away. Was he infected with the tetanus bacillus at this time? I think it is possible, but I believe it is not probable in this case.

New Instrument

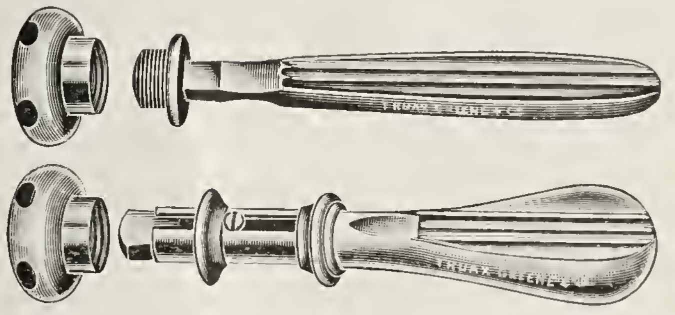
MURPHY BUTTON OBTURATOR AND APPLICATOR.

A. H. CORDIER, M.D.,
KANSAS CITY, MO.

Having used the Murphy button for many years and having met some difficulties in its application or introduction I have devised an instrument that in a great measure overcomes all the obstacles thus far met. The method usually employed heretofore to introduce the button has been to seize the rim of either half of the button with a pair of hemostats, thus forming a handle to facilitate the introduction.

On several occasions, not only in my own work but in the work of other surgeons, the grasp of the forceps has injured the thread of the button or has dented the circumference of one-half the button so that when the two halves have been applied and were ready to be shoved together they would not fit thus necessitating the removal of the second half of the button and the introduction of a new button in the place of the one injured by the forceps. One blade of the forceps must of necessity clasp the outer side of the stem of the button so that the purse string suture is tied over the end of the forceps, thus interfering with the proper adjustment of this suture, so that when the forceps were removed the button would drop into the intestine.

Again, while the button is being introduced the gases and other contents of the intestine are escaping thus increasing the dangers of an infection in the field of the operation. Frequently in tying the purse string around the stem of the button the mucous membrane would be crowded beyond the end of the stem so that when the approximation of the two halves was attempted this mucous membrane was found to be in the way. The forceps do not give a sufficiently firm handle to force the button into the viscera, and to overcome the objections met with in the application of the button, I have devised an instrument to be called the Murphy button obturator and applicator. This instrument is very simple in its use and facilitates very materially the introduction of the button. It requires three sets for the three sizes of the Murphy button. The obturator that is used in the female half of the button is simply a handle with the flange projecting where it comes in contact with the end of the stem, the portion projecting into the button is threaded to screw into the stem of the button, thus the opening in the button is effectually closed during its introduction; there is a good firm handle to hold to and the projection rim prevents the puckering string from crowding mucous membrane beyond the stem of the button.



The obturator that is used in the other half of the button is composed of a hollow canula with a movable center piece. This piece at the end that is introduced in the button is wedged shape so that when the projecting portion of the canula is introduced into the half of the button and the movable piece is pulled on it spreads the slit end of the canula thus holding the button firmly. After the two halves have been introduced and are ready to be pushed together all that is necessary is to unscrew the obturator in the female part of the button and to press on the handle of the movable piece in the canula, instantly releasing the hold on the male half of the button.

The application of this instrument is far more simple than this description would seemingly imply. A reference to the accompanying illustration will give the reader a better idea of the obturator and applicator than the description.

Overlying an Infant Punished as Manslaughter in England.—Thousands of cases of death from overlying take place in Great Britain during a year. In certain cases coroners have often wished to obtain a verdict of manslaughter against the mother, but public opinion is opposed to such a course. Even in cases in which the coroner's jury has brought in this verdict it is usually set aside by the grand jury finding "no true bill." A case has at last occurred, however, in which the mother has been punished. At the Chester assizes Judge Phillmore sentenced a woman aged 31 years to twenty-one months' imprisonment with hard labor. Eleven days after confinement she took her child to bed with her while in a drunken state. She slept heavily and overlay and suffocated the infant. The jury found her guilty of manslaughter by an act of gross and culpable neglect.

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THE TECHNIC OF PERCUSSION.

One of the first things taught to students of medicine in the clinical course is the art of percussion. Along with inspection, palpation and auscultation, percussion is a fundamental method of examination. Unfortunately, it is too often improperly taught, and even when the teaching is good it is surprising to find how few students perfect themselves in its application. Since the advent of laboratory methods, too, it is to be feared that less attention is paid to physical methods than is their due. Microscopic examinations of sputum and blood are extremely helpful, but the physician who relies on such methods alone and who does not practice assiduously the time-honored physical methods will make but a sorry mess of his work.

It matters but little which method of indirect percussion one uses—finger on finger, finger on plessimeter, or hammer on plessimeter; the important matter is to learn thoroughly one of the methods or all of them, so as to obtain trustworthy results. The percussion by finger on finger, however, has many advantages. In the first place, one has his armamentarium always with him, while hammer and plessimeter are constantly being left behind, lost, or broken. In the second place, the sound yielded by the finger itself is less disturbing than that of the plessimeter. In the third place, the sensations of touch and resistance felt by the finger percussed are often as important as the percussion sound, and they are missed when hammer and plessimeter are used. Finally, one can control the pressure of the finger against the surface to be percussed more easily than that of the plessimeter, and this is of as great importance in eliciting distinctions of percussion-sound as is the force of the blow of the percussing finger itself. It is easier at first, it is true, to secure fairly satisfactory results with hammer and plessimeter. Percussion by finger on finger is undoubtedly harder to learn, but once skill is acquired the method for most purposes is superior to all others.

Like every art, percussion can be perfectly learned only by long experience. There are, however, a number of small details of technic which, if observed, help greatly in the acquisition of the art. The error made by all students at the beginning (and it is to be feared by many teachers in the so-called percussion courses) is an attempt to produce loud sounds, sounds that convince the neighborhood. Nothing could be more disastrous to success. Even when it is desired to elicit the so-called "deep dullness" in contradistinction to "superficial dullness," a very slight blow is required, only a little stronger than the delicate stroke needed to demonstrate the latter. The clinician who percusses so that an audience in an amphitheater hears the sound undoubtedly makes a noise, but nothing accurate in the way of percussion limits can be so demonstrated. When the superficial dullness of the heart, for example, is to be outlined on the thoracic wall, the lightest possible percussion should be used. The moment one percusses strongly the vibration is propagated beyond the local limits and a mixed sound is produced. Indeed, the skilled diagnostician in localizing superficial limits on the thorax percusses so lightly that over an area of superficial dullness practically no sound is heard; then the moment he moves from the solid organ to an air-containing one the same percussion stroke produces a distinct resonance. In no other way, to cite another example, can the so-called "lung-liver limit" be accurately localized. With the light percussion described—so-called "superficial percussion"—the areas of solid organs on the thoracic wall can be demonstrated with ease, and small pleuritic effusions, pneumonic patches, or pulmonary infarcts which on ordinary rough-and-ready percussion would be entirely overlooked are readily localized. The accurate determination of the deeper dullness, for example, the deep cardiac dullness (so-called relative dullness) is far more difficult than the determination of superficial dullnesses; but here too the rule is to use the lightest percussion stroke that will elicit the distinctions which exist. In determining superficial dullness, the plessimeter finger should be applied as lightly and evenly as possible, without pressure, to the surface to be percussed; in eliciting deeper dullness the plessimeter finger may be more firmly applied.

In this indirect percussion only one finger of each body surface, a point of great importance in the produc-hand for making the blow, the index, or preferably, the middle finger of the left hand for receiving it (plessimeter finger). The plessimeter finger, with volar surface applied to the part to be percussed, must be everywhere in close contact with the surface and should be placed parallel to the boundary line which one desires to determine. The percussing finger (its nail closely pared) is flexed and the blow so given that the axis of the terminal phalanx, when the pulp of the finger strikes the plessimeter finger, is perpendicular to the body surface, a point of great importance in the production of the right sounds. The hand and fingers should be held loosely, anything like an awkward, tense or cramped attitude being avoided. The blow is made solely by flexion of the wrist, the forearm remaining stationary; it should be light, as has been said, short and elastic.

If medical students could be carefully supervised until they have acquired the technic of percussion and have learned to have real confidence in the results obtainable by it, instead of being compelled, as they often are, to carry into their practice that distrust which is engendered by false methods and insufficient training, the art would be far more highly valued and more widely practiced than it is even to-day. Fortunately, exact training in the method of percussion is now being insisted on in our best medical schools; moreover, those of us who failed to get it may easily acquire a good method if we patiently set about it with the aid of one of the many good text-books now available.

REGIONAL DISEASES AND THE SESSIONS OF THE AMERICAN MEDICAL ASSOCIATION.

When medical associations were first formed in this country one of their principal avowed objects was the gathering of data in order to enable physicians to understand the various diseases which occurred in different parts of the country. At that time, over a century ago now, meteorologic conditions were considered to influence disease types, much more than is now known to be the case. In spite of this, however, there is a very interesting variation in disease in different parts of the country, and the annual sessions of the American Medical Association—held each year in a different section—serve to call special attention to this. When the Association met at New Orleans two years ago, special attention was given to the intestinal parasitic diseases of the southern states, and great light was thrown on the practical side of the diagnosis and treatment of these affections.

The recent session in Portland, Oregon, has enabled us to add to our knowledge of types of disease which exist on our western coast. It was interesting to find that practitioners along the Pacific coast are universally agreed that the various forms of vascular degeneration are more common in the far western states than in other parts of the country or in Europe. From San Francisco, particularly, it was reported that precocious arteriosclerosis is a rather common affection. This is true not only as regards the ordinary thickening of arteries, but also of the occurrence of the advanced stages of arterial degeneration as represented by aneurismal dilatation of various arteries. Aortic aneurisms are particularly common, considering their rarity ordinarily, and are found to affect not only the arch of the aorta, but also the abdominal aorta. There is no doubt about the diagnosis of these cases, for quite apart from the fact that the diagnosis was made by careful, conservative clinical observers it was confirmed in most cases by means of the *x*-rays, and under ordinary circumstances this leaves very little room for doubt in these conditions. A report of undue frequency of premature arterial degeneration on the Pacific coast would have caused little surprise had it been made thirty years ago. At that time the pioneers of the early days in San Francisco, the forty-niners and men of the early fifties, were still alive. These men presented in their life histories most of the etiologic conditions which are usually considered to bring about arterial degeneration. Most of them had been very hard workers and had gone through serious privations in the pioneer days. Nearly all, under the trying circumstances of their lives, had used alcohol to excess, and not infrequently with an irregularity of food consumption and a lack of nutritious material likely to make alcohol even more serious in its effects than usual. Not a few of them indulged in other vices and suffered the usual effects which were much more liable to occur under the low moral conditions of the early days.

In addition to the above diseases, many affections of the thyroid gland are reported[1] as existing quite commonly, not only along the southern Pacific coast in California, but also in the Pacific northwest. It is reported that a certain number of animals with enlarged thyroids have been observed in Oregon and in the southern part of Washington. Ordinary exophthalmic goiter occurs apparently with more frequency in and around San Francisco than in the large cities in other parts of the country. It would seem not unlikely that if these two conditions of arterial degeneration and thyroidism really exist they may possibly be connected with one another. The over-action of the heart so common in exophthalmic goiter may very well be the cause of the arterial degeneration seen in other cases. It is possible that while other symptoms are only slightly manifest the effect on the heart may be very marked and this in turn may cause the over function of the arteries which ultimately leads to sclerotic conditions. It is to be hoped that the attention which has been directed to the diseases of the Pacific coast may result in new light being thrown on the etiology of these important conditions.

THE EFFECT OF TOBACCO IN HEALTH AND DISEASE.

Next to alcohol, there is probably no substance used by man which has been so villified and condemned as tobacco. Certain intemperate temperance advocates from time to time have attempted to pass laws prohibiting the use of certain forms of the weed in various states, and in some instances anticigarette ordinances have been placed on the statute books. Probably the smokers in such states believe themselves much persecuted, when, as a matter of fact, there were at one time European countries in which smoking was illegal, and in Turkey the offence was, for a short period, punishable by death.

The attitude of certain in authority regarding the practice of smoking during the early days of the habit is shown by the words of James I. of England, expressed in his celebrated "Counterblaste to Tobacco." He describes smoking as "a custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in the stinking black fumes thereof nearest resembling the horrible Stygian smoke of the pit that is bottomless." It can not be denied that in modern times large numbers of medical men have been addicted to the use of tobacco, perhaps a larger percentage than of men in general. The consumption of this substance in its various forms reaches an enormous figure each year, and one is tempted to ask, If it is so harmful, why do not physicians see more of its ill effects? As a matter of fact, there is singularly little literature of a convincing nature bearing on its evil effects, if we except one or two conditions like the tobacco heart and tobacco amblyopia.

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[1] Herbert C. Moffitt: "Affections of the Thyroid in California," The Journal A. M. A., this issue, p. 837.

A perusal of a series of papers concerning the effect of tobacco in health and disease, contributed by a number of eminent English authorities,[1] leaves one with the feeling that there is still much to learn regarding this substance. The evidence brought forward as to its action on the various organs seems to bring out sharply a few facts, the most important of which is that tobacco is undoubtedly injurious during childhood and youth. The evidence that it is to any great degree injurious to the mature adult is much less strong. There is, on the other hand, much evidence to indicate the stimulating and sedative effect of smoking in moderation. Lauder Brunton, who deals with the action of tobacco on the circulation, cites cardiac irregularity as the common symptom of excess, and pseudoangina as the rare one. The contributor on the effects on the gastrointestinal tract, Dr. Norman Dalton, is able to find but one or two cases in the literature in which a convincing relation between tobacco and stomach trouble exists. It is admitted that we know but little about the effect of tobacco on the intestines, though there is clinical experience, opposed to experimental data, that it favors peristalsis. The effects of tobacco in excess on the nervous system are tremor, giddiness, vasomotor disturbances, such as cold hands and feet, and intranocturnal insomnia.

The effects on the mouth and tongue may be said to be, in the main, minor, though the predisposition to epithelioma of this region must not be overlooked. The effect on the upper air passages is to produce in some cases a pharyngitis and to exaggerate already existing pathologic conditions, such as sinus disease. The general impression gathered from these papers is that in the adult tobacco must be used to excess to produce serious consequences; that even under such conditions severe lesions are rare; that cigarettes are the worst form in which to use the substance, and that the poisonous effects of tobacco are greatly increased by the simultaneous use of alcohol. The question simmers down, then, to the old one of moderation, except in the case of individuals with an idiosyncrasy to the weed. Just what is moderation must, of course, be decided in each individual case by actual experiment. One man can consume with impunity a number of cigars or cigarettes which would seriously poison another. The whole subject is one which needs further investigation, and which will be most difficult to elucidate, at any rate clinically, on account of the frequency of complicating conditions, such as the simultaneous use of alcohol. In view of the scantiness of the literature on certain phases of the subject, it is to be hoped that the profession will be on the lookout for cases of this character and will record them.

THE OXIDIZING FERMENTS OR OXYDASES.

In a recent issue we called attention to the catalytic nature of the intracellular ferments and referred more particularly to the work which has been done on the enzymes which accelerate proteolysis and autolysis. Just as interesting are the researches of ferment chemists concerning the influence of enzymes on the processes of oxidation which go on in living organisms. Since Lavoisier's time it has been known that the animal body possesses oxidizing properties; later studies went far toward localizing the oxidation processes in the cells (Hoppe-Seyler, Pflüger, Schmiedeberg); still later it was proved that the cells need not be intact to cause the oxidation, crushed cells and cell extracts being shown to be effective; finally, it has been demonstrated that the oxidizing processes in the cells are dependent on the presence in them of specific catalytic agents—the oxidizing enzymes or oxydases (Bertrand, Schoenbein, Jacquet, Schmiedeberg, Jacoby). A whole series of oxydases is now recognized, but we shall refer only to six better known examples.

First of all there is the ferment which oxidizes hydrogen peroxid to water and free oxygen gas. It is a matter of every-day experience that oxygen gas is liberated when hydrogen peroxid solutions are brought into contact with blood, pus or tissue cells. The proof has been definitely brought that this oxidation is due to a special enzyme, which is destroyed at a temperature of 100° C., and whose action is inhibited by poisons like hydrocyanic acid. This ferment is widely distributed in the body, the scale of activity, according to Spitzer,[1] decreasing in the series—blood, spleen, liver, pancreas, thymus, brain, muscles, ovary, Fallopian tube. A second oxidizing ferment is that in animal and plant cells which turns the guaiaconic acid of gum guaiacum blue. It also is inhibited in its action by hydrocyanic acid (Schoenbein).

Closely allied to the above is the third very important oxidizing ferment, the so-called laccase of Bertrand.[2] It was shown by Yoshida that this enzyme is responsible for the formation of that valuable commercial product, black Japanese lacquer. Bertrand has made a thorough chemical examination of laccase. He obtained it in preparations free from albumin and demonstrated in it the presence of manganese, along with non-nitrogenous organic substances. This finding is of great importance, for it suggests the possibility that the nature of ferments is to be sought in combinations—probably colloidal—of organic substances with metal ions.

Remarkable in its oxidizing effects is a fourth enzyme, the so-called tyrosinase, discovered by Bertrand.

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[1] The Practitioner, vol. lxxv, No. 1.

[1] Pflüger's Arch., vol. lxxvii, 1897.

[2] Compt. rend. de l'acad., 1895-1897.

He found it in plants and showed that under its influence the white amino-acid tyrosin is converted into colored compounds. One sample of tyrosinase obtained by Gonnermann[3] is capable of changing tyrosin into homogentisinic acid, a fact which turns the clinician's mind at once toward a possible explanation of the pathogenesis of alkaptonuria in human beings, especially as tyrosinase has already been demonstrated in the tissues of certain animals by Biedermann and by v. Fürth and Schneider. It appears probable that the melanin of the cuttlefish is formed through the oxidizing influence of a tyrosinase.

A fifth oxidizing ferment present in the pancreas, salivary glands, spleen, bone marrow and thymus, but not in the lymph glands, breasts, muscles, lungs, brain, adrenals, testicles or kidneys, is that shown by Rochman and Spitzer[4] to influence the synthetic origin of indophenol in the body. They call it indophenol-oxydase.

Perhaps the most important, at any rate the best studied, of the oxydases thus far discovered in living tissues is the aldehydase of Jaquet,[5] isolated first in Schmiedeberg's laboratory. It is very widely distributed in the animal body, occurring in the liver, spleen, salivary glands and thyroid, though it has not yet been demonstrated in the pancreas, muscles, breast or bone marrow, from which organs it appears to be absent. An interesting fact brought out by Jacoby is that, while abundant in the cortex of the suprarenal body, it is absent from the medulla of that organ, just the opposite of adrenalin, which occurs in the medulla but not in the cortex. This aldehydase has the power of oxidizing aldehydes of both the aromatic and fatty series to their corresponding acids. Thus salicylic aldehyd is oxidized by it to salicylic acid and formaldehyd to formic acid. It has been found possible to isolate this ferment comparatively easily, the method of precipitation by uranyl acetate worked out by Jacoby[6] being especially successful for the purpose. It is a true "contact substance" in the chemical sense, as the ferment is not used up during the single reactions, but only very gradually becomes inactive. The laws to which its activities are subordinate have been carefully studied by Medwedew.[7] In certain pathologic conditions the relations of aldehydase have been examined; thus it is not absent from the liver in phosphorus poisoning nor in diabetes mellitus (Jacoby), though it appears to be lessened in amount in the livers of children dead of gastroenteritis (Pfaundler[8]).

The multiplicity of oxydases is an interesting feature. There is no general oxydase, but specific oxydases are active for the individual oxidizing reactions. On the one hand, a given organ may contain one oxydase and not another, and on the other different oxydases may be isolated from one and the same organ. The comparative table of Rosell,[9] showing the distribution of various oxidizing ferments, is of interest in this connection.

As we pointed out in a previous article, the exact chemical nature of the ferments is as yet unknown. The chemistry of the constitution of oxydases is almost as obscure as is that of other enzymes. It seems clear, however, that they are not albumin bodies or nucleoproteids, and there is a good deal of evidence that they represent organically bound metals, most probably iron and manganese.

THE YELLOW FEVER.

The situation has not changed materially during the week. In New Orleans the improvement has been so well maintained that there is a menacing relaxation of public efforts at mosquito destruction. At two points in Louisiana—Tallulah and Patterson—the conditions are grave, a large proportion of the population ill, no funds to work with, and the populace hostile to the mosquito doctrine. The state has offered a small sum if the citizens do their part, and Dr. Charles L. Chassaignac, New Orleans, has left his practice and volunteered to take charge at Tallulah in the hope of arousing the community to help itself, and with a view to proper care of the sick. Reference to our news columns will show that the conversion of Governor Vardaman of Mississippi to rational methods is complete, thorough and creditable. No doubt this excellent result is due to the personality and enlightened persistence of Dr. John F. Hunter, Jackson, secretary of the State Board of Health, and of the officers of the U. S. P. H. and M.-H. Service, with whom Mr. Vardaman has been recently thrown in contact. Mississippi has a number of infected points, the governor and communities admit the failure of shotgun quarantine, and scientific methods under the supervision of the U. S. P. H. and M.-H Service are being vigorously applied. The muddle in Arkansas is astonishing, but it is too early to arrive at final conclusions as to the merits of the controversy. Members of the old State Board of Health appear to have resigned as a matter of principle and as a protest against irrational and overriding methods of Governor Jefferson Davis, and if this prove to be the case, physicians will regret that the governor was able to find other medical men to take the places vacated under such circumstances. Judgment must, however, be suspended until further facts come to light. It looks as if Florida might have a considerable epidemic from the Pensacola focus. Everywhere in the infected area the facts are fully confirming the mosquito conveyance. For instance, Tallulah, La., early in the epidemic had a few cases which ran their course without others appearing and for two weeks or more no further cases occurred, so that it was hoped the infection had run out. However, from lack of funds and from popular disbelief in the part played by the stegomyia, no serious effort was made to destroy the mosquitoes and now the community is more generally infected and is in more grave condition than any other yet involved, the infection not coming from outside but from the infected mosquitoes allowed to thrive after the first cases occurred.

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[3] Pflüger's Arch., vol. lxxxii, 1900.
[4] Chem. Berichte, 1895.
[5] Arch. f. exper. Pathol. u. Pharmak., vol. xxix, 1892.
[6] Ztschr. f. physiol. Chem., 1900.
[7] Pflüger's Arch., vol. lxxxi, 1900.
[8] Jahrb. f. Kinderheilk, 1901.
[9] Dissertation, Strassburg, 1901.

"PICTURES THAT TELL THEIR OWN STORIES."

Under the above caption, the *Ladies' Home Journal* for September devotes a page to pictures that tell their own stories most effectively. One of the pictures is a reproduction of a testimonial from a congressman, in which he tells how satisfactory he found peruna for grippe and catarrh; parallel with this picture is a reproduction of a letter from the same congressman, in which he states that the letter referred to is a forgery and that neither he nor his family ever used the nostrum. Another is a photograph of an advertisement showing how the names obtained by patent medicine concerns—often under the promise to keep them confidential—are sold or rented. A photograph of a label taken from a bottle of Mrs. Winslow's soothing syrup, bought in England, shows that there they have to acknowledge that it contains morphin; for on the label is the legend: "This preparation, containing, among other valuable ingredients, a small amount of morphin, is in accordance with the pharmacy act hereby labeled POISON." The most "telling" picture in the group is one that contains a reproduction of an advertisement which tells us about Mrs. Pinkham: "Having had considerable experience in treating female ills . . . it was easy for her ailing sisters to pour into her ears every detail of their suffering. . . . Any woman, therefore, is responsible for her own suffering who will not take the trouble to write to Mrs. Pinkham for advice." Parallel with this is a photograph of the tombstone in Pine Grove Cemetery, Lynn, Mass., which bears this inscription: "Lydia E. Pinkham, born Feb. 9, 1819, died May 17, 1883."

THE CHOLERA.

From the press dispatches we learn that Asiatic cholera has again invaded Western Europe from Russia, where it has probably been more or less epidemic for some time, notwithstanding the alleged statement of an official commission that no case has occurred in the Russian empire since April 21. The cases thus far reported are confined to certain districts of Prussia, one or two exceptional cases occurring in Hamburg. While it is not anticipated that there will be any repetition of the epidemic of thirteen years ago, the sanitary authorities are wide awake to a certain degree of peril in the situation, and even in this country steps have been taken by the Public Health and Marine-Hospital Service to prevent any possible importations of the disease. The sanitary conditions in Russia are never entirely satisfactory, and it was pointed out some time since that, owing to the internal disturbances and to the fact that the war is draining the country of physicians, the dangers of a cholera epidemic are imminent. With an ignorant populace, a certain degree of weakening of authority and a general lack of intelligent medical supervision in many extensive districts, the fact of cholera leaking over the borders is not at all an encouraging one. It will be very surprising indeed if Russia does not suffer severely from this cause, and it will require active measures on the part of her neighbors to prevent an extension of her misfortunes beyond her boundaries. The extensive immigration of Russians into this country, which does not seem likely to be soon checked, will call for vigilance on the part of health officers at seaports where the immigrants land, and it is reported that several Russian immigrants have been rejected because they came from cholera-infested districts. It is fortunate, however, that, with our better knowledge, cholera is not likely to become the formidable scourge of previous years, but it would not require a very extensive neglect of necessary precautions to make it even now a serious matter.

FEE BILLS LEGAL.

Down in Texas, not long since, some trustophobiac thought he saw in a fee bill of a local medical society a violation of the antitrust laws of the state, and promptly submitted the matter to the attorney general. That official took the matter seriously enough to give a written opinion, which probably settled the matter, in the mind of his inquirer, as far as Texas is concerned. According to the opinion of the attorney general, it is not a restriction of the free pursuit of business for any person or set of persons to refuse to sell their professional services for less than the value they themselves place on them. This would seem to be sufficiently self-evident, but perhaps it is just as well to have a legal opinion on the matter. Since we hear so much of "medical trusts" whenever physicians unite for scientific purposes to protect themselves from imposition or to secure their rights, a little surplusage of legal utterance of common sense will do no harm.

THE PROGRESS OF PURE FOOD LAWS.

The pure food issue stirs both commerce and politics. The developments of the next six months promise extreme interest. There has recently been organized the "National Fruit Manufacturers' Association," with from 50 to 75 members. Its announced object is to protect the public from adulterated foods and drugs. Among other remarks, the secretary of the new association said: "There will be a pure food law enacted at the next congress; of that there is no doubt. What we must decide is, shall it be a pure food law of the manufacturers or of the food commissioners?" At Portland, the National Association of State Food and Dairy Departments decided that the United States Department of Agriculture has set up impracticable standards and that each state should have its own standards and methods, just what the adulterators hope for. It is a question in the minds of many as to whether around state insurance commissionerships or food commissionerships center the most scandals and greatest graft. Of course honest men do get into these positions, but not always. Only two years ago, one food commissioner withdrew from the association on the ground that it was being used for the personal profit—graft—of its members. Reverting now to the remark of the secretary of the Food Manufacturers' Association, it is clear that the medical profession and the public want neither "a pure food law of the manufacturers" nor "of the food commissioners." Congress is going to pass a pure food law, and we shall be compelled to put in sleepless nights to be sure that the measure is not passed in emasculated and deformed shape.

Medical News

ARKANSAS.

Physician's Name Dropped.—The name of Dr. Oscar S. Burrow, Hot Springs, has been dropped from the registered list by order of the Secretary of the Interior.

Appeal to Annul Rule.—The attorney for the unregistered physicians of Hot Springs has made a direct appeal to the President asking him to direct Secretary Hitchcock to recall all rules relating to the creation of a Federal Medical Board, and to prescribe the qualifications a physician must pass to be at liberty to use hot baths in the care of his patients. The petition was referred by the President to the attorney general.

State Board of Health Changes.—Drs. George M. D. Cantrell, president of the State Board of Health, Robert H. Christian, secretary, William H. Miller and William B. Hughes, all of Little Rock, have resigned from the State Board of Health on account of friction between the board and the governor of the state regarding the quarantine situation. Dr. Joseph P. Runyan has been appointed president, Dr. Joseph P. Shephard, secretary, both of Little Rock, and Drs. Robert A. Hilton, Eldorado, and Eugene H. Abington, Beebe, have been appointed to succeed the retiring members.

Personal.—Dr. Thomas B. Bobbitt has been made chairman of the Beebe Board of Health.——Dr. Henry Owen, Newport. has been elected president of the Jackson County Board of Health.——Dr. James M. Gist, Beebe, has been seriously ill with heart disease.——Dr. William H. Barry, president of the Federal Medical Board, Hot Springs, is critically ill with intermittent fever at his home.——The Ashley County Board of Health has been organized with Dr. William E. Easter, president, and Dr. William S. Norman, secretary, both of Hamburg.——Drs. J. Pell Baker, Morrell, Henry E. Cockerham, Portland, and J. L. Parker, Snyder, were appointed vice-presidents for their respective districts.——Crawford County Board of Health has been organized with Dr. William L. Parchman, Van Buren, president, and Dr. Sharp, Alma, secretary.——Drs. S. G. Robertson, Monticello, John T. Blanks, Baxter, and Sidney Harris, Wilmar, have been appointed members of Drew County Board of Health.

CALIFORNIA.

Memorial to Dr. Brown.—As a fitting testimonial of her worth, the friends of the late Dr. Charlotte Blake Brown have raised a fund of $3,000 to endow a bed in the Children's Hospital of San Francisco.

Loses License.—On the allegation of unprofessional conduct, the license of Dr. Jessie Aldrich, Los Angeles, was revoked, August 22, by the State Board of Medical Examiners. The specific charge against Dr. Aldrich was that she had advertised a "sure cure" for cancer.

Chiropractic Found Guilty.—Thomas H. Story, a chiropractic of Los Angeles, was fined $500, August 27, with the alternative of 180 days' imprisonment in the city jail, for practicing medicine without a license from the State Board of Medical Examiners. He threatens to appeal, and says that the physicians of a dozen schools of drugless remedies will aid him in his fight.

Personal.—Dr. Frederick J. Crease, Bakersfield, has resigned as president of the Kern County Medical Association, and Dr. Henry W. Owen, Bakersfield has been elected in his stead.——Dr. John W. Trueworthy, Los Angeles, is reported to be in a critical condition from concussion of the brain as a result of the wreck of a Pasadena electric car, August 16.——Dr. Albert W. Kirk has been appointed volunteer oculist: and Drs. Emma C. La Fontaine and L. H. Young, all of San Francisco, have been appointed volunteer school inspecting physicians.——Dr. Raymond Russ, San Francisco, has been appointed instructor in surgery in the medical department in the University of California.——Dr. Dumont Dwire, Oxnard, health officer of Ventura County, left for Europe August 23.——Dr. Caroline S. Merwin, Oakland, has gone to China to take charge of a Presbyterian Missionary Hospital at Chinaufu.

COLORADO.

Appeals from Decision.—Dr. William M. Bonnet, Denver, has asked for a new trial in the damage suit decided against him in favor of Mrs. Emma C. Foote, for malpractice in May last.

Hospital Reopened.—The Miners' Union Hospital at Telluride, which has been closed since the miners' strike in September, 1903, was reopened September 1, and will be in charge of Dr. John G. Sheldon.

Personal.—Dr. Lewis E. Lemen, Denver, has been appointed chief surgeon of the Moffat Railroad, and Dr. Hugh L. Taylor assistant chief surgeon.——Dr. Maurice Kahn, Leadville, has been appointed captain and assistant surgeon in the National Guard of Colorado.—Police Surgeon Dr. Francis E. Prewitt, Denver, has resigned.

DISTRICT OF COLUMBIA.

Personal.—On the recommendation of the superintendent of the Washington Asylum, Dr. J. H. Constas was appointed resident physician at the Asylum Hospital, vice Dr. T. J. Sullivan, removed.——Dr. Henry C. Macatee has been appointed medical instructor of public schools, and Dr. Edmund Barry a member of the board of police and fire surgeons.

Typhoid Fever.—On August 26, 16 new cases of typhoid fever were reported at the Washington health office; the number reported since July 1 is now 408, and 286 patients were under treatment on August 25. The district officers do not look for a change in conditions until the middle of September, when the filtration plant is expected to be in full operation.

FLORIDA.

Personal.—Dr. Thomas A. Williams, Jacksonville, is spending the summer abroad.——Dr. John W. Clerke, Green Cove Springs, who has been seriously ill, has returned from Jacksonville and is now convalescent.

Health Board Official Dies.—Mr. R. L. Durrance, executive clerk for the State Board of Health for a number of years, died at his home in Jacksonville August 7 from appendicitis, aged 28. He was an efficient and faithful official and his death will prove a serious loss to the board.

Medical Examiners Approved.—Drs. J. D. Fernandez, Jacksonville; J. Harris Pierpont, Pensacola; Henry E. Palmer, Tallahasse; J. Harrison Hodges, Gainesville; John B. Maloney, Key West; Alonzo L. Blalock, Madison, and R. L. Harris, Orlando, have been appointed members of the State Board of Medical Examiners.

State Health Board Formed.—Captain Harry Fozzard, Jacksonville, has been appointed, and Dr. Horace L. Simpson, Pensacola, and Hon. E. M. Hendry, Tampa, have been reappointed members of the State Board of Health. Dr. Joseph Y. Porter, Key West, holds over as state health officer, as he was elected for that office for four years in February last.

GEORGIA.

Will Probated.—The will of the late Dr. Robert H. Hightower, Dublin, was probated August 10. The estate is appraised at about $60,000.

Appropriation for Sanitarium.—The trustees of the State Sanitarium, Milledgeville, ask for an appropriation for 1906 of $394,000, and for 1907 of $407,000.

Sanatorium Opens.—The Piedmont Sanatorium opened at Atlanta under the charge of Dr. Ludwig Amster, with Dr. Maloney, formerly of the Grady Hospital, as assistant. Dr. Floyd W. McRae will have charge of the surgical department.

Personal.—A fire in the office of Dr. J. Clarence Johnson destroyed his books, papers and instruments July 28.——Dr. Charles F. Benson, president of the Atlanta Board of Health, is seriously ill with typhoid fever.

Hospital Notes.—The Wesleyan Memorial Hospital, Atlanta, was formally dedicated with appropriate services August 19. Bishop Warren Candler delivered a dedicatory address, and Dr. J. Scott Todd spoke on behalf of the medical board of the institution.——Thomasville has just built a new city hospital, representing an investment of about $12,000.——The Macon City Hospital will receive from this time on $5.000 annually from Bibb County and a like amount from the city.

Beneficiary Scholarships.—The following appointments to the beneficiary scholarships at the Medical College of the University of Georgia have been made by the governor: C. M. White, Columbus; J. D. Delmar, Whitesville; G. T. Bernard, Athens; Frank C. Harpe, Buena Vista; W. H. Sutton, Swainsboro; L. L. Lanier, Stillmore; S. T. Register, Lennox; G. T. Crozier, Cedar Springs; Edmund W. Carter, Carsonville; Guy G. Lunsford, Americus; P. J. Brown, Newman; W. B. Spain, Talbotton; E. S. Harris, Bethlehem; M. F. Hurst, Monroe; W. B. Goddard, Milner; George L. Johnson, Yatesville; W. A. Arnhold, Carrollton; Sam C. Cheney, Silver

Creek; O. S. Wood, Madison; Charles T. Ridley, Hillsboro; T. L. McCurry, Centerville; J. S. Burrell, Clayton; Fred A. Lowe, Augusta; C. E. Stapleton, Gibson; J. D. Peacock, Quitman, and Henry Smith, Sirmans.

ILLINOIS.

Physicians Injured.—Dr. Ralph E. Niederinghaus, Granite City, was painfully, though not seriously, injured in a runaway accident August 31.——Dr. Henry C. Fairbrother, one of the oldest practitioners of East St. Louis, was injured internally by falling into an excavation August 31.——Dr. George M. Straight, Winchester, was painfully bruised in a runaway accident August 31.

Chicago.

Personal.—Dr. N. Senn returned from Greenland September 11.——Dr. Truman W. Brophy has returned after a summer abroad.

Fined for Illegal Practice.—H. Wolff, prosecuted by the State Board of Health on a charge of practicing medicine at 503 Sangamon street without a license, was fined $200 and costs September 5.

Smallpox Checked.—There are at present only eight smallpox patients in the Isolation Hospital, and all of these are convalescent. There have been no new cases for two weeks, and it is hoped that the disease is effectually checked.

Decrease in Typhoid Fever Death Rate.—Fourteen years ago Chicago had the highest typhoid fever death rate of any large city in the world, amounting to 17.22 per 10,000 population. For 1904 the rate was only 1.92 per 10,000, which places Chicago among the lowest, in this regard, of all large cities.

The Unstable Laboratory.—It is now currently reported that the laboratory of the Health Department, which was reported, first, to have been moved to the city building at Michigan avenue and Fourteenth street and, then, to the Galbraith building at Franklin and Madison streets, will remain in its old quarters in the City Hall.

Acquire Property.—The Illinois Charitable Eye and Ear Infirmary has acquired one hundred feet additional frontage on Peoria street for $20,000, on which will be erected a fireproof addition to the present structure. The legislature recently appropriated $75,000 for this purpose.——The Washington Park Hospital has acquired a lot on Sixtieth street, 50 by 150 feet, on which an addition will be built.

The Week's Deaths.—During the week ended September 9, 500 deaths were reported, 10 less than for the previous week and 57 more than for the corresponding week of 1904. The respective annual death rates per thousand are 13.09, 13.35 and 11.98. Of the deaths, 147 were of infants under 1 year. Acute intestinal diseases caused 124 deaths; violence, including suicide, 55; consumption, 44; nephritis, 38; nervous diseases, 29; pneumonia, 28, and heart disease, 27.

IOWA.

Hospital Burns.—The Somers Hospital, Grinnell, was burned to the ground early on the morning of August 30. No casualties occurred, but the loss is about $3,000.

Carbolic Acid Sale Regulated.—The physicians of Des Moines are heading a movement to have a law passed by the legislature which will place carbolic acid on the same basis as morphin and other drugs as regards its sale. The necessity for this law is evident from the increasing number of cases of suicide from carbolic acid, which can be obtained at present without the restrictions under which cocain, morphin and other poisons are sold.

Medical Colleges Open.—The Sioux City College of Medicine opens for its fall term September 19. The new members of the faculty are: Dr. E. A. Jenkinson, professor of embryology; Dr. W. R. Mahood, professor of physiology; Dr. Isaac E. Nervig, assistant professor of anatomy; Dr. E. Ruel Wheeler, assistant professor of physiology, and Dr. Alexis M. Warren, professor of surgery.——Keokuk Medical College has added to its faculty Drs. Frank B. Hiller, Kahoka, Mo.; Frank P. Norbury, Jacksonville, and C. R. Armentrout, Keokuk.

Personal.—Dr. William G. Morton, Iowa Falls, has been appointed assistant surgeon at the Soldiers' Home, Marshalltown——Dr. Channing E. Dakin has been appointed school physician of Mason City.——Dr. Lucius French, Davenport, who was recently operated on for gallstone disease, is making satisfactory progress.——Dr. William B. La Force and wife, Ottumwa, arrived from Europe August 30.——Dr. E. R. Walizer, Des Moines, was committed to the State Insane Hospital at Clarinda August 21.——Dr. Timothy J. Caldwell, ex-senator, Adell, is critically ill with rheumatic endocarditis. ——Dr. A. A. Noyes, Mason City, has been made a life member of the Cerro Gordo County Medical Society.——Dr. Kirk Jaenecke, Clinton, sails for Europe from Montreal this month.

MARYLAND.

Personal.—Dr. Herbert E. Zepp has formed a partnership in practice with Dr. A. B. Glascock of St. Michaels, Talbot County.

Good Roads Physician.—Dr. V. M. Reichard of Fair Play is displaying talent and public spirit in building good and cheap roads in his section. In addition to a large practice he holds the office of road supervisor of his district. He finds it possible to construct macadamized roads, if there be no grading, for about $550 per mile. His crushed stone costs him about 45 cents a perch.

Baltimore.

Injured.—Dr. Edwin Geer, commander of the Maryland Naval Reserves and surgeon of the city fire department, was painfully injured September 6 by falling from a street car. ——Dr. Joseph C. Wunder, in an effort to save a pigeon from a cat September 1, fell from a porch and broke his jawbone.

Personal.—Drs. William Green and Thomas H. Buckler are in Paris.——Dr. John McF. Bergland has gone to North Hatley, Canada, to hunt deer.——Dr. Ira Remsen has returned from his summer vacation at Northeast Maine in order to attend a meeting of the sewerage commission, of which he is a member.

Sewerage System.—The first practical step was taken September 7 by the commission engaging a board of three advisory engineers, to study the situation, to recommend the best method for disposal of sewage and to give an estimate of its cost. It was decided that the sewage before emptying into the bay or river shall be as pure as possible, to avoid possible injury to the oyster and fish industry of the state. The advisory engineers selected are Messrs. Rudolph Hering of New York, Frederick P. Stearns of Boston, and Samuel M. Gray of Providence, and they were requested to recommend a chief engineer to the commission, and to present their report not later than April 1, 1906, and earlier, if possible. Each of the three advisory engineers receives $5,000 as a fee, and additional $5,000 for outside work to be done and traveling expenses.

NEW JERSEY.

Camden's Health Report.—During August only 16 cases of contagious disease were reported to the Board of Health as follows: Scarlet fever, 5; typhoid fever, 2; diphtheria, 1, and tuberculosis, 8.

Diphtheria Epidemic.—An epidemic of diphtheria is reported at Port Republic, near Egg Harbor City. A number of deaths are said to have occurred, and public meetings are prohibited for the time being.

Hospital Report.—The report of Cooper Hospital, Camden, for August shows that 84 patients were admitted to the hospital during the month, and that there were 50 remaining September 1. In the dispensary 412 new cases were treated, and 1,352 visits were made.

Lower Death Rate.—The annual report of the New Jersey State Board of Health, just issued, shows that the death rate in the state per 1,000 of population, for 1903, was 15.87, or .04 less than for the previous year. There has been, generally speaking, a decrease since 1892, when the rate was 21.62 per 1,000. The births for the year were 37,242, or 18.47 per 1,000 of population, and the deaths 31,820.

NEW YORK.

Property Given Hospital.—At the gift fair for the German Hospital, Buffalo, a two-story brick house and lot at 934 Fillmore Avenue, valued at $5,000, was presented to the hospital.

More Insane Patients Transferred.—The transfer of 500 patients from King's County State Hospital to the Rochester State Hospital and Willard State Hospital was completed September 7. There were 290 patients transferred to the Rochester State Hospital and 210 to the Willard.

Buffalo Wants Better Water.—An advisory commission composed of expert engineers has been appointed to pass on plans for the improvement of the city water system. The board consists of Col. Thomas W. Symons, U. S. A., Rudolph Hering of New York, and Gen. George S. Field of Buffalo.

Buffalo Personals.—Drs. Roswell Park and Edgar McGuire, who sailed from Montreal on the *Victorian*, were obliged to transship when their steamer grounded in the St. Lawrence above Quebec, took train to New York and sailed on the *Caronia* next day.——Dr. Floyd S. Crego returned home from a nine months' visit to Europe.——Dr. Charles G. Stockton has returned from the Pacific coast.

New York City.

Seven More Suspects.—Seven voyagers on the steamer *Advance*, from Colon, were detained at quarantine and taken to Hoffman's Island for observation on account of high temperatures.

Fire at Child's Hospital.—On September 8 fire broke out in the wing of the Child's Nursery and Hospital, which has been leased by the Rockefeller Institute for Medical Research. Very little damage resulted.

Personal.—Dr. and Mrs. Charles Phelps arrived on the *Koenigin Luise* September 8.——Dr. James E. Newcomb's house was broken into by thieves, who carried away about $300 worth of jewelry.——Dr. M. C. O'Brien has returned after two months' vacation at Old Orchard, Maine.

Ambulance Accident.—The Kings County Hospital ambulance, while going at full speed, collided with a large touring car. Two of those in the touring car are expected to die. The ambulance surgeon escaped with slight injuries and explained that the high speed of the ambulance was deemed necessary on account of the condition of the patient he was taking to the hospital.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended August 26, 429 cases of tuberculosis, with 175 deaths; 329 cases of typhoid fever, with 20 deaths; 132 cases of diphtheria, with 15 deaths; 115 cases of measles, with 6 deaths; 54 cases of scarlet fever, with 2 deaths; 14 cases of cerebrospinal meningitis, with 15 deaths, and 3 cases of varicella.

Still Refuse Use of Mails.—The District Court of Washington, D. C., denied the application of the New York Institute of Physicians and Surgeons for a mandamus compelling the postmaster general to restore to the institute the use of the mails which he had previously denied by an official order. The court held that there was reasonable ground for the conclusions reached by the department.

New Graft Game.—There has been a man at work in the Bronx and elsewhere who calls on physicians, telling them of an imaginary ill. The doctor makes an examination and finds the man's heart on his right side. The patient seems alarmed and the physician becomes interested. Then the patient makes a strike for $2 or $5, promising to call again. This new game has been worked successfully.

Personal.—Dr. George W. Kunz has been appointed by the state department a delegate to the International Congress for the Study of Radiology and Ionization, to be held in Leige, Belgium, this month.——Dr. and Mrs. Charles E. Nammack arrived on the *Oceanic*, August 31.——Drs. W. B. Anderton and George W. Jacoby arrived on the *Kaiser Wilhelm der Grosse*, August 29.——Dr. and Mrs. Edwin Atwood sailed for Europe on the *Finland*, September 2.

To Kill Staten Island Mosquitoes.—The contract for draining the south marshes of Staten Island has been awarded and work will be begun at once. Petroleum-spraying machines were sent to infected spots, and the people were asked to coöperate with the authorities in combating these pests, and as a result there has been a marked decrease in the annoyance from mosquitoes. Dr. Doty expresses himself as confident that in due time the mosquito will be extirminated from this locality.

Keepers Locked Up with the Insane.—Two attendants of the Manhattan State Hospital for the Insane, on Ward's Island, who had four demented patients in charge, were locked up on September 1 by the Chicago police on the suspicion that they were trying to foist their patients as public charges on the state of Illinois. This has caused indignation at the hospital and at the office of the State Board of Alienists, as the men were provided with all credentials necessary to show that the patients were residents of the state of Illinois.

Record Month for Typhoid.—Between July 29 and August 30 the typhoid fever cases reported to the Board of Health numbered 1,128. This is the highest number of cases in one month for years. The cases in August of last year numbered 413. From Saturday, August 26, to Wednesday, August 30, 157 cases were reported, 98 of which appeared in Brooklyn, and during the month there have been 579 cases in that borough. Few are now appearing in the Bath Beach section, where they were especially numerous a few weeks ago.

Sue City for Poisoning.—As the result of the death of two men in the Cumberland Street Hospital, Brooklyn, after carbolic acid had been administered instead of whisky, by mistake, claims for damages amounting to $50,000 have been filed against the city. Both men were in a serious condition on the night of Dec. 27, 1904, when whisky was ordered and the nurse administered carbolic acid by mistake, but Superintendent Bacon claimed that the men would have died in any case and the carbolic acid only hastened the end.

Activity at Quarantine.—As the result of the discovery of cholera at Hamburg a conference was held at Quarantine, September 1, between Dr. Alvah H. Doty, health officer of the port, and representatives of the transatlantic steamship lines, at which it was agreed that extra precautions should be observed in receiving immigrants from German ports. All passengers from infected localities will be kept at the ports of embarkation under medical inspection for six days previous to departure. During the voyage to this port all steerage passengers will be subjected to medical examination and inspection twice a day, and everyone found ill will be isolated.——The Panama Railroad steamer *Havana* arrived at Quarantine August 31 with one case of yellow fever aboard. Five passengers with suspiciously high temperatures have been held and are being closely watched.——The Portuguese steamer *Peninsular*, which arrived in port September 1, had on board one case of smallpox. The passengers who were exposed to contagion were sent to Hoffman Island for observation.

Prospect of Filtered Water Supply.—A pamphlet entitled "Report on Filtration of the Water Supply of New York City," by Dr. Thomas Darlington, commissioner of health, has been published, which sets forth the reasons why a filtration plant should be installed for this city. Dr. Darlington presents a number of carefully prepared charts showing the reduction of typhoid mortality by the filtration of water. During the past five years the number of cases of typhoid fever in New York City are as follows: For 1900, 2,658 cases, with 718 deaths; for 1901, 2,748 cases, with 721 deaths; for 1902, 3,871 cases, with 765 deaths; for 1903, 3,671 cases, with 653 deaths; for 1904, 3,412 cases, with 661 deaths. During the same period the deaths from diarrheal diseases were: For 1900, 6,695; for 1901, 6,773; for 1902, 5,767; for 1903, 5,120, and for 1904, 6,527. It is probable that many of these deaths were due to contaminated water. Dr. Darlington estimates that the cost of filtering the water supply of 500,000,000 gallons daily would be $17,000,000, and the annual cost of operation $900,000.

Report of the Pneumonia Commission.—This commission, which was appointed in August, 1904, by the Board of Health, and began its work in October, has made public its first report. The commission consisted of Drs. Edward G. Janeway, William Osler, William H. Welch, T. Mitchell Pruden, Theobald Smith, Frank Billings, John H. Musser, L. Emmett Holt, Francis P. Kinnicutt, Thomas Darlington and Hermann M. Biggs. This report showed that the pneumonia germs were found in 95 per cent. of those examined. In discussing this question, it says that there is a possibility that pneumococci of greater virulence than those found in the mouth are inhaled with the air current, determining the onset of the disease. There would seem to be evidence that the pneumococcus may suddenly appear in the so-called normal mouth, that certain individuals carry the organism in their mouths for considerable periods of time, and that even those persons in whom the organism can not be demonstrated at every examination may harbor the pneumococcus in the less accessible portions of the respiratory tract. The study of the communicability of pneumonia led the commission to the conclusions that (1) "normal" individuals in whose mouths the pneumococcus is repeatedly found to be absent may acquire the organism by association with cases of pneumonia or with "positive normal" persons; (2) the handkerchiefs of pneumonia and "positive normal" cases may be regarded as means of transportation of the pneumococcus from person to person. A vigorous attempt was made to develop a serum which might be used either to ward off the pneumonia or to assist in ridding the blood of the germs after the disease had been contracted. They found that all pneumococci were agglutinated by means of pneumococcus immune serum; an immune pneumococcus serum was found capable of agglutinating various pyogenic streptococci, certain atypical organisms and several strains of the *Streptococcus mucosus capsulatus*; the serum of pneumonia patients varied in its power to agglutinate different pneumococci. Some strains were agglutinated, others not.

PENNSYLVANIA.

Personal.—Dr. Philip Y. Eisenberg, Norristown, was thrown from his carriage, September 5, and sustained painful but not serious injuries.

Bequest to Hospital.—The late Bethuel T. Hall has bequeathed to the Chester Hospital $3,000 as an endowment fund, the income of which is to be used in the general conduct of the hospital. The endowment is made in memory of his mother, Sarah Hall, and his aunt, Charlotte Cloud.

Oil City Working Against Tuberculosis.—The Grand View Institution, Oil City, which is devoted to the care and treatment of consumptives, has raised $6,500 and expects to erect an additional building to accommodate twenty-four patients. At present the institution accommodates fifteen patients, some of whom are living in tents.

Typhoid at Nanticoke.—An epidemic of typhoid fever has broken out in Nanticoke, near Wilkesbarre. Up until September 7, 224 cases had been reported. A committee appointed by the Board of Health to investigate the water supply found one house in which typhoid fever existed and from which drainage contaminated the streams leading to the reservoir. The official report of the investigation has not yet been made public.

Medical Society Pays Costs.—In the case of "Dr." A. Witman, charged by the Monessen Medical Society with practicing medicine without a license, the defendant was acquitted and the costs charged against the medical society. This peculiar result was attained because when the case was called the defendant did not appear. The prosecuting attorney insisted that his cash bail bond of $400 be forfeited, but the defendant's attorney, declaring that he would try the case without the defendant, obtained a favorable decision for his client.

Doctored Milk on the Decrease.—Reports of the Dairy and Food Commission during the past month show a decrease in the amount of doctored milk dispensed. Of a total of 460 samples of milk and cream taken by the Dairy and Food Commission agents for analysis, only 5 were such as to justify prosecution. Two years ago examination revealed that more than 33 per cent. of the samples taken were preserved with formaldehyd, boric acid, or were watered, skimmed or colored in violation of law. The total receipts of the Dairy and Food Commission during June, July and August were $13,527.14, nearly all of which was fines. The receipts since January only for oleomargarine and renovated butter licenses were $31,000.

Personal.—Dr. J. Edward Dickinson, Harrisburg, has been elected anesthetist on the staff of the Harrisburg Hospital.——Dr. M. C. Womack has gone on duty as resident physician at the Reading Hospital.——Dr. Harry J. Bell, Dawson, is taking a trip to the Pacific coast.——Drs. A. E. Mahood and G. R. Reid have taken up their duties as internes at Hamot Hospital, Erie.——Dr. Jacob O. Knipe, Norristown, fell while alighting from a trolley car, dislocating his shoulder and injuring his right knee.——Dr. William H. Lauman, Mount Holly Springs, has had a cerebral hemorrhage.——Dr. Arthur S. Brumbaugh, Altoona, reached New York from Italy September 7.——Dr. Charles B. Hough, Ambler, sustained a contusion of the leg in a train collision, September 4, at Brush, Colo.——Dr. A. F. Brundage, Hazleton, who recently resigned as United States consul at Aix-la-Chapelle, has returned to his farm at Conyngham.

Philadelphia.

Love Powders Dispensed.—John Brady, a self-styled doctor, with offices at 1208 Pine street, was arrested, charged with selling powders that were warranted to restore connubial happiness. The doctor's patrons asserted that the powders did not possess the necessary charms. He was held in $500 bail for trial.

Hospital Reports.—During August, Mount Sinai Hospital treated 3,825 cases, of which 423 were accidents, and 71 patients were admitted to the wards.——Samaritan Hospital treated 1,678 patients in the dispensaries; 257 of these were due to accidents, and 72 were admitted to the wards.——The Germantown Hospital treated 1,755 cases in the dispensary, and 283 patients were treated in the wards.

Mutual Aid Society of County Medical Society.—The Philadelphia County Medical Society gives financial aid to the widows and orphans of its members and to members in distress. The society also has a private room in the Polyclinic Hospital devoted to the care of sick members. Any information concerning the aid association can be obtained from Dr. Joseph S. Neff, treasurer, 2300 Locust street.

Health Report.—The deaths from all causes for the week numbered 374. This is below the normal, as there were 434 deaths in the previous week and 400 in the corresponding week of last year. The principal causes of death were: Typhoid fever, 12; whooping cough, 5; tuberculosis, 55; cancer, 20; apoplexy, 15; tetanus, 1; heart disease, 23; acute respiratory diseases, 16; gastritis, 5; enteritis (under 2 years), 37; enteritis (over 2 years), 8; Bright's disease, 29; accidents, 22, and marasmus, 13.

Personal.—Dr. Harry L. Randal escaped serious injury in a train wreck in Denver, Colo., September 5.——Dr. Thomas C. Potter, Germantown, has sailed for Europe.——Dr. J. Frank Meade, while returning from Atlantic City in his automobile September 5, was struck in the face by a stone thrown by some miscreant and painfully injured.——Dr. Fairfax Irwin, who was detailed to study the cholera situation in Germany, has, by order of the United States Public Health and Marine-Hospital Service, postponed his departure.——Dr. Richard Flavel Woods narrowly escaped a serious accident, August 13, when his automobile ran into a ditch and turned completely over, burying Dr. Woods beneath it. Before he was rescued the flames of the exploding gasoline had caused serious burns.——Drs. Lawrence F. Flick, Joseph Walsh, Mazyck P. Ravenel and Daniel J. McCarthy sailed, September 16, to attend the International Congress on Tuberculosis in Paris.

Organizing the Profession.—The weekly roster of the medical organizations of Philadelphia has the following to say concerning the organization of the profession: "Consolidation of common interest has in recent years marked all of the activity, and the medical profession forms no exception to this world-wide movement. Its newest development tends to confirm the dictum that in union is strength. In the American profession, with the county society as the unit, membership therein leading through the state society to the national association, we find physicians organizing with an eagerness never before shown in any section of the land. Stimulated by this crusade, its latest phase is presented in a systematized enrollment of the practitioners of the great cities. The Philadelphia County Medical Society is a noteworthy example in that, through originating the "branch" feature, the membership is now at the 1,200 mark, with 1,800 in view. Branch societies will hold monthly meetings in, ultimately, every section of the city, and the scientific value of the meeting programs has risen just as steadily, so that systematized postgraduate courses of instruction for members may be the final object."

TENNESSEE.

New Infirmary in Memphis.—Drs. Frank D. Smythe and Bennett G. Henning, Memphis, are about to erect a sanitarium in Memphis, to cost $30,000.

College Merger.—The Tennessee Medical College, Knoxville, has decided to become the medical department of Lincoln Memorial University, Cumberland Gap, and the new hospital which is being erected by the college will be known as the Lincoln Memorial Hospital.

Personal.—Dr. Archibald L. Elcan, Memphis, was tendered a farewell dinner, September 2, by seven of his professional associates. He leaves for Los Angeles, Cal., in a few days.——Dr. Raymond Wallace, Chattanooga, returned from Europe on the *Baltic* August 17.——Dr. Newman Taylor, Brunswick, has been appointed assistant physician at the Shelby County Asylum for the Insane, vice Dr. James K. Castles, Memphis, deceased.——Dr. Carroll M. Lovell, Dickson, has been appointed local surgeon of the Nashville, Chattanooga & St. Louis Railroad, vice Dr. Edward W. Ridings, deceased.——Dr. Richard M. Little, Dresden, was injured in a runaway accident August 10.

TEXAS.

New College Building.—The new building for the medical department for the Southwestern University, Dallas, will be ready for occupancy early in October.——The Fort Worth Medical University expects to erect a new medical college building, at a cost of from $40,000 to $50,000.

Banquet to Dr. Graves.—The Bexar County Medical Association tendered a farewell banquet to Dr. Marvin L. Graves, retiring superintendent of the Southwestern Insane Asylum, San Antonio, August 10, at which resolutions were adopted regretting his departure to accept the position of chair of theory and practice of medicine in the State University, and commending the wisdom of the State Board of Regents for its selection of Dr. Graves for this position.

Personal.—Dr. Q. Cincinnatus Smith has moved from Austin to San Diego, Cal.——Dr. Aug. D. Ferguson, Kingsville, has moved to Dallas.——Dr. and Mrs. Robert L. Harris, Fulshear, have gone to New York.——Dr. Thomas O. Maxwell, for fifteen years first assistant physician at the State Lunatic Asylum, Austin, has been made superintendent of the Southwestern Insane Asylum, San Antonio, vice Dr. Marvin L. Graves.——Dr. James H. Eastland, Waco, has been appointed first assistant physician at the State Lunatic Asylum, Austin, vice Dr. Maxwell, transferred.——Dr. Willis E. Lowry has succeeded Dr. Shaver as state health officer at Laredo.——Dr. M. G. Pierce, Hookerville, fell, August 6, dislocating his left hip. His advanced age renders the injury more severe.

GENERAL.

Plague in Hawaii.—A death from plague is reported from Waipahu, near Honolulu, August 30.

Personal.—Dr. Jean Guiteras, professor of tropical diseases and pathology in the University of Havana, has been made Dean of the University.

Quarantine Against New Orleans.—The governor of Jamaica has declared quarantine against New Orleans and the republic of Panama (including the Canal Zone), in view of the prevalence of yellow fever in those places.

THE YELLOW FEVER SITUATION.

New Orleans.—The teamsters went on strike last week, interfering materially with sanitary work.——New cases September 11, 38; deaths, none; total cases to September 11, 2,343; total deaths to September 11, 321; death rate, 13.7 per cent.; new cases September 4 to 11, inclusive, 240; deaths September 4 to 11, inclusive, 28.——Capt. B. F. Clayton, quartermaster, U. S. Army, has yellow fever.——An Italian died of yellow fever, his case not having been reported, and his relatives threw his body into Lake Ponchartrain.——The New Orleans *States* keenly scores Dr. Eugene Wasdin, United States Public Health and Marine-Hospital Service, because while in charge at Gulfport, Miss., he failed to find the yellow fever in the little place until it had existed for two or three weeks and until the Alabama officials inspected the town. The *States* asks for the withdrawal of the surgeon.——Assistant Surgeon William C. Rucker, United States Public Health and Marine-Hospital Service, is ill with yellow fever.——The attempt to change annual moving day from September 1 to October 1 had to be abandoned on account of legal obstacles. Arrangements were made, however, for proper fumigation of all premises where a change of tenants occurred.——The United States Public Health and Marine-Hospital Service estimates that, comparing the epidemics of 1878 and 1905 up to September 5, modern methods have saved New Orleans at least a million dollars.——The New Orleans Health Association has become a permanent organization.——Fumigation of houses and educational mass meetings continue throughout the city.——Dr. Charles F. Chassaignac, New Orleans, has volunteered to take charge of the deplorable situation at Tallulah.

Louisiana.—During the week the epidemic has spread slowly. The following is the record of the week, outside New Orleans: Tallulah, 54 cases, 1 death; Lake Providence, 36 cases, no deaths; Patterson, 49 cases, 3 deaths; Kenner, 15 cases, 3 deaths; Hanson City, 23 cases, no deaths; Jefferson, 3 cases, no deaths; St. Rose, 4 cases, 10 deaths; Pecan Grove, no cases, 3 deaths; St. Bernard, 8 cases, no deaths; Venet, 1 case, no deaths; Kinlin, 2 cases, no deaths; Fisher's, 2 cases, no deaths; Amelia, 6 cases, no deaths, Belle Grove, 6 cases, no deaths; Moise, 2 cases, no deaths; Donaldsonville. 3 cases, no deaths; Pointe Celeste, 25 cases, 6 deaths; Woodlawn, 12 cases, 1 death; Greenwood, 1 case, no deaths; Bayou Boeuf, 4 cases, no deaths; Riverside, to September 8, 180 cases, 7 deaths; La Fourche, 4 cases, 2 deaths.——During the week there was grave rioting among the Italians at Patterson, who resisted the efforts of the sanitary officers.——Quarantines continue to be modified.——Up to September 6 there have been 1,075 cases of yellow fever, outside of New Orleans, in Louisiana, Mississippi, Alabama, Georgia, Florida and Missouri. There have been 125 deaths in the same territory, or about 12 per cent.——The Shreveport *Times* relates a case illustrating the hardships of local quarantines. A medical student of Shreveport, going home from New Orleans, was stopped at the bridge into the town and turned back. He got off the return train at Dubberly, Miss., where he was told it would not be safe to remain after dark. He walked to Sibley, another small town, where he was told to move on. He left that place in a livery rig. After a day or two more he arrived at Bossier City, near Shreveport, where he had a talk with Dr. E. Edgar Schumpert of the local board of health, who refused him admittance to the detention camp, as there was one at Bossier. At the Bossier camp Dr. Coleman told him that as he was not a resident of Bossier he had just one hour to leave the town. There the story ended.——At Tallulah the infection is widespread. Dr. George H. Tichenor, Jr., New Orleans, in charge there, reported that he could not obtain public support for the necessary sanitary measures, and asked to be relieved. At last reports Dr. Charles F. Chassaignac of New Orleans had volunteered to take charge.

Other States.

Alabama.—A new relay camp has been established at Flomaton for the inspection and detention of passengers from Pensacola, Fla.

Arkansas.—In addition to the four members of the state board of health last week reported as having resigned, Dr. William Jackson, Jonesboro, has resigned later. Governor Davis has appointed the following new members: Drs. Joseph P. Runyan, president, Little Rock; Dr. Joseph P. Sheppard, secretary, Little Rock, and Dr. Robert A. Hilton, Eldorado. Later he added Dr. John R. Dibrell, Little Rock. The new board of health promptly declared absolute quarantine against Mississippi and Louisiana, even proclaiming: "No certificates recognized from either of these states." It declared that, as rapidly as possible, all four boundaries of the state would be guarded. Freight from the infected states will not be allowed to come in until fumigating stations have been established at the expense of the railroads. The railroads, furthermore, were ordered to maintain detention camps at all points where they cross the boundary. The new board then turned its attention toward persuading the various quarantined towns in Arkansas to abandon their restrictions, trusting entirely to the state quarantine. The Little Rock *Gazette* severely criticized the action of Governor Davis in refusing permission for a surgeon of the United States Public Health and Marine-Hospital Service to pass on a special train through a small stretch of Arkansas territory, even as an act of charity to a suffering community in Louisiana. Arkansas citizens keenly feel the disgrace of their state.——Pine Bluff has raised its local quarantine.——From Mammoth Springs there comes complaint that the militia, as quarantine guards, held a fast mail train at Thayer, Mo., for two hours, while the passengers were made to purchase health certificates at $1.25 each. Those who could not pay were put off the train, according to the Little Rock *Democrat*.——The Rock Island Railway has put in a fumigating plant at Bridge Junction, opposite Memphis.

Florida.—Two new cases were reported from Pensacola on September 5, two the following day, two on the 7th and on the 8th, 11 new cases and one death.——Dr. Stephen M. Gonzalez, in an interview in a local paper, said there was no yellow fever in Pensacola and that physicians were reporting it only for purposes of graft. He was arrested, tried and sentenced to 30 days in jail, sentence being suspended during good behavior.——Many new suspicious cases are under investigation.

Georgia.—On September 2 a man, recently arrived from Pensacola, Fla., developed yellow fever and was properly isolated, but died 3 days later.——By a vote of 5 to 3 the city board of health of Atlanta refused to quarantine against infected points. The medical members were reported as voting for quarantine.——A number of Georgia towns quarantined against Atlanta, and the State Board of Health had previously passed a resolution demanding that Atlanta quarantine against infected points. There are said to be 7,000 refugees in Atlanta.——On September 7 the State Board of Health quarantined the entire state against all infected points.

Indian Territory.—Following the report of a suspicious case at Maysville, the United States Public Health and Marine-Hospital Service has taken charge of the situation at that place.

Mississippi.—Dr. Joseph Goldberger, United States Public Health and Marine-Hospital Service, addressed the physicians of Natchez on methods of meeting the infection.——Having had demonstrated the failure of shotgun quarantine, Natchez is now fumigating and taking other rational measures to check the epidemic.——During the last week Natchez has reported 5 new cases, Gulfport 1, Mississippi City 2, Pearlington 1, Sharkey county 1, Corinth 1, Vicksburg 4 (25 in all), and Fostoria 1.——A negro from Gulfport eluded the quarantine guards at Pass Christian and entered that popular resort. He was later caught, and, it is reported, chained to a tree for two days, exposed to sun and rain and unable to protect himself from mosquitoes. As soon as the federal officers heard of this medieval brutality the negro was liberated and put in the detention hospital.——It is reported yellow fever existed in Vicksburg as far back as July 20. At a meeting of Vicksburg business men, September 1, resolutions of confidence in the mosquito theory and the United States Public Health and Marine-Hospital Service were passed, and the local board of health was asked to modify its quarantine to accord therewith. This was done, and the United States Public Health and Marine-Hospital Service rules were adopted by the board of health, permitting the resumption of freight traffic.——Governor Vardaman, in a proclamation, has so fully accepted the conclusions of medical science that, in justice, some of his statements should be quoted. "The lesson of the Natchez fever ought to be taken well to heart by the people of the entire state. It shows conclusively that it is not enough to rely on quarantine vigilance alone. . . . It emphasizes the necessity of keeping ever closer watch on the internal conditions. . . . I have no hesitancy in expressing my firm conviction that the greatest danger is not so much in admitting the fever to our midst as in overlooking it after the first case has developed. . . . There is little danger when the first case is found and promptly handled in the recognized scientific manner."

Oklahoma.—Oklahoma has quarantined against Arkansas and the Indian Territory.

Tennessee.—Surgeon-General Wyman, United States Public Health and Marine-Hospital Service, replying to Memphis protests against Surgeon White's report of probable yellow fever in Memphis, wired to the state health officer as follows: "The report from yourself and from Secretary Hunter of the Mississippi state board is accepted here. I am satisfied with regard to the situation at Memphis as vouched for by yourself, Governor Vardaman and Secretary Hunter."——The State Board of Health has arranged for funds sufficient to maintain the quarantine until the coming of frost.

Texas.—State Health Officer Tabor addressed the McLennan County Medical Society on September 12.——Texas has quarantined against Memphis.——Galveston banks cashed the warrants necessary to keep the State Health Office in the necessary funds.

CANADA.

Winnipeg General Hospital.—The total number of patients treated in the Winnipeg General Hospital during the week ending August 19 was 326, of whom 201 were men, 81 women and 44 children; 60 out-patients were also treated.

Personal.—Dr. Allan Kinghorn, one of the house surgeons of the Toronto General Hospital, has been awarded the Johnston colonial scholarship in the University of Liverpool. He will take up original pathologic work, and succeeds a Canadian who held the scholarship last year.——Dr. J. Edwards of Grand Rapids, Mich., is visiting in Winnipeg.

Epidemic of Dysentery in Dawson.—A serious epidemic of dysentery is prevailing in Dawson and other points in the Klondike valley. Governor McInnes has convened a conference of the medical men of Dawson and outlying districts to ascertain, if possible, the cause of the disease and to inaugurate efforts to stay its ravages. Adults and children alike are suddenly prostrated with the disease, and numerous deaths have occurred.

Asylum Changes in Ontario.—Dr. Daniel Clark, for many years superintendent of the Toronto Asylum for the Insane, has resigned and has been succeeded by Dr. Charles K. Clarke, superintendent of the Kingston Asylum, who, in turn, is succeeded by Dr. E. Ryan, associate professor of clinical medicine in Queen's University. Dr. Charles E. Hickey, Morrisburg, Ont., has been appointed medical superintendent of the Coburg Asylum, replacing Dr. E. McNichol, who has been retired. Dr. John Williams, Lisle, Ont., has been appointed medical superintendent of the Asylum for Epileptics at Woodstock, Ont.

Canadian Medical Association.—The thirty-eighth annual meeting of the Canadian Medical Association was held at Halifax, August 22-24, and proved one of the best meetings in the history of the organization. The annual presidential address was delivered by Mr. John Stewart, M.B., Halifax; the address in surgery by Mr. Francis Caird, Edinburgh; the address in gynecology by Dr. Howard A. Kelly, Baltimore; the address in ophthalmology by Dr. J. W. Stirling, Montreal, and the address in medicine by Dr. D. A. Campbell, Halifax. The most important matter dealt with was the appointment of a special committee on reorganization, with Dr. A. McPhedran of Toronto as chairman. It was decided to meet in Toronto in 1906 at the same time as the meeting of the British Medical Association. The following officers were elected: President, Dr. Alexander McPhedran, Toronto; general secretary, Dr. George Elliott, Toronto; treasurer, Dr. H. Beaumont Small, Ottawa.

FOREIGN.

Esmarch Memorial.—The small town of Tönning, in Schleswig, Germany, was the scene August 6 of honors paid to F. von Esmarch, its famous son, when his statue was unveiled there. The municipality long ago placed a tablet on the house where he was born in 1823. The statue is more than life size and is a fine portrait of the great surgeon. It was erected by subscription, thousands wishing to show their appreciation of Esmarch's achievements in the systematic organization of first aid to the injured. It is not often that a scientific man is thus honored during his lifetime, but it is still less frequent for an untitled medical man to be the uncle by marriage of the reigning emperor of Germany. Esmarch married the Princess Henrietta of Schleswig-Holstein in 1872, one year before he published his views on the "Artificial Expulsion of Blood for Operations," describing the now familiar "Esmarch bandage."

Cholera in Germany.—It is reported by cable from Berlin that an official bulletin, issued September 8, announces that 19 new cases of cholera and 6 deaths occurred in the cholera-infected districts during the previous twenty-four hours. This makes a total of 123 cases and 39 deaths in the present epidemic. Berlin is placarded with posters warning householders to see that their premises are kept clean and the garbage properly disposed of, as cholera exists in eastern Prussia and communication with the affected districts can not be cut off. It is stated in one of the Berlin papers that some of the Berlin wholesale houses have sent circulars to their customers in infected towns instructing them not to communicate by mail with Berlin because of the danger of infection in the receipt of letters. It is also reported that cholera has broken out in Hamburg far from the points visited by Russian emigrants. An epidemic is feared, but it is being met by what is, perhaps, the most systematic preventive campaign ever undertaken. A sort of sanitary state of siege exists in the district that now extends from the river Oder northwestward to the Russian border, about 250 miles, and from Danzig to south of Posen, about 150 miles. But it is a state of siege in which all the inhabitants are auxiliaries of the medical authorities, and the only enemy is the terrifying cholera bacillus. The medical authorities are disseminating information by red placards, newspaper cautions and sanitary leaflets. Sanitary motor-boats patrol every stream, investigating river craft, seeing that waterside places and resorts are closed, and visiting the cholera stations established at intervals along the rivers. Every physician in the region is, in a sense, the agent of the Medical Council of War, which sits in Berlin. The commander-in-chief is Dr. A. Gaffky, and his special staff of 200 is being constantly increased. Conductors on the state railways are being taught the symptoms of cholera so as to be able to decide, when a person is sick on a train, whether the patient should be placed in a compartment by himself until a large town is reached where he can be sent off to a cholera station. Orders have been given to all employes who sell tickets or receive money from the public to disinfect their hands as often as possible. Dr. Fairfax Irwin, the surgeon in command of the Marine-Hospital Service at Philadelphia, has been ordered to Hamburg to study the cholera situation. He will be joined in Germany by Passed Assistant Surgeon McLaughlin, who is now stationed at Naples. Vigilant precautions are being taken at all the ports of entry of immigrants in this country. The cable and other reports speak of the epidemic in "West Prussia." This does not mean western Prussia, but the district of "West Prussia," bordering on Russia and the Baltic, in the northeastern part of the country.

Medical Consultant to the Muncipality.—As long ago as 1902 the local medical society of Cologne, Germany, petitioned the city council to appoint an *"arztlichen Beigeordneten"* to take charge of the matters for which municipal authorities are in the habit of asking the advice of physicians, or of putting through without any medical suggestions. Extraordinary expert knowledge and skill are required to deal properly with these matters, and the city should have a consultant constantly in its service. The authorities dismissed the appeal of the medical society at that time, but took it up again last year on the renewed solicitation of the society, and have finally created the office of a medical *Beigeordneten*, the first of its kind in any German city. His duties are defined as: 1, Suggestions for improved hygiene in all departments of municipal activity; 2, dwellings and health police, delivering of medical certificates, chairmanship of board of health and of board of oversight of police and dwellings; 3, vaccination; 4, supervision of health in the schools, contagious diseases among scholars and teachers, medical school inspectors; 5, responsibility for imposition of sentences; 6, oversight of food adulteration commission; 7, oversight of schools, hospitals and other public buildings from a hygienic standpoint; 8, membership on boards in charge of orphan asylums, hospitals, disinfection service, bacteriologic laboratory and free dispensaries; 9, member of school deputation, member of commission for meat, market and pure food inspection; 10, public baths, with membership in board in charge; 11, member of boards of vital statistics and medical statistics; 12, medical examination of government employes when taken into the service or granted leave of absence or pensioned. The local medical society is jubilant over its success in the creation of this new post. It regards it as most important progress. Medical skill and knowledge are here diverted into a new field which, when filled by a physician of exceptional training in hygiene and general matters, can not fail to be of the greatest benefit for the public welfare. The secretary of the medical society, in his annual report, comments further to the effect that "this enlarging of the sphere of medical activity will compel the profession more and more to look up, over and beyond the narrow confines of purely medical matters to the grander tasks of the community and of the state. For these the physician—perhaps more than the members of any other profession—is peculiarly fitted by his general and special training. Every physician now should strive to perfect himself more and more in general training, and to work with the greatest perseverance to help in solving the questions that confront the community and the state. This grand aim must not be obscured;" he adds, "by the recent efforts of the authorities to aid in perfecting the various medical specialties." The *Münch. med. Wochft.* states that Dr. Krautwurst, hitherto *Kreisarzt* for the Cologne district, has been appointed to the position.

New Prussian Law in Regard to Communicable Diseases.—The text of the new and long anticipated law is given in the *Deutsche med. Wochft.* for July 20 and 27. It is evidently a compromise measure. The original bill required compulsory declaration of cases of tuberculosis and of venereal diseases, but this was amended to declaration of cases of death from tuberculosis. Declaration of cases of venereal disease was first amended to read "in military circles," and then the clause was finally dropped altogether. The law is in eight sections. The first contains the regulations in regard to compulsory declaration of cases and deaths. According to previous laws this was required only for six diseases: leprosy, cholera, spotted typhus, yellow fever, plague and smallpox, but the present law adds 16 to the list; diphtheria, epidemic cerebrospinal meningitis, puerperal fever, trachoma, relapsing fever, dysentery, scarlet fever, typhoid, anthrax, glanders, hydrophobia and bites from rabid or suspected animals, poisoning from meat, fish or sausages, and trichinosis. The declaration must be made within twenty-four hours after learning of the case, the deposition to be made to the police authorities. Also every death from tuberculosis. The physician called to the case is held responsible for the declaration, otherwise the head of the household, the person taking care of the sick one, the householder and the official verifying the disease. The second section is devoted to the determination of the disease. If the sick person is in the care of a physician, the officials wishing to ascertain the facts in the case are not allowed to enter if the attending physician fears injury to the health or life of the patient from their entrance. Opportunity for objection should be given the attending physician before the officials enter. In case of puerperal fever or suspicion thereof, the officials must obtain permission from the head of the household before they can enter. On suspicion of typhoid or glanders, postmortem examination may be required if the attending physician regards it as necessary to complete the diagnosis. In case of diphtheria, trachoma and scarlet fever the local police authorities are required to determine the disease only in the first few cases, and only when they have not been already declared by a physician. The authorities are empowered to extend these regulations to include other diseases when they assume an epidemic form. The third section of the law is devoted to prophylactic measures which are defined in detail for each disease, leaving nothing to the judgment of the local authorities. In respect to diphtheria, compulsory isolation is required, but children need not be taken to a hospital or other place of isolation against the wishes of the parents if the attending physician or the medical official thinks that sufficient isolation can be realized at home. In puerperal fever the midwife or obstetric nurse is to be informed of the presence of the disease at once, and she must refrain from attendance on any other childbirth during and for eight days after leaving the first case, and then only after thorough disinfection of her body, clothing and instruments, under instructions from the medical official, who is empowered to shorten the interval at his judgment. In typhoid fever, besides the usual measures of isolation, declaration of case and location, and disinfection, all public gatherings may be forbidden if the disease assumes an epidemic character. Six months' imprisonment or a fine of $150 is the penalty for using or allowing others to use articles for which disinfection is required before the disinfection has been done. The penalty for disregard of the measure requiring compulsory declaration by the physician or other responsible person is arrest or a fine of about $38, which is also imposed for preventing the enforcement of the official measures or the entrance of the medical officials. One section of the law defines the details of indemnification of parties for articles destroyed or injured by the officials in their prophylactic duties. The claim for damages must be presented to the local police authorities within a month, although further delay may be granted under certain circumstances. Articles to be destroyed or injured by the officials must be appraised by experts before their destruction.

Marriages

A. E. Carney, M.D., Owasa, Iowa, at Asbury Park, N. J., August 23.

Arthur G. Neighbor, M.D., to Miss Minnie La Grue, both of Fowler, Ind.

Phil R. Polk, M.D., to Miss Hattie Hamilton, both of Silver Creek, Miss.

W. H. Steele, M.D., Hastings, Neb., to Miss Alice Kimball of Chicago, August 27.

Bert N. Estabrook, M.D., to Miss Olive M. Bast, both of Detroit, Mich., August 29.

Carl O. Imoberstag, M.D., to Miss Mabel E. Sperber, both of Toledo, Ohio, August 30.

Earnest Empey, M.D., Billings, Mont., to Miss Hallie Spear of Omaha, August 30.

Guy H. Hutchins, M.D., Bowdoinham, Maine, to Miss Hortense Bradford, September 6.

George A. Pugh, M.D., Kenosha, Wis., to Miss Nellie Ball of Stratford, Ont., August 29.

Weston H. Rice, M.D., to Miss N. Nelle Hopkins, both of Burlington, Vt., September 2.

W. S. Polk, M.D., Oakvale, Miss., to Miss Beulah Williamson of Goss, Miss., at Society Hill.

Fred Roderick Dew, M.D., to Miss Bertha Blanche Young, both of Salem, W. Va., August 30.

Hedlie V. Tweedie, M.D., Baltimore, to Miss Edith D. Hutson, at Rawlings, Md., September 6.

George M. Decherd, M.D., Austin, Texas, to Miss Pansy Green of Granger, Texas, August 30.

Charles Martin Wood, M.D., Decatur, Ill., to Miss Edith Loose of Illiopolis, Ill., September 12.

Blanchard B. Pettijohn, M.D., Indianapolis, to Miss Zelda Klingler of Zionsville, Ind., August 30.

Pern Jefferson Bidwell, M.D., Toledo, Ohio, to Miss Virginia Moyer of Colfax, Ohio, August 29.

T. Lee Van Giesen, M.D., New Castle, Pa., to Miss Mabel E. Manbeck of Lebanon, Pa., August 30.

Maurice M. Reichard, M.D., Philadelphia, to Miss Frieda Deutsch in New York City, September 3.

William A. Briggs, M.D., Bowling Green, Ky., to Miss Ida Mai Harrison of Alton, Ind., September 6.

Byron G. Monkman, M.D., Portland, Ore., to Miss Nellie M. Sauer of Bay City, Mich., September 1.

Mont R. Farrar, M.D., Greensboro, N. C., to Miss Annie Pleasants of Dilworth, N. C., September 14.

George Gill Mulheron, M.D., Nut Bush, Tenn., to Miss Lillie Mai Walker of Durhamville, Tenn., September 6.

Leroy Philip Kuhn, M.D., Palmyra, Wis., to Miss Bessie Margaret Patterson of Chicago, September 9.

Julius W. Boiarsky, M.D., Huntington, W. Va., to Miss Florence Greenwold of Cincinnati, September 5.

Ralph K. Keene, M.D., Wessington Springs, S. D., to Miss Wilma H. Rouse of Lakefield, Minn., August 29.

Frank Foulk, M.D., Des Moines, Iowa, to Miss Wallace of Independence, Iowa, at Des Moines, September 3.

William A. Williams, M.D., to Miss Edna Z. Bacon, both of Hurne, Mo., at Kansas City, Mo., September 6.

Fred Albert Simmons, M.D., Brockton, Mass., to Miss Geneva A. Cobb of Providence, R. I., September 6.

Edward C. Koenig, M.D., North Tonawanda, N. Y., to Caroline M. Osborne, M.D., at Phelps, N. Y., August 30.

P. Elwood Stigers, M.D., Hancock, Md., to Miss C. Virginia Barker of West Virginia, at Ellicott City, Md., August 21.

Benjamin Trowbridge Tilton, M.D., New York City, to Miss Anna Billings Griggs of Tacoma, Wash., September 14.

Patience S. Bordeau, M.D., Grand Rapids, Mich., and Henry N. Fisco of New York City, at Grand Rapids, September 6.

Clarence Philip Obenschain, M.D., Kerr's Creek, Va., to Miss Alice Virginia Kirkpatrick at Alone, Va., September 6.

Perry J. Payne, M.D., Jamestown, Pa., to Miss Jean L. Veach of New Castle, Pa., at Chautauqua, N. Y., August 30.

Neil Campbell Monroe, M.D., Rogers City, Mich., to Miss Bessie Kennedy Whiteley of Millersburg, Mich., September 6.

Arthur Preston Clark, M.D., New Hartford, N. Y., to Miss Mabel Angeline Robinson of Watertown, N. Y., August 30.

Blanche Rosalie Slaughter, M.D., Washington, D. C., and Mr. Baxter Morton of New York City, at Lynchburg, Va., September 6.

J. Scott McLeod, M.D., Boston, Mass., to Miss Minnie M. Detterick of Las Vegas, New Mexico, at New York City, September 9.

Deaths

Ephraim J. McCollum, M.D. Jefferson Medical College, Philadelphia, 1853, the oldest practitioner of Seneca County, Ohio, for many years a member of the American Medical Association and the Ohio State Medical Association; an honorary member of the Northwestern Ohio and Seneca County medical societies, beloved and esteemed by all, died at his home in Tiffin, Ohio, September 7, from heart disease, after an illness of four days, aged 85. A year ago the entire medical fraternity of the county celebrated the golden anniversary of Dr. McCollum's entry into practice and presented him with a silver loving-cup.

Milton H. Hardy, M.D. New York University, New York City, 1887, a member of the American Medical Association, and of the Salt Lake County Medical Society; superintendent of the State Mental Hospital, Provo, Utah, from 1896 to June, 1905; a prominent Mormon alienist; formerly superintendent of schools of Utah County, and later territorial superintendent of schools, died at his home in Provo August 23 from valvular heart disease, after a long illness, aged 60.

Siegfried Martus, M.D. New York University, New York City, 1889, New York City, member of New York County Medical Society, New York County Medical Association, Harlem Medical Association, German Medical Society, for fourteen years on the staff of Mt. Sinai Hospital, and medical adviser of the Hebrew Technical Institute, died at New York Hospital a short time after an operation for appendicitis, August 31, aged 43.

John Milton Davies, M.D. Penn Medical University, Philadelphia, 1854, said to have been the oldest practitioner in western Pennsylvania, an assistant surgeon and surgeon of the Ninth New Jersey Volunteer Infantry, post surgeon at Newberne, N. C., and acting mayor of that city during the Civil War, city physician of Erie, Pa., in 1872 and 1873, died at his home in Warren, Pa., September 5, from senile debility, aged 77.

Simon Mower Whistler, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1866, acting assistant surgeon in the Army during the Civil War; a member of the Medical Society of the State of Pennsylvania, died at his home in Harrisburg, August 17, after an illness of six weeks, aged 63.

Jacob S. Ammon, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868, sometime vice-president of the Banks County Medical Society; surgeon during the Civil War, died at his home in Reading, Pa., September 5, after an illness of more than a year, aged 68.

William M. Late, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1855, of Bridgeport, Harrison County, W. Va., died at the home of his daughter in Bordentown, N. J., September 5, after an illness of two weeks, aged 72.

Samuel H. Fee, M.D. Faculty of Medicine of Queen's University, Kingston, Ont., 1862; health officer of Kingston; formerly in the United States Army, and an alderman of Kingston, shot himself while suffering from melancholia August 31, aged 65.

Frederick William Billart, M.D. (Years of Practice) Indiana, 1897, for more than half a century a practitioner of Indiana, died from intestinal obstruction at his home in Chrisney, Ind., September 4, after an illness of two days, aged 73.

Joseph H. Green, M.D. Medical Department of the University of Cincinnati, 1860, one of the oldest practitioners of Miami County, Ohio; a surgeon in the Civil War, died at his home in Troy, September 6, aged 72.

George E. Carey, M.D. Medical Department of Western Reserve University, Cleveland, Ohio, 1885, of Salina, Pa., died at the home of his mother in Maple Shade, Pa., August 26, after an illness of four years, aged 47.

David Arthur Titus, M.D. Michigan College of Medicine and Surgery, Detroit, 1892, of Detroit, Mich., died at Port Arthur, Mich., August 15, from brain abscess following typhoid fever, after a short illness, aged 35.

James K. Castles, M.D. Memphis (Tenn.) Hospital College, 1900, assistant physician at the Shelby County Poor and Insane Asylum, died at his home in the First Civil District of Shelby County, August 15.

Henry Utley, M.D. New York University, New York City, 1899, surgeon of the Seventy-fifth Illinois Volunteer Infantry during the Civil War, died at the home of his son in Sterling, Ill., April 27, aged 82.

Charles Edwin Parker, M.D. University of Vermont Medical Department, Burlington, 1889, member of the Massachusetts Medical Society, died in Princeton, Mass., July 10, from carcinoma, aged 41.

Neal Hardy, M.D. University of Wooster Medical Department, Cleveland, Ohio, 1873, of Canton, Ohio, died suddenly at Hicksville, Ohio, August 28, from heart disease, aged 58.

William W. Bass, M.D. Berkshire Medical College, Pittsfield, Mass., 1835, surgeon during the Civil War, died at his home in Dorchester, Boston, July 21, after a long illness, aged 95.

William B. Cooper, M.D. Medical College of Ohio, Cincinnati, 1860, died at his home in Kokomo, Ind., from acute nephritis, September 6, after an illness of only two days, aged 70.

John D. Finnegan, M.D. University of Vermont Medical Department, Burlington, 1893, formerly of Ogdensburg, N. Y., died at his home in Moira, N. Y., August 26, aged 48.

John S. Curtis, M.D. Medical College of Ohio, Cincinnati, 1878, of Washington Court House, Ohio, died near Sedalia, Ohio, August 20, from heart disease, aged 55.

George W. Duncan, M.D. University of Louisville Medical Department, died from cancer of the face at his home in Franklin, Ky., September 8, aged 80 years.

John B. Gilman, M.D. University of Vermont Medical Department, Burlington, 1884, died at his home in West Pawlet, Vt., September 1, after a short illness.

Samuel T. Dickinson, M.D. Jefferson Medical College, Philadelphia, 1849, died at his home near Milford, Va., September 5, after a lingering illness, aged 76.

William E. Tarbell, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1868, died at his home in Athens, Maine, August 18, aged about 60.

E. H. Yancey, M.D. Macon, Ga., 1869, surgeon in the Confederate service during the Civil War, died at his home in Covington, Ga., July 1, aged 70.

Horatio Woodbury, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1882, died at his home in South Paris, Maine, July 9.

George Rice, M.D. Medical Institution of Yale College, New Haven, Conn., died at his home in South Framingham, Mass., April 18, aged 67.

Clement F. Ellerbrock, M.D. Baltimore Medical College, 1900, died at Deming, N. M., from tuberculosis September 2, aged 27.

Charles F. Dilley, M.D. Rush Medical College, Chicago, 1863, died at his home in Spickard, Mo., September 3, aged about 75.

George Henry, M.D. Long Island College Hospital, Brooklyn, 1860, died in Denver, Colo., April 23 from heart disease.

James A. Francisco, M.D. (Examination, Ohio), died recently at his home in Port Clinton, Ohio.

Carolyn Dewey Beebe, M.D. Colorado, 1903, died in Denver, Colo., March 13, aged 39.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE USE OF CARBOLIZED SPONGE TENTS.

Grand Rapids, Mich., July 25, 1905.

To the Editor:—If at all, in what uterine derangements would you consider it legitimate and good treatment, to use carbolized sponge tents?

A. B.

Answer.—The ease with which the aseptic dilator may be substituted for any legitimate purpose for which the sponge tent was formerly used makes the use of the latter no longer justifiable or desirable. Many prominent gynecologists and obstetricians never employ them. The writer of a well-known textbook on gynecology says: "I would limit their employment altogether to obstetric cases," while an examination of a number of recent authoritative text-books on obstetrics reveals no mention of sponge tents. Lest a biased opinion be given the dealers in surgical supplies were consulted and asked: "How often do you have a call for sponge tents?"

No. 1: "Almost every day."

No. 2: "We almost never have a call for sponge tents."

No. 3: "Frequently."

"Who is ordering them, city obstetricians and gynecologists or country practitioners?"

No. 1: "I might say neither; the call comes almost entirely from midwives. Some buy from four to six dozen at a time."

No. 2 said he had no midwife practice.

No. 3: "Our call comes almost entirely from the country."

The reader may judge for himself the use to which these articles are put. No efforts were made in any case to have the tents kept surgically clean.

An aseptic non-dilatable smooth foreign body may do damage if left in the uterus, a rough dilatable sponge tent whose fingers will insinuate themselves into the endometrium will do much more harm, and such a structure, septic as a sponge tent must always be considered, has dangers in its use beyond our power to estimate. It should be considered a relic of bygone days and important only in the history of the pre-aseptic period.

BOOKS ON MICROSCOPIC DIAGNOSIS.

Sylacaugo, Ala., Sept. 7, 1905.

To the Editor:—Will you kindly advise me as to the best textbook or compend suited to the use of a busy country doctor who has to do most of his own microscopy. I want a good, practical, abridged text giving each step in the technic clearly and concisely.

H. L. Castleman.

Answer.—Cabot's "Clinical Examination of the Blood" ($3.50, Wm. Wood & Co., New York) is excellent on the blood, and so is Ogden's "Clinical Examination of the Urine" ($3.00, W. B. Saunders & Co., Philadelphia), on the urine. Von Jaksch's "Clinical Diagnosis" ($6.50, J. B. Lippincott & Co., Philadelphia) is the most complete book on the whole subject, but is probably too technical. Simon's "Manual of Clinical Diagnosis" ($4.00, Lea Brothers & Co., Philadelphia) is probably best adapted to our correspondent's needs.

State Boards of Registration

COMING EXAMINATIONS.

Central District Indian Territory Board of Medical Examiners, South McAlester, October 2. Secretary, W. B. Caldwell, Hugo.

Utah State Board of Medical Examiners, Salt Lake City, October 2. Secretary, R. W. Fisher, Salt Lake City.

Board of Medical Examiners of Arizona, Phoenix, October 2-3. Secretary, A. Martin, Phoenix.

Idaho State Board of Medical Examiners, Boise, October 3. Secretary, J. L. Conant, Jr., Genesee.

Indiana Board Medical Registration and Examination, State House, Indianapolis, October 3. Secretary, W. T. Gott, Crawfordsville.

Board of Medical Examiners of Montana, The Capitol, Helena, October 3. Secretary, W. C. Riddell, Helena.

North Dakota State Medical Examining Board, Grand Forks, October 3. Secretary, H. M. Wheeler, Grand Forks.

Minnesota State Board of Medical Examiners, Old Capitol Building, St. Paul, October 3-5. Secretary, C. J. Ringnell, Minneapolis.

Rhode Island State Board of Health, State House, Providence, October 5-6. Secretary, G. T. Swarts, Providence.

Regular Board of Medical Examiners of Georgia, The Capitol, Atlanta, October 9. Secretary, F. D. Paterson, Cuthbert.

Michigan State Board of Registration in Medicine, Capitol Building, Lansing, October 10. Secretary, B. D. Harison, Sault Ste. Marie.

State Medical Board of the Arkansas Medical Society, Little Rock, October 10. Secretary, J. P. Runyan, Little Rock.

State Board of Medical Registration of Vermont, Y. M. C. A. Hall, Burlington, October 10-12. Secretary, W. S. Naya, Underhill.

Kansas State Board of Medical Registration and Examination, State House, Topeka, October 10-11. Secretary, G. F. Johnston, Lakin.

Board of Medical Supervisors of Washington, D. C., Washington, D. C., October 12. Secretary, W. C. Woodward, Washington, D. C.

Board of Medical Examiners of State of Texas, San Antonio, October 17. Secretary, T. T. Jackson, San Antonio.

State Board of Medical Examiners of New Jersey, Trenton, October 17-18. Secretary, E. L. B. Godfrey, Camden.

State Board of Health of Illinois, The Great Northern Hotel, Chicago, October 18. Secretary, J. A. Eagan, Springfield.

Louisiana State Board, New Orleans, October 20-21. Secretary, F. A. Larue, New Orleans.

Washington July Report.—Dr. C. W. Sharples, secretary of the Washington State Medical Examining Board, reports the written examination held at Seattle, July 5-7, 1905. The number of subjects examined in was 17; total number of questions asked, 100; percentage required to pass, 75, and 70 in case of applicants who graduated ten years previous. The total number of candidates examined was 94, of whom 77 passed and 17 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Rush Med. Coll. (1885) 87.5; (1900) 76.5; (1902) 87, 89.2; (1903) 77, 81.8, 84.6; (1904) 89.7; (1905) 90.7.		
Keokuk Med. Coll. of P. and S.	(1905)	83
Harvard University (1902) 88.8; (1904) 86;	(1905)	83
Bennett Med. Coll., Chicago (1893) 78.6;	(1905)	84.3
Med. Coll. of Virginia	(1896)	87
University of Virginia	(1905)	76.4
Creighton Med. Coll (1904) 80;	(1905)	81
Lincoln Med. Coll	(1901)	76.4
University of Buffalo	(1882)	77.2
Omaha Med. Coll (1895) 78.4; (1897) 80.1;	(1900)	75.3
Vanderbilt University Med. Dept	(1904)	89
Kansas City Med. Coll. (1893) 74.2; (1896) 82; (1900) 79.5; (1905) 76, 78, 81.7.		
Medico-Chirurgical Coll., Kansas City	(1905)	75
College of P. and S., St. Louis	(1895)	71.5
St. Louis University (1904) 78;	(1905)	77.1
University of Minnesota (1892) 80.7; (1897) 82.2; (1903) 80.1; (1904) 90; (1905) 85.5.		
Physio-Medical Coll. of Indianapolis	(1893)	70
College of P. and S., Chicago (1902) 75; (1904) 85; (1905) 78.5, 82		
Cooper Med. Coll (1904) 84; (1905) 82.1, 84.1, 86		
Ohio Med. University (1897) 80.1;	(1900)	75.5
University of Michigan (1902) 83;	(1904)	92
Hahnemann Med. Coll., Chicago (1898) 84.7;	(1904)	87
Northwestern University (1899) 76.6; (1901) 93; (1902) 83.4; (1905) 81.2.		
University of Leipzig	(1892)	90
University of California	(1904)	83
Bellevue Med. Coll	(1890)	70.5
Ensworth Med. Coll	(1904)	77.5
University of Pennsylvania	(1902)	83.5
Medical Coll. of Indiana	(1903)	76.8
Johns Hopkins University	(1902)	86.1
University of Southern California	(1903)	75
Trinity Med. Coll	(1900)	81
Tokio Med. Coll	(1896)	81.4
University of Oregon	(1905)	78, 90
Detroit Coll. of Medicine (1895) 88.7;	(1898)	76.2
College of P. and S., San Francisco	(1905)	78
McGill University	(1899)	89
Sioux City Med. Coll	(1901)	82.5
Columbia University	(1886)	91.3
Kentucky School of Med	(1903)	78.5

Washington (D. C.) July Report.—Dr. William C. Woodward, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, D. C., July 13, 1905. The number of subjects examined in was 17; the total number of questions asked, 80; percentage required to pass, 75. Forty candidates were examined, of whom 31 passed and 9 failed. Representatives of the following colleges passed:

PASSED.

College.	Year Grad.	Per Cent.
*Columbian University	(1904)	90.87, 85.56
Georgetown University	(1905)	93.96, 84.46
George Washington University,	(1905)	90.18, 86.12, 84.75, 79.40, 78.56, 82.78, 86.12, 81.75, 81.09, 88.06, 91.15, 80.56, 75.56, 85.28, 76.28, 90.65, 79.87, 86.37, 79.06, 91.56, 92.31, 85.03, 76.31, 84.15.
Hahnemann Medical College, Philadelphia	(1905)	90.59
Howard University	(1905)	75.34, 81.75

*Now the George Washington University.

Wisconsin July Report.—Dr. J. V. Stevens, secretary of the Wisconsin Board of Medical Examiners, reports the written examination held at Madison July 11-13, 1905. The number of subjects examined in was 13; total number of questions asked, 130; percentage required to pass, 75. The total number of candidates examined was 81, including one osteopath. Of these 71 passed. Representatives of the following colleges passed:

PASSED.

College.	Year Grad.	Per Cent.
College of P. and S., Chicago	(1905)	80.3, 80.8, 81.7, 81.8, 82.4, 83, 83, 83.2, 84, 84.7, 84.8, 85, 86.2, 88.2, 91.4
College of P. & S., Milwaukee	(1905)	78.8, 79.3, 81, 82.3, 82.5, 82.7, 83.2, 83.8, 84.3, 84.6, 86
Rush Med. Coll		75.8, 79.9, 81.7, 83.6, 84.4, 85.1
Northwestern University, Chicago		80.3, 81.3, 81.7, 82.5, 82.6, 83.8, 84, 84.5, 85.8, 86.4, 86.7, 88.7
Milwaukee Med. Coll.	(1905)	75, 75.2, 76.5, 77.5, 78.9, 81, 81.6, 82, 83.9, 84. 85.1, 85.3, 86.2, 86.5, 87, 87.8, 88.5.
Johns Hopkins University	(1904 88.1, (1905)	86.2
University of Michigan Med. Dept	(1904)	88.1
University of Michigan Med. Dept. (Homeo.)	(1904)	83
Queen's Med. Coll., Canada	(1904)	86.7
University of Minnesota	(1905)	83.5
American Med. Miss. Coll., Chicago	(1904)	85
Washington University, St. Louis	(1905)	82
National Med. Coll., Chicago	(1899)	84.9
Howard Med. Coll.	(1904)	82.4

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending September 9:

Krebs, Lloyd LeR., asst.-surgeon, ordered to duty with 1st battalion Field Artillery from Presidio of San Francisco to Camp of Instruction at the Henry Ranch, San Luis, Obispo County, Cal.

Moseley, E. B., deputy surgeon general, leave of absence extended thirty days.

Kieffer, Chas. F., surgeon, granted two months' leave of absence.

Asst. Surgeons Flagg, Charles E. B. (November 1), Lewis, Wm. F. (November 1), Kirkpatrick, Thos. J. (December 1), Chamberlain, W. P. (February 1), Browulee, Chas. Y. (November 1), Pyles, Will L. (November 1), Talbott, E. M. (November 1), Clark, John A. (November 1), Coffin, Jacob M. (November 1), Fife, James D. (November 1), Powell, Wm. A. (November 1), Kilbourne, E. D. (November 1), and Grissinger, Jay W. (November 1), are relieved from duty in the Philippines Division, to take effect on the dates opposite their names, and will proceed on first available transport to San Francisco, and on arrival report by telegraph to the Military Secretary of the Army for further orders.

Asst.-Surgeons Winn, Robert N., Fort McDowell, Cal.; Ashburn, P. M., Fort Missoula, Mont.; Peed, Geo. P., General Hospital, Fort Bayard, N. M.; Thornburgh, R. M., Fort Warren, Mass.; Shepard, John L., Army General Hospital, Presidio of San Francisco; Jean, Geo. W., Fort Adams, R. I.; Siler, Jos. F., Fort Meade, S. D.; Van Dusen, Jas. W., West Point, N Y.; Reilly, John J., Fort Slocum, N. Y.; Roberts, Wm. M., Fort Sill, O. T., and Van Poole, G. McD., Fort Stevens, Ore., are relieved from duty at the stations designated after their names, and will proceed to San Francisco, and take transport to sail about October 5 for Manila, P. I., where on arrival they will report in person to the commanding general Philippines Division for assignment to duty.

Gilchrist, H. L., asst.-surgeon, granted fifteen days' leave of absence.

Thoruburgh, R. M., asst.-surgeon, granted thirty days' leave of absence.

Van Dusen, Jas. W., asst.- surgeon, left West Point, N. Y., on leave of absence to September 25.

Pomeroy, Wm. H., contract surgeon, returned to duty at Springfield Armory, Mass., from ten days' leave of absence.

Merrick, John N., contract surgeon, returned to Fort Missoula, Mont., from practice march with command, to Flathead Indian Reservation.

Foster, Douglas E., dental surgeon, left Fort Jay, N. Y., and arrived at his home, Warrensburg, Mo., for annulment of contract.

Carpenter, Alden, dental surgeon, arrived at Vancouver Barracks, Washington, from detached service at Fort Walla Walla, Washington, and Fort Columbus, Washington.

Slayter, Ernest F., contract surgeon, returned to duty at Fort Hancock, N. J., from leave of absence.

White, J. S., contract surgeon, left Fort Snelling, Minnesota, on detached service with 7th Battalion, Field Artillery, en route to target range near Sparta, Wis.

Wertenbaker, C. I., contract surgeon, returned to duty at Madison Barracks, N. Y., from practice march to Ogdensburg, N. Y., with 3d Battalion, 23d Infantry.

Whltney, W., contract surgeon, arrived at Columbus Barracks, Ohio, for duty, from detached service with detachment of recruits en route to Fort McDowell, Cal.

Byars, Caspar R., contract surgeon, will proceed to Camp J. P. Story, Fort Sill, O. T., for duty, and on the breaking up of 2d Prov. Regiment, Field Artillery, will accompany 2d Battalion Field Artillery to his station, Fort Sam Houston, Texas.

Lauderdale, C. E., dental surgeon, leave of absence extended one month.

Waddell, R. W., dental surgeon, left Fort Leavenworth, Kans., for Fort D. A. Russell, Wyo., for duty.

Whinnery, Jean C., dental surgeon, reported at Fort St. Michael, Alaska, for duty.

Lemmon, Robert, contract surgeon, returned to duty at Fort McKinley, Me., from leave of absence.

Branch, F. D., contract surgeon, granted leave of absence for fourteen days.

Navy Changes.

Changes in the Medical Corps U. S. Navy, for the week ending September 9:

Crunwell, A. G., surgeon, detached from the Naval Hospital, New York, N. Y., and ordered to the *Wolverine.*

Richards, T. W., surgeon, detached from the *Arkansas,* and ordered to the Naval Recruiting Station, Baltimore.

Wright, B. L., P. A. surgeon, ordered to the *Arkansas.*

McClanahan, R. K., asst.-surgeon, detached from the Naval Recruiting Station, Baltimore, September 5, and ordered to Washington, D. C., September 6, for examination for promotion, and then to wait orders.

Lando, M. E., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the Naval Medical School, Washington, D. C.

DeValiu, H., acting asst.-surgeon, detached from the *Wolverine* and ordered home to wait orders.

DeLancy, C. H., P. A. surgeon, ordered to the *Paducah.*

Butler, C. St. J., P. A. surgeon, detached from the *Castine* when placed out of commission and ordered to the Naval Hospital, San Juan, P. R.

Page, J. E., P. A. surgeon, detached from the *Lancaster* and ordered home to wait orders.

Bachmann, R. A. Y., P. A. surgeon, ordered to the *Lancaster.*

Baker, M. W., asst.-surgeon, detached from the Naval Station, San Juan, P. R., and ordered home to wait orders.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the fourteen days ending September 6:

Sawtelle, H. W., surgeon, to proceed to Richmond, Va., for special temporary duty.

Magruder, G. M., surgeon, granted leave of absence for one month, from August 26, on account of sickness.

Gardner, C. H., P. A. surgeon, to proceed to New Orleans, La., and report to Surgeon J. H. White for special temporary duty.

Foster, M. H., P. A. surgeon, to proceed to Galveston, Tex., and assume temporary command of the service.

Stiles, Ch. W., chief Division of Zoology, granted leave of absence for 12 days from August 14.

Hunt, Reid, chief Division of Pharmacology, granted leave of absence for 10 days from August 21.

Hunt, Reid, chief Division of Pharmacology, to represent service at meeting of American Pharmaceutical Association at Atlantic City, N. J., September 4 to 9.

Richard, N. D., acting assistant-surgeon, granted leave of absence for 7 days from August 17, under the provisions of paragraph 210 of the regulations.

Stevenson, J. W., acting asst.-surgeon, to report at Washington, D. C., for special temporary duty.

Thompson, C. V., acting asst.-surgeon, granted leave of absence for 16 days from September 2.

Richardson, S. W., Pharmacist, to report at Washington, D. C., for special temporary duty.

McKay, M., pharmacist, relieved from duty at Boston, Mass., and directed to proceed to Cincinnati, Ohio, and report to acting assistant surgeon in charge for duty and assignment to quarters.

Woods, C. H., Pharmacist, on being relieved from duty at Cincinnati, Ohio, to proceed to Evansville, Ind., and report to medical officer in command for duty and assignment to quarters, relieving Pharmacist G. I. Van Ness, Jr.

Carlton, C. G., pharmacist, granted leave of absence for 7 days, from August 22, under the provision of paragraph 210 of the regulations.

Van Ness, G. I., Jr., pharmacist, on being relieved from duty at Evansville, Ind., by Pharmacist C. H. Woods, to report at Washington, D. C., for duty.

Vaughan, G. T., asst. surgeon-general, and Austin, H. W., surgeon, detailed to represent service at meeting of the Association of military Surgeons at Detroit, September 26-29.

Gassaway, James, surgeon, to proceed to Guthrie, Okla., for special temporary duty.

Irwin, Fairfax, surgeon, to report at Bureau, Washington, D. C., for special temporary duty.

Irwin, Fairfax, surgeon, to proceed to New York for special temporary duty, on completion of which to rejoin station at Philadelphia, Pa.

Banks, C. E., surgeon, to proceed to Jacksonville, Fla., for special temporary duty.

Williams, L. L., surgeon, to inspect the quarantine station at the Port of Baltimore, Md.

Woodward, R. M., surgeon, detailed to represent service at the meeting of the American Public Health Association at Boston, September 25-29, 1905.

Stoner, J. B., surgeon, granted two days' leave of absence from August 27.

Lavinder, P. A. surgeon, relieved from duty at New Orleans and directed to proceed to Natchez for special temporary duty, relieving P. A. Surgeon Goldberger.

Goldberger, Joseph, P. A. surgeon, to proceed to Memphis, Tenn., for special temporary duty.

Goldberger, Joseph, P. A. surgeon, to proceed to Bainbridge, Ga., for special temporary duty.

Trotter, F. E., P. A. surgeon, to proceed to Victoria, B. C., for special temporary duty.

McLaughlin, A. J., P. A. surgeon, relieved from duty in office of American Consul at Naples, Italy, and assigned in office of American Consulate at Hamburg, Germany.

Foster, A. D., asst.-surgeon, to proceed from Naples, Italy, to Trieste for special temporary duty.

Ashford, F. A., asst.-surgeon, relieved from duty at Ellis Island and directed to proceed to New Orleans, La., and to report to Surgeon J. H. White for special temporary duty.

Roehrig, A. M., pharmacist, to represent the service at meeting of the American Pharmaceutical Association at Atlantic City, N. J., September 4-9.

Richardson, S. W., pharmacist, to proceed to New Orleans and report to Surgeon J. H. White for special temporary duty.

APPOINTMENTS.

Dr. Marshall C. Guthrie of North Carolina, commissioned as assistant surgeon, Public Health and Marine-Hospital Service.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the period from August 19 to September 8:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, August 19-26, 1 case.
Michigan; Grand Rapids, August 19-26, 2 cases.

Ohio: Toledo, August 12-19, 1 case.
Tennessee: Memphis, August 19-26, 2 cases.
Wisconsin: Appleton, August 19-26, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, July 1-8, 1 case.

SMALLPOX—FOREIGN.

Brazil: Bahia, July 29-August 5, 1 death; Rio de Janeiro, July 23-August 6, 18 cases, 5 deaths.

Chile: Valparaiso, to August 9, 3,553 cases, 836 deaths.

China: Niuchwang, July 22, 1 case.

France: Lyon, August 5-12, 1 death; Paris, August 5-19, 76 cases, 11 deaths.

Great Britain: Cardiff, Aug. 12-19, 1 case; Liverpool, 1 case; London, July 29-Aug. 5, 3 cases.

India: Bombay, July 25-August 8, 6 deaths; Calcutta, July 22-29, 3 deaths; Madras, July 22-28, 3 deaths.

Italy: Catania, August 17-24, 1 death.

Russia: Moscow, July 22-August 12, 13 cases, 6 deaths; Odessa, August 5-19, 11 cases, 3 deaths; St. Petersburg, July 29-August 5, 3 cases 1 death.

Spain: Barcelona, August 10-20, 1 death.

YELLOW FEVER—UNITED STATES.

Florida: Pensacola, August 29, 3 cases.

Georgia: Atlanta, September 2, 1 case, imported.

Indian Territory: Mayville, September 1, 1 case, doubtful.

Louisiana: Acadia Parish, to August 17, 1 case; Ascension Parish, August 14-September 3, 21 cases; Assumption Parish, August 26-September 3, 6 cases; East Carroll Parish, August 14-September 4, 36 cases, 1 death; Iberville Parish, to August 31, 15 cases, 5 deaths; Jefferson Parish, to September 3, 149 cases, 14 deaths; Lafayette Parish, August 15-September 4, 2 cases; Lafourche Parish, to September 3, 331 cases, 31 deaths; Madison Parish, August 14-September 4, 9 cases; Orleans Parish, July 21-September 4, 2,075 cases, 292 deaths; Plaquemines Parish, to September 3, 23 cases, 2 deaths; Rapides Parish, August 15-September 3, 7 cases; St. Bernard Parish, to Sept. 3, 7 cases, 1 death; St. Charles Parish, 73 cases, 6 deaths; St. James Parish, 4 cases; St. John the Baptist Parish, 55 cases, 7 deaths; St. Mary Parish, 342 cases, 9 deaths; St. Tammany Parish, to August 22, 2 cases; Terrebonne Parish, to September 3, 66 cases, 3 deaths.

Mississippi: Gulf Quarantine, July 22-August 19, 53 cases, 1 death, on vessel; Hattiesburg, August 28, 1 case, diagnosis proved not yellow fever; Lumberton, July 28, 1 case; Mississippi City, August 22-September 4, 31 cases; Natchez, to August 30, 15 cases; North Gulfport, August 15-September 4, 32 cases; Pearlington, September 1, 2 cases; Vicksburg, August 30, 2 cases.

New York: New York Quarantine, August 1-12, 1 death, from S. S. *Advance,* from Colon.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, July 22-August 5, 16 cases, 6 deaths.

Mexico: Tezonapa, Aug. 20-26, 3 cases; Tierra Blanca, August 13-26. 1 case, 2 deaths; Vera Cruz, 5 cases.

Nicaragua: Leon, August 8, present; Managua, present.

Peru: Lima, August 12, 1 case, imported.

Panama: Bocas del Toro: August 11-18, 1 case; Colon, July 31-August 12, 6 cases, 2 deaths; Panama, 8 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, August 26, present.

CHOLERA—FOREIGN.

Germany: Hamburg, August 29-September 5, 2 cases, 1 death, first case imported.

India: Bombay, July 25-August 8, 2 deaths; Calcutta, July 22-29, 26 deaths; Madras, July 22-28, 145 deaths.

PLAGUE—INSULAR.

Hawaii: Waipahu, August 30, 1 death.

Philippine Islands: Manila, July 1-8, 3 cases, 2 deaths.

PLAGUE—FOREIGN.

Argentina: Santiago del Estero, July 20, recrudescence.

Australia: Queensland: Cairns, July 8, 1 case; Ipswich, July 5, 1 case, 1 death; New South Wales: Sydney, July 1-8, 1 case.

Brazil: Rio de Janeiro, July 22-August 5, 4 cases, 2 deaths.

China: Mukden district, July 22, reported.

Egypt: General, July 8-15, 11 cases, 10 deaths.

India: General, June 24-July 8, 4,338 cases, 3,943 deaths; Bombay, July 25-August 8, 102 deaths; Calcutta, July 22-29, 8 deaths; Madras, July 22-28, 1 death.

Japan: Chiba Ken, July 20, 1 death.

Panama: La Boca, August 26, 1 death.

Peru: Lima. July 10-20, 2 cases, 2 deaths.

Siam: Bankok, July 1, present.

Turkey: Beirut, July 17, 1 case, imported.

Coming Society Meetings

American Electro-Therapeutic Association, New York City, September 19-21.

American Association of Obstetricians and Gynecologists, New York City, September 19-25.

American Public Health Association, Boston, September 25-29.

Medical Society of the State of Pennsylvania, Scranton, September 26-28.

Association of Military Surgeons of the United States, Detroit, September 26-28.

Wyoming State Medical Society, Cheyenne, September 27-28.

American Roentgen Ray Society, Baltimore, September 28-30.

Mississippi Valley Medical Association, Indianapolis, October 10-12.

New York State Medical Association, New York City, October 16-19.

American Academy of Medicine, Chicago, November 7-8.

American Dermatologic Association, New York City, December 28-30.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Chronic Nephritis.

Damage done to a kidney can not be repaired is the basis on which Dr. A. C. Morgan, in *Med.-Chir. Jour.*, places his treatment toward prohibiting any advance of pathologic process. The complications which may arise in the course of a chronic interstitial nephritis are the chief causes of death, such as pneumonia, la grippe, cerebral hemorrhage, cardiac dilatation, pericarditis and inflammation of other serous membranes.

Uremia arising in the course of nephritis is a sign of broken compensation of the kidney similar to an incompetent heart. So in the administration of diuretics the same rule should hold good as in the treatment of heart lesions, and these remedies should never be used until actually needed.

Hygienic measures should be enforced in the treatment of chronic nephritis. Flannels should be worn the year round in order to keep the skin active and steady and to protect the patient from sudden changes of weather. If possible, a warm equable climate should be sought in the winter time. Social life should be abandoned and irregular hours of sleep avoided. Cold baths should be prohibited in order to avoid throwing too much work on the kidneys. Hot baths are of value in order to promote skin elimination and thus to relieve the kidneys. Baths may be given in the form of warm packs, Turkish baths, vapor or hot-water baths. Massage is of value when the patient is confined to bed for any reason. Rest in bed is recommended when the albumin is severe or persistent, or when the heart shows signs of weakness, and the patient should be required to remain in bed for ten hours out of the twenty-four to relieve the heart's action and to diminish the general activity. A large amount of water is required to replace the excessive excretion of water and to keep the solids in solution, avoiding, however, excess in this treatment, as the tension may be increased by the ingestion of too much water. Three quarts of water a day is said to be a proper amount. The carbonated waters are recommended to counteract the high acidity of the urine which is usually present. According to Millard, malt liquors are bad, spirits are worse and acid wines are the least harmful.

DIET.

As to diet, the nitrogenous foods must be decreased considerably, as they increase the secretion of urea. However, the diet must not be too much restricted, as the patient's strength must always be maintained. Coffee and tea must be used sparingly and milk used to a marked extent. Meat and gravies must be restricted; oysters may be eaten freely.

SYSTEMIC TREATMENT.

The object to be kept in mind is to inhibit or to arrest the sclerotic and degenerative changes and to overcome the anemia. Potassium iodid, hydriodic acid and mercuric chlorid are the preparations to be used in combating the first conditions, and arsenic and iron to correct the anemia. Iron is an astringent and a tonic, but must not be used, according to this writer, in too large doses, as excessive doses disturb the secretions and lead up to dangers of uremia.

If the conditions are such as to require a decrease in the arterial tension, such as flushing of the face, congestive headaches, vertigo and epistaxis, and if the heart is in good condition, veratrum viride or aconite is recommended over long periods, and glonoin is of service if the heart is weak. A low tensional pulse predisposes to serous effusions and a decrease in the daily elimination from the kidney, thus increasing the dangers of uremia, and this must be overcome. In such conditions digitalis combined with nitroglycerin is recommended.

Whether the fluid in the cavities be an exudate or a transudate it should be disposed of as rapidly as possible. If a transudate is present, increase the tension; if an exudate, absorptives or local applications are of service. If necessary the cavity may be tapped and an adrenalin solution injected which, the author states, prevents further accumulation of the fluid.

Saline cathartics are valuable in getting rid of fluid by absorption.

Counterirritation is of service in the parenchymatous form in which a marked congestion of the kidney is present. Dry or wet cupping over the kidney often relieves the congestion and improves diuresis.

Drowsiness is to be overcome by decreasing and restricting the solid diet, by increasing the fluids and elimination by means of purging, of sweating rather than by diuretics, which may be required later in the course of the disease.

Slight edema may be overcome by bandaging the limbs, rest in bed late in the morning, or rest in the middle of the day. If the edema still progresses other eliminants and diuretics must be employed, and if the limbs become large and the skin tense the skin may be punctured in many places and thus the fluid allowed to escape; in some cases the Southey tubes may be inserted. Erysipelas may be avoided in such procedures by careful attention to asepsis in the dressings.

Persistent vomiting or diarrhea are symptoms of toxemia. The former is relieved by washing out the stomach and the latter by diaphoresis and diuresis, but it should not be checked entirely, as it may bring on uremia.

Pruritus is due ordinarily to urea crystals irritating the skin. Hot baths followed by a 4 per cent. carbolic acid solution applied localy, or the infusion of conium leaves or chloral internally relieve the condition.

UREMIA.

When uremia develops, showing the failure in compensation of the kidney, venesection is indicated to rapidly eliminate the toxins, followed by an injection of the normal salt solution. When convulsions occur such preparations as caffein, scoparius, digitalis and convallaria are useful. If the heart is well compensated and does not enter into the cause of dropsy, the potassium salts, scilla and sweet spirits of niter are recommended to aid the function of the kidney. Asthma is frequently a symptom denoting the presence of a toxemia and disappears with the improvement, by eliminants, of the heart and kidney. Sometimes it is necessary to resort to chloral or morphin hypodermically in small doses, or perhaps to venesection.

Epistaxis sometimes occurs and indicates the necessity of lowering blood pressure.

Diaphoretics are indicated very early in the treatment as promoters of elimination and thus relieving the work of the kidney. They should be employed regularly, depending chiefly on hot water or hot-air baths. As to the medicinal agents as diaphoretics, sweet spirit of niter and liquor ammonia acetatis are preferable, using pilocarpin in emergency cases. Diuretics are of value only when the compensation of the kidney has failed and the urine is scanty and dropsy present. When indicated by poor heart's action and also to assist the kidney, the author recommends a hypodermic injection of morphin, followed the next morning by a hypodermic injection of pilocarpin. The author states that he has never seen any ill-effects follow the use of morphin when given in this way. The operation for stripping off the capsule of the kidney was not discussed by this writer.

Acute Nephritis.

Yeo recommends the following combinations in the treatment of acute Bright's disease:

℞.	Infusi jaborandi (1-45)	℥vi	180
	Syrupi aurantii	ʒv	20

M. Sig.: One tablespoonful every hour or two.

To relieve the anasarca in acute Bright's disease after the early acute symptoms have subsided, the following is recommended:

℞.	Tinct. ferri chloridi	ʒvi	24
	Liq. ammon. acetatis	℥iii	90
	Aquæ chloroformi	℥vi	180

M. Sig.: One tablespoonful in a wineglassful of water every four hours.

As a diuretic in acute Bright's disease he recommends the following:

℞.	Potass. citratis	℥ss	15
	Infusi digitalis	℥ii	60

M. Ft. mistura. Sig.: Two teaspoonfuls in aërated water every three hours.

In the chronic form the following combination is recommended as a diuretic:

℞.	Tinct. digitalis	℥ss	15
	Vini scillæ	℥iss	45
	Spts. etheris nitrosi	℥ii	60

M. Sig.: One teaspoonful in water every three or four hours.

For the general elimination the following is of value:

℞.	Potassii iodidi	gr. xv	1
	Sodii phosphatis	gr. xxx	2
	Sodii chloridi	gr. lxxv	5
	Aquæ q. s. ad	℥xx	600

M. Sig.: The entire amount to be taken in divided doses in the twenty-four hours.

As a tonic and diuretic the following is advised:

℞.	Tinct. ferri chloridi	℥ss	15
	Acidi acetici	ʒss	2
	Liq. ammon. acetatis	℥v	150
	Aquæ	℥ii	60

M. Sig.: One teaspoonful in water three times a day. Or:

℞.	Ferri sulph.		
	Sodii bicarb, āā	gr. lxxv	5
	Ext. taraxaci	ʒi	4

M. Ft. pil. No. lx. Sig.: Take three pills night and morning.

As a hydrogogue cathartic the following is of value:

℞.	Potassii tartarati	ʒi-iss	4-6	
	Pulv. jalapæ	gr. viii		5
	Pulv. cambogiæ	gr. i		06

M. Ft. chartula No. i. Sig.: To be taken at night and a similar dose the following morning.

To relieve the anasarca the following combination is also recommended by some authorities:

℞.	Potassii acetatis	ʒiiss	10
	Infusi digitalis		
	Infusi juniperi, āā	℥iii	90

M. Sig.: One tablespoonful every two to four hours.

Elaterin is a very efficient preparation to relieve the edema of the lower extremities and the abdominal ascites. It may be given in doses ranging from gr. 1/40 (.001) to gr. 1/20 (.003) and the dose repeated every two hours until a watery evacuation is produced.

Medicolegal

Rights Under Later, of Practitioner Under Former, Law.

The Supreme Court of Idaho holds (State vs. Cooper, 81 Pacific Reporter, 374), that under the provisions of section 5 of what is known as the "Medical Law of 1899," the Board of Medical Examiners are not empowered to call on applicants for a license for their diplomas, who were engaged in the practice of their profession under the law of 1887. Where it is shown that an applicant for a license to practice medicine and surgery was a resident of the state, engaged in the practice of his profession under the provisions of the law of 1887, and had complied with all the provisions of the law of 1899, the court holds that, in case the Board of Medical Examiners refused to issue his license, it was not criminal in him to pursue his profession. It was urged in this case by counsel for the state that the applicant should have resorted to his civil remedy by an appeal from the action of the Board of Medical Examiners to the district court, and there had the action of the board reviewed. It appeared that the board called on him for his medical diploma, which he sent to the board, who thereafter informed him that they did not and would not recognize the institution giving it as one having authority to issue a diploma to a doctor of medicine. The court says that when he received this notice he had the right to appeal from the action of the board, or he could treat their action as an infringement on his rights under the laws of 1887 and 1899. The statute of 1899 did not authorize the board to demand of him his diploma. He had furnished them all that they were entitled to under the law. They could not ignore the plain provisions of the 1899 law, and thereby make a criminal of a citizen of the state engaged in a legal and lawful business. If the Board of Medical Examiners could withhold a license from an applicant in this manner until he could appeal to the courts for redress, making a criminal of him every time he prescribed for or visited a patient, they could not only deprive him of valuable property rights, but ruin him in his profession, and brand him as a criminal. This is neither the spirit nor intent of the law.

Insanity and Expert Evidence.

The Supreme Judicial Court of Massachusetts says, in the homicide case of Commonwealth vs. Johnson, where the only defense offered was the insanity of the defendant at the time of the homicide, that on this issue it was competent for him to show that his ancestors or relatives had been insane, but the order in which the evidence should be introduced was wholly within the discretion of the trial court. A refusal to permit the cross-examination of the government experts on the relative value and reputation of medical authorities who had written on the general subject of insanity, as well as the exclusion of certain hypothetical questions addressed to them, were also discretionary. Nor is error found in the government having been allowed to question each of these experts as to whether he had formed any opinion, from his examinations and investigations and what he had heard in court, as to the mental condition of the defendant on date named, the physical and mental history of his family and himself, on which the questions were founded, having come solely from the defendant's statements, letters, and admissions or from his witnesses, and having been accepted as true, while it further appeared that each of the experts also had seen and examined him. Then, this question having been answered in the affirmative, and an opinion given that he was sane, followed by a similar reply to the further question, "What is your opinion of his sanity now?" the court says that if a question of this character, resting on the assumption of the truth of the evidence of a plaintiff alone, is admissible, which has been held, there is in principle no substantial reason why a medical expert, who has not made an examination of the patient whose physical or mental condition he is called on to determine, but has heard it described by witnesses at the trial, should not answer similar questions without their being hypothetically framed. By this form of examination no injustice is done, for whatever reasons, even to the smallest details, that an expert may have for his opinion, can be fully brought out by cross-examination. But here, as in other matters relating to the general management of trials, much must be left to the judgment of the trial court, which will not be revised unless the course pursued plainly was prejudicial to the legal rights of the defendant. Thus the length of hypothetical questions, or whether the facts assumed are within the hypothesis on which it is claimed the case rests, or whether a witness is professionally qualified, or is sufficiently acquainted with the history of the case to give an opinion, are as well within the reasonable exercise of this power as the order of presentation of evidence, etc. It further must be held that, as each of these experts also testified from personal observation of the defendant, a direct question calling for their opinion formed on such an examination would have been competent. As the case stood, their opinions rested on the assumption of the truth of the uncontradicted testimony, so far as material, which each had heard, considered in the light of the knowledge of his intellectual condition previously obtained from actual contact. The number of witnesses does not alter the practical operation of the rule, if there was no conflict of evidence, or the facts so complicated that there may be danger of the jury being confused and misled. But if the evidence is of a complicated and contradictory character, and such that it would be likely to be understood differently by intelligent jurors, the question should call for the facts on which the opinion is founded. Evidence descriptive of the attitude and appearance of the defendant when under scrutiny by one of the experts was entirely competent, either as being in the nature of a conversation with him, or as furnishing a reason for the opinion of the witness. But an exception taken to the omission of any instruction that experts, when testifying as witnesses, must state the grounds or reasons for their opinions, was untenable. If the defendant desired their reasons, his counsel were not precluded from asking for them on cross-examination. There is no general rule of practice which makes it imperative on the party calling such a witness, that, after he has been duly qualified and given an opinion, his reasons therefor also must be stated, though it is frequently done.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

September 2.

1 *Cryoscopy. T. Tieken, Chicago.
2 *Study of the Gastric Contents in Urticaria. L. K. Hirshberg, Baltimore.
3 Bacterial Flora of the Intestinal Mucosa and Conjunctiva of the Normal Chicken. W. E. King, Ithaca, N. Y.
4 *Arteriosclerosis Affecting the Nervous System. B. C. Loveland, Syracuse, N. Y.
5 *Etiology and Diagnosis of Early Tubal Pregnancy. W. E. Ground, Superior, Wis.
6 *Some Gynecologic Superstitions. L. Waite, Chicago.

1. **Cryoscopy.**—Tieken reviews the literature on the subject, and gives a résumé of the work done and conclusions drawn by various writers.

2. **Gastric Contents in Urticaria.**—In eight cases of urticaria, Hirschberg noted the frequent coincidence of hyperacidity in this condition. Five of his eight cases showed a high total acidity, with much free hydrochloric acid.

4. **Arteriosclerosis Affecting the Nervous System.**—Loveland says that arteriosclerosis affecting the nervous system naturally would be divided into three or possibly four classes: cerebral, spinal, peripheral and possibly sympathetic. Cerebral arteriosclerosis may be divided into a major and a minor type. The major type passes rapidly to apoplexy and paralysis or death, and has few symptoms early in its course. The minor type comprises a complex of symptoms which are the direct expression of the vascular change, exclusive of such accidents as hemorrhage and its consequences. The symptoms include fatigue or exhaustion of the brain; the inability to take up new work, while familiar work can still be done; headache, usually frontal and persistent, increased by stooping and abdominal pressure; slight vertigo and loss of memory—in fact, the symptom-complex so frequently associated with neurasthenia. Arteriosclerosis of the spinal cord has the same major and minor types, the former marked by small hemorrhages, paralysis and rapid degeneration and myelitis; the latter by the slower degenerations of the cord such as the locomotor ataxia following syphilis. The effect of arteriosclerosis on the peripheral nerves is well illustrated by intermittent claudication, Reynaud's disease, acroparesthesia and quite a variety of sensory disturbances in the extremities such as persistent coldness, formication, itching or burning sensations, and possibly the neuritis so frequent in gouty diabetes. The effects on the sympathetic nerves are not so easily recognized, but when the arterial trouble can be determined elsewhere such symptoms as cardiac irregularity, some vague nervous sensations associated with digestion, persistent flushing of the skin sometimes associated with albuminuria, may be attributed to this cause. The treatment is the same so far as medicine and diet are concerned as in general arteriosclerosis; the two points which make for the best success are early diagnosis and persistent, continued care.

5. **Etiology and Diagnosis of Early Tubal Pregnancy.**—Ground has operated in 28 cases of tubal pregnancy. Of these, 21 patients were operated on after rupture and 7 before rupture had occurred. In all prerupture cases abdominal sections were performed. Of the complicated cases 16 were suprapubic

and 5 vaginal. All the patients recovered. All had demonstrable lesions sufficient to account for the arrest of the fecundated ovum in the tube. The results of gonorrheal infection and minor postpuerperal lesions were most frequently noted as etiologic factors.

6. **Some Gynecologic Superstitions.**—Waite states that gynecology has been encumbered with numerous dogmatic theories which have been stated and restated so many times that they have been finally accepted by the profession without question and have become veritable superstitions. She takes up the questions especially of backache and constipation as symptoms supposed to be caused by retrodisplacements of the uterus and shows by statistics that both of these conditions are present in a large percentage of antipositions and absent in a fair percentage of retropositions. In 1,000 cases taken from her clinic at the Mary Thompson Hospital 44 per cent. of the patients with antiposition gave a history of backache and 41 per cent. of the patients with retrodeviation stated definitely that they did not suffer with backache. In 500 cases 52 per cent. of the patients with antiposition gave a history of constipation, and of the cases of retroposition 34 per cent. of the patients reported normal bowel movements. The question of childbearing as a remedy in dysmenorrhea is also discussed. Of 300 patients the question, "Have you more or less pain since the birth of your children?" 45 per cent. reported more pain, 30 per cent. less and 25 per cent. no difference. Waite believes that the practical application of the statistics relating to the clinical significance of retroposition of the uterus bears directly on the enormous amount of unnecessary operating which is being done under the false impression that the symptoms of which the patient complains are due to the position of the uterus and the complications which are in reality responsible for the symptoms are overlooked.

Medical News, New York.

September 2.

7 Prognosis in Syphilis. R. W. Taylor, New York.
8 Prognosis of Syphilis: Relations to Marriage and Heredity. P. A. Morrow, New York.
9 Dermoid Cysts of the Mediastinum. (Continued.) R. S. Morris, Ann Arbor, Mich.
10 *Social Status of Tuberculous Persons. W. W. Pennell, Mt. Vernon, Ohio.
11 *Medical Treatment of Nephritis. A. R. Elliott, Chicago.
12 *Care of the Perineum, with Description of a New Method of Delivery of the Shoulder. H. K. Kerr, Hammond, N. Y.

10. **Social Status of Tuberculous Persons.**—Pennell directs attention to the danger of infection from a tuberculous person, the many sources of infection and what should be done in the matter. He says that the public should understand that tuberculosis is infectious to susceptible people; that it requires intimate and continued contact for others, but that daily contact with many different tuberculous persons may act as continued contact with one person; that houses in which tuberculous persons have lived or died are infected houses, therefore unfit to live in until thoroughly fumigated and cleansed. When persons are suspected of having tuberculosis and refuse to employ a physician, a health board should send a competent medical man to examine such invalids. On the filing of such examiner's report, if the persons prove to be tuberculous, the movements of the affected individuals should comply with the regulations made for the restriction of those maladies which are dangerous to others. Pennell urges a just, humane and adequate segregation of all cases of pulmonary tuberculosis.

11. **Medical Treatment of Nephritis.**—Elliott states that recent contributors to the therapy of Bright's disease, including von Noorden and his school, confine their attention too strictly to the kidneys, whereas the disease is a widespread nutritive disturbance involving the organism as a whole with the nephritis as but one manifestation. He urges the necessity of careful examination of the patient in all respects, and the correction of any other functional perversion which may be found to exist in order to eliminate sources of systemic toxemia. Individualism in the management of this disease is absolutely necessary. The medical treatment is discussed under the headings of: 1, Nephritis without dropsy; 2, nephritis with dropsy; 3, uremia. Cases of nephritis without dropsy are chiefly examples of chronic interstitial nephritis during the stage of cardiovascular compensation. The main indications in the management of this type of chronic nephritis are protection of the kidneys from irritation, especially the strain imposed by intercurrent acute toxemias, and secondly, the maintenance of cardiovascular compensation. The first of these two indications is fulfilled by regulation of the patients' diet and personal hygiene. The amount of water to be drunk and the hygiene of the bowels are of particular importance. The management of cardiovascular compensation becomes essential in the regulation of high blood pressure. Elliott warns against unwarrantable interference with medicinal measures. Diet, hygiene and free elimination of the bowels accomplish the purpose best. If these fail, and the patient suffers from excessive pulse tension, vasodilator drugs may be administered. The action of the various nitrites, aconite and iodids for the reduction of blood pressure is discussed. In nephritis without edema, digitalis and other cardiac stimulants are to be withheld and diuretics are not only unnecessary but harmful. When dropsy is renal in origin, diuretics have next to no influence. Prolonged rest in the recumbent position, restriction of fluid intake, hypochlorization, diaphoresis, colonic irrigation, subcutaneous puncture and paracentesis are to be employed. If the dropsy is of cardiac origin, cardiac tonics, rest and restriction of fluids are the measures indicated. The value of iron in Bright's disease is also discussed. In the prophylaxis of uremia the author lays great stress on the employment of purgatives and enteroclysis with alkaline solutions. The value of blood pressure observations in anticipating the advent of uremia is dwelt on, and the action of venesection and lumbar puncture in relieving the high tension of uremia is described. Elliott deprecates the attitude of pessimism toward the prognosis of Bright's disease which is held by so many of the profession. He calls attention to Nature's wonderful powers of adjustment in damaged organic states, nowhere so marvelously displayed as in organic kidney disease, showing that assistance only is needed, seldom interference. The two most important indications in the treatment of chronic nephritis are to protect the patient from intercurrent acute toxemias and to maintain the compensatory adjustment in the circulation.

12. **New Method of Delivery of Shoulder.**—With the patient on her left side, the head being delivered and rotation affected, Kerr places his left hand on the right side of the child's head and presses back firmly. This stretches the perineum from its circumference, laterally and posteriorly, toward the center and anteriorly. Muscular contraction is thereby almost entirely overcome. The perineum is temporarily paralyzed and is elastic like rubber and can hardly be made to tear. By carrying the left shoulder back into the perineum the right shoulder is lowered into the pubic arch. When a pain occurs the left shoulder can not descend, because it is held well back and high up in the perineum. The right shoulder, on the other hand, descends, and as it does so it describes part of a circle around the left shoulder held as a fixed point high up in the perineum, so that the course of the right shoulder is downward and slightly backward, bringing the prominence of the shoulder well back into the vulvovaginal outlet and the right arm below the shoulder into the pubic arch. One pain is usually enough to bring down the right shoulder and cause it to bulge well out of the vulva. This accomplished, the fingers of the left hand, with which backward pressure is being made, low down on the back of the neck or upper end of the spine, are closed and the physician presses up. This increases the space between the back of the child and the maternal soft parts on the left side below and also opens the right axilla. Through this opening in the axilla the forefinger of the right hand is passed and hooked around the arm, close to the shoulder, bringing it down behind the child's back out of the vulva and sweeping it over the pubic arch. Then, before relaxing the grip with the left hand, the right hand is placed on the left side of the child's head and, with the left supporting the perineum, by a downward, forward and slightly upward movement, delivery is effected. Thus, before there is the slightest strain on the anterior part of the perineum, the long diameter—from the tip of one shoulder to the tip of the other (bisacromial)—is exchanged for the shorter diameter—from the axilla to the tip of the opposite shoulder (axilla-acromial) as a presenting part, the

difference again between laceration and practically no danger of laceration. This procedure is mainly applicable to uncomplicated cases, which are in the great majority. It can be employed in most forceps cases by removing the instruments.

Medical Record, New York.
September 2.

13 *Two Cases of Functional Strabismus. D. B. St. J. Roosa, New York.
14 *Food Factor in Uricemia. F. Hare, London.
15 *Tuberculosis Clinic at Gouverneur Hospital. S. S. Bradford and N. G. Seymour, New York.
16 *Cystoscopy and Ureteral Catheterization in Gynecology. H. D. Furniss, New York.
17 *Abuse of Bromids in Epilepsy. W. P. Spratling, Sonyea, N. Y.
18 *Convenient Points for Intramuscular Injections in the Treatment of Syphilis. V. C. Pedersen, New York.
19 Case of Acute Hemorrhagic Pancreatitis. C. M. Tinney, Charleston, Wash.
20 *Hospital Building in the Philippine Provinces. D. G. McCaskey, Buena Vista, P. I.

13. **Functional Strabismus.**—Roosa's first case did not yield to the treatment usually employed, but finally, after two and a half years, after all treatment except the use of the stereoscope and correcting glasses had been dropped, the intermittent strabismus ceased and has not returned. The other patient was cured by the use of glasses and exercises which involved exclusion of the good eye at intervals, and the use of the stereoscope. Now, at the end of eight years, the strabismus has disappeared, though correcting glasses are still worn.

14. **Food Factor in Uricemia.**—Hare analyzes the conditions, such as diet, exercise, pyrexia, neuroses, etc., which induce "pyremia" or uremic variations. He says that there seems to be little doubt that uric acid excretion depends directly on the introduction of uric-acid forming material, and inversely of the degree of pyremia. There will thus be at least a double column of variations in the excretion of uric acid. But since on a mixed diet, the introduction of uric acid material is for the most part approximately concurrent with the increase of "pyremia" due to meals, it follows that the resulting opposite variations in uric acid excretion will overlap and tend to obscure each other. The argument for the twofold causation of uricemia and uric acid excretion, seems, in his opinion, appropriately clinched by the following two pertinent observations: 1. The delayed excretion of uric acid which in the gouty follows the ingestion of uric-acid forming material. 2. The uniformity of uric acid excretion during starvation.

15. **Tuberculosis Clinic at Gouverneur Hospital.**—Bradford and Seymour state that 338 patients have applied for treatment at the hospital from October, 1903, to June, 1905. Two hundred of these were men, and almost one-half of the total number were Russians. Of the 338 cases 85 patients are still under observation, 120 have disappeared, 52 have gone to hospitals, to the country, or to their homes in Europe, 14 have been referred to other clinics as non-tuberculous, and 9 have died. Fifty-one patients have been discharged for insubordination. Seven patients have been discharged as "apparently cured," though they are requested still to report occasionally for observation. Such cases are those in which all constitutional symptoms and expectoration with bacilli have been absent for a period of three months, and the physical signs are those of a healed lesion. The authors believe that the clinic has accomplished four definite and excellent results: 1. It has withdrawn the tuberculous patients into a class by themselves, thus relieving the overcrowded medical clinic and providing some protection to non-tuberculous patients. 2. It has provided a place for the systematic treatment of ambulant cases of the disease in a district of the city thickly populated and extensively exposed to the contagion. 3. It reaches patients heretofore untreated, or treated irregularly and unsystematically. 4. The patients so treated have become a source of education in their homes rather than a menace to their associates.

16. **Cystoscopy and Urethral Catheterization in Gynecology.**—Furniss discusses the technic of cystoscopy, meatoscopy of the ureteral orifices, and ureteral catheterization. He gives the preference to an instrument of the water dilating variety, direct view with catheterizing attachment, as with this all of the bladder can be examined except the anterior wall, which is seldom affected, and catheterization of the ureters with a direct view instrument is far easier than with one of the prism type. The subject of ureteral meatoscopy is given much importance, and the use of the ureteral catheter in hysterectomies, stricture of the ureter, etc., is described. Furniss recommends lavage of the renal pelvis for pyelitis, but believes that the cases of Bright's disease reported benefited by this means were really ones of pyelitis with a few casts in the urine, rather than cases of true nephritis.

17. **Abuse of Bromids in Epilepsy.**—Spratling says that bromids have a limited range of usefulness in their power of suppressing epileptic convulsions, but he has never given the bromid of potassium to an epileptic, and says that the cases must be carefully selected for the use of the other salts. At the Craig Colony the average dose of the drug is 15 grains a day, 5 grains at a time. Spratling personally analyzed twenty-seven patent nostrums for epilepsy and found that the basis of all, without exception, was bromid of potassium. If recoveries occur under the use of the drug, it is in spite of it and not on account of it. When used the bromids must be prescribed with the greatest caution, and it is rarely necessary to push them to the point of producing acne. Their disadvantages are many, and it is preferable to use other harmless depressants in their stead, and to treat the individual instead of one of the symptoms of his disease.

18. **Intramuscular Injections in Syphilis.**—Pedersen describes and illustrates a plan of subdividing the two gluteal regions into four quadrants and making three injections in each of these in rotation in such a manner that the same spot is made the site of operation only once in thirteen weeks. He also describes the technic of injection.

20. **Hospital Building in the Philippines.**—McCaskey describes and illustrates the building of a bamboo hospital at Buena Vista.

Boston Medical and Surgical Journal.
August 31.

21 *Stokes-Adams Syndrome. T. J. Foley, Worcester, Mass.
22 *Ulcer and Cancer of the Stomach: Their Relationship. C. Graham, Rochester, Minn.
23 A Study in Abnormal Psychology. G. M. Parker, New York.
24 What the Suburban Surgeon Is Doing in the Abdomen and How He Does It. C. E. Durant, Haverhill, Mass.

21. **Stokes-Adams Syndrome.**—Foley reports two cases and gives a short résumé of the literatrue.

22. **Relationship of Ulcer and Cancer of the Stomach.**—Graham says that clinical experience shows that the great majority of ulcers of the stomach are located at the pyloric end. The immediate pylorus comes first, the lesser curvature second. A small percentage is found elsewhere, few at the cardia. The great per cent. of cancers of the stomach is found at the pylorus and lesser curvature (pyloric end), that is, the same locations find the greatest number of each. Quite a per cent. (50 to 60) of patients suffering from carcinoma gives three or more years of a precancerous history. A growing per cent. of cancer cases are found with short histories and ulcer demonstrated as the earlier lesion. A certain per cent., if small, of short ulcer histories leading to acute pyloric obstruction where the ulcer must have been present for quite a period, and latent. Ulcers may be present for an indefinite period and no symptoms follow until obstruction, perforation and hemorrhage appear, if the acidity is low or absent and the ulcer locates itself along the lesser curvature or near the pylorus. Cancers may develop under the same gastric conditions and only manifest themselves when obstruction or systemic poisoning makes itself felt.

New York Medical Journal.
September 2.

25 Resuscitation by Manipulation of the Heart of a Patient Apparently Dead from Shock. W. S. Conkling, Des Moines, Iowa.
26 The Mephisto of the Pale Brotherhood of Disease; Study of Masked Rheumatism, Based Not on Books, But Experience. G. F. Souwers. Philadelphia.
27 Tropical Diseases of the Angola Highlands. F. C. Wellman, Benguella, West Africa. (Continued.)
28 Six Lectures on the Diseases of the Blood. J. M. Swan, Philadelphia. (To be continued).
29 End Results in Surgery of the Kidney, Based on a Study of Ninety Cases, with One Hundred and Twenty-three Operations. A. Vander Veer, Albany. (Concluded.)
30 *Contribution to the Surgery of Perforating Gastric Ulcer. A. B. Mitchell, Belfast, Ireland. (Concluded.)
31 *Some Heart Points for Medical Examiners. R. Ellis, New York.
32 Further Research in Tuberculosis. J. D. Gibson, Denver, Colo.

30. **Gastric Ulcer.**—Mitchell reports 14 patients operated on, with 7 recoveries.

31. **Heart Points for Medical Examiners.**—Ellis calls attention to some errors made by examiners in interpreting heart findings and mentions points of distinction which will serve to guide examiners in estimating a risk correctly.

Lancet-Clinic, Cincinnati.

September 2.

33 Congestive Hyperemia in the Treatment of Acute Suppuration. M. Salzer, Cincinnati.
34 Recent Observations on the Action and Therapeutic Value of Currents of High Frequency and High Potential. C. Pope, Louisville, Ky.
35 Education and the Hygiene of the Nervous System. H. H. Hoppe, Cincinnati. (Continued.)

Physician and Surgeon, Detroit and Ann Arbor.

August.

36 Value of Statistics in the Study of Cancers. T. A. McGraw, Detroit.
37 Historical Sketch of the Nerves of the Female Genitals—The Pelvic Brain. B. Robinson, Chicago.

Ophthalmic Record, Chicago.

August.

38 *Origin of the Pain in Photophobia and the Blepharospastic Syndrome. P. Fridenberg, New York.
39 Zonular Cataract with Irideremia. Extraction of the Lens, which Had Become Entirely Opaque, in the Capsule, with Microscopic Examination. F. N. Lewis and E. S. Thompson, New York.
40 Case of Discoloration of the Cornea by Blood Pigment, and One of Hemorrhage into the Cornea. O. F. Wadsworth, Boston.
41 *New Instrument: To Shorten the Subjective Branch of Refraction and to Make it More Accurate. J. N. Rhoads, Philadelphia.

38. **Origin of Pain in Photophobia.**—Fridenberg distinguishes two classes of photophobia which differ in cause and mechanism, although both may be accompanied by similar external and superficial manifestations. 1. Specific, idiopathic, primary, retinal photophobia, representing a reflex from the optic nerve to the sensory branches of the trigeminus or ciliary nerve, or to the motor nerves of the eye and lids, and due to hyperesthesia of the nerve filaments engaged in light perception, or to excessive stimulation of normal structures. The discomfort in these cases is caused by intense "specific" stimulation of the retina; actual pain by iris cramp. This form is that observed in normal eyes suddenly exposed to glaring light, as in retinal asthenopia, neurasthenia, hysteria and perhaps in snowblindness. 2. Secondary, symptomatic, superficial, corneal photophobia, due to hyperesthesia of the sensory nerve terminals in the skin of the lids, cornea, conjunctiva, and ciliary body, as well is in the mucous membrane of the nose, in the maxillary antrum, teeth, and representing the reflex from the sensory fibers of the trigeminal nerve, and other nerves, to the motor branches of the facial. In this class of photophobia we have to deal with corneal or ciliary pain, absolutely independent of any process in the iris or retina. The most frequent causes of such pain are the irritation of the superficial nerve endings in abrasion or foreign body in the cornea, corneal ulcer, sympathetic iritis, cyclitis, ciliary wounds, and so forth. Of this form, which Fridenberg designates as pseudo-photophobia, or the blepharospastic syndrome, phlyctenular keratitis is a characteristic paradigm, and tonic blepharospasm the clinical expression.

41. **New Lens Holder.**—Rhoads has devised a lens holder which shortens the subjective branch of refraction and makes it more accurate. This instrument is six and one-half inches long, and contains a plus and minus lens of the same relative strength, that is, a plus 0.50 Sp., and a minus 0.50 Sp., or minus and plus quarters. The long straight shank has the minus lens attached to it and the short shank carries the plus lens. The short shank is movable and is held in place by a spring, but when its upper short end is pressed on it rises up parallel and directly over the long shank, and consequently the lenses neutralize each other, thus making a third glass. He also uses a pair of cylinders fastened to the same kind of shanks, which neutralize themselves in the same manner. The axes of the cylinders are placed parallel with and straight out from the shanks. The lens rings are one inch and a quarter in diameter. This instrument is just a little less important than Jackson's cross cylinder. It shortens the time consumed in refraction exceedingly, and renders the result far more accurate. After a patient has been shadow tested it rarely takes over five minutes with each eye to finish the refraction by this method. Owing to the short time it takes with this instrument and system, nervous and even illiterate women answer promptly and correctly, and thus are not tired out and sent home to their beds for a couple of days, as is quite often the result by the generally used method.

Journal of Cutaneous Diseases, New York.

August.

42 Follicles of the Skin and Conjunctiva. H. G. Anthony, Chicago.
43 *Location of Extragenital Chancres. D. W. Montgomery, San Francisco.
44 *Case of Chronic Pyogenic Onychitis Cured by the X-Ray. G. E. Pfahler, Philadelphia.

43. **Location of Extragenital Chancres.**—Of 67 cases of extragenital chancre Montgomery noted the location of the lesion in 58 as follows: Lips, 25; tongue, 3; corner of mouth, 4; abdomen, 5; anus, 3; fingers, 7; forearm, 2; and one each on gums, tonsil, cheek, eye, neck, breast, nates, wrist and back of hand. Twenty of the lip chancres, or nearly 68 per cent., occurred in women. In 17 of these cases the lower lip was the one affected.

44. **X-Ray in Chronic Pyogenic Onychitis.**—The case cited by Pfahler resisted all forms of internal and local treatment and yielded to the *x*-ray in three months. *X*-ray treatment was given three times a week, with the tube six inches distant, a two and one-half inch vacuum and five minutes' exposure, using about 1 mp. through the tube. Improvement was noted after two weeks. Twenty-five treatments in all were given.

Interstate Medical Journal, St. Louis.

August.

45 Differential Diagnosis of Organic Hemiplegia and Hysteric Hemiplegia. J. Babinski, Paris.
46 *Conservation of the Parietal Motor Nerves in Abdominal Section. V. P. Blair, St. Louis.

46. **Conservation of Nerves in Abdominal Section.**—Attention is directed by Blair to the necessity of conserving the motor nerves supplying the abdominal region when incising the parietes. He attempts to show how these nerves are to be avoided and to give the lines on which incisions may be made which will likely pass between the nerve trunks. He says of the various abdominal incisions that the least harmful is that made in the median line, either straight through or continued through the posterior wall of the sheath after the rectus has been drawn outward. It is only when these incisions are inadequate that we have to consider the nerves. Quite as harmless, if we avoid the nerve trunks, for it cuts no muscles is that made in the liniæ semilunaris. Some nerve fibers will be divided wherever we cut into muscle by any other method than proper splitting, but we can, in most cases, avoid the trunks. In the subcostal incision for approaching the gall bladder, which is four inches long parallel to and from one and one-half to two inches below the right costal border, the tenth and eleventh nerve trunks will be severed if the wall is cut straight through. The fibers of the internal oblique run parallel to the cut, so that it can be split, and in this way the nerves may be found and drawn aside. This might not be practical in the very stout. Even here part of the supply of the external oblique will be cut off, as it comes from the lateral branches. He advises approaching all obscure epigastric cases through an exploratory incision in the median line, and then, if a complicated gallstone operation requires more room, a cut can be made from the umbilicus toward the cartilage of the eleventh rib and a flap turned up containing the eighth, ninth and tenth nerves, and more room be gained than by any other incision. If it proves to be a gastric case demanding freer access, a supplementary transverse incision may be made between the eighth and ninth, or ninth and tenth nerves, preferably the former, which will not cut nerve trunks. Then, if the wound has been kept clean and well sutured, there need be no fear of hernia. In the splitting operation no nerves will be cut if Kocher's admonition is heeded, which is to use hooks and to tear the muscles apart. Practically the crooked thumbs are sufficient. Kocher's incision for appendicitis would most likely be below the twelfth nerve, provided the incision does not extend backward beyond the anterior iliac spine. The cut for suppurating cases, made one finger's breadth above the ligament, would in most cases go above the hypogastric

nerve. An extensive lumbo-lateral abdominal incision that cuts no nerves may be made as follows: A flap of any size may be raised by cutting from the tip of the last rib to the linea alba between the eleventh and twelfth nerves and then extending the incision in the median line. All of these may be modified so as to divide the rectus transversely. All incisions should be made to allow some variation, and it is only in through-and-through cuts that the variation can cause trouble.

American Journal of Medical Sciences, Philadelphia.

August.

47 Notes on Otitic Epilepsy. B. A. Randall, Philadelphia.
48 Two Fatal Cases of Brain Abscess. E. B. Dench, New York.
49 Orbital and Meningeal Infection from the Ethmoid Cells; Death. J. F. McCaw, Watertown, N. Y.
50 *Unusual Case of Edema of the Glottis. E. Mayer, New York.
51 Sarcoma of the Vomer, with Extensive Involvement of the Adjacent Structures and Metastasis in the Cranium. A. P. Herring, Baltimore, Md.
52 Lymphatic Drainage of the Faucial Tonsils. G. B. Wood, Philadelphia.
53 Obscurity of Diagnosis Sometimes Attending Stone in the Kidney. D. D. Stewart, Philadelphia.
54 Certain Hypertensive Crises in Arteriosclerotic Subjects. J. B. Briggs, Washington, D. C.
55 Tinea Versicolor in an Institution. H. J. Nichols, Washington, D. C.
56 Clinical, Bacteriologic and Metabolic Aspects of a Case of Traumatic Tetanus; Treatment with Tetanus Antitoxin; Recovery. H. Heiman, L. Buerger and E. A. Aronson, New York.
57 Epithelioma of the Vulva. H. Dittrick, Cleveland, Ohio.
58 Necrotic Stomatitis Following Measles and Pneumonia. R. M. Goepp, Philadelphia.
59 *Negative Value of Kernig's Sign. R. N. Willson, Philadelphia.
60 Diminutive Spleen. W. J. Calvert, Columbia, Mo.
61 Torsion of the Great Omentum. E. M. Corner and H. I. Pinches, London.
62 Congenital Tricuspid Stenosis Complicated by Mitral Stenosis. B. Stow, New York.

50. **Unusual Case of Edema Glottis.**—The point of interest in Mayer's case lies in the fact that the edema of the glottis was engrafted on a hereditary syphilis of the epiglottis, which latter never produced any noticeable symptoms relative to the throat, except a constant cough of twenty-eight years' duration. The absence of any initial lesion, as also of any evidence of the disease elsewhere, pointed strongly to the hereditary nature of the affection. The case also illustrates the advantage of prompt, free and deep incisions into the edematous tissue, thus avoiding the graver operation of tracheotomy, and emphasizes the value of adrenalin in the subsequent treatment of these conditions.

59. **Negative Value of Kernig's Sign.**—Willson examined 120 cases of all kinds for the purpose of determining the clinical value of Kernig's sign. As a result of his study he concludes that Kernig's sign is by no means a positive indication of either meningeal or brain or cord involvement, but that when present in association with other signs of meningitis it may be looked on as confirmatory to a high degree. Undoubtedly, in the majority of cases, it persists far into the convalescence, and is usually one of the last signs to disappear. In certain cases it probably remains as a permanent indication of a former undetermined lesion.

Bulletin Johns Hopkins Hospital, Baltimore.

August.

63 Surgical Physiology. G. W. Crile, Cleveland, Ohio.
64 Needle and Clamp for Injecting Lymphatics. W. S. Miller, Milwaukee.
65 Marcello Malpighii, 1628-1694. W. G. MacCallum, Baltimore.
66 *Typhoid Appendicitis Without Other Intestinal Lesions. W. R. Stokes and A. L. Amick, Baltimore.
67 Pathologic Anatomy of Exophthalmic Goiter. W. G. MacCallum, Baltimore.

66. **Typhoid Appendicitis.**—A case of typhoid appendicitis without other intestinal lesions is reported by Stokes and Amick. Thirteen years previously the patient had a very severe attack of typhoid. His last illness began with a severe pain in the entire abdomen, which later became localized in the right iliac region. This was followed by nausea, vomiting and slight diarrhea. An appendicectomy was performed, and the patient made a complete and uneventful recovery. The appendix was about three times the normal size and about midway between the tip and the intestinal attachment. The wall was thin and gangrenous and about to rupture from distension. The mucous membrane was covered in places with a dirty, gray, fibrinous membrane, and at its base there was an irregular ulcer. The lumen contained three soft, putty-like, light yellow concretions. The *Bacillus pyocyaneus* and *Bacillus typhosus* were found in stained sections. In some portions of the appendix the pathologic change corresponded to that seen in acute diffuse appendicitis, while in other portions where there was no surface ulceration the changes were more characteristic of typhoid, and were probably the reaction to the presence of the typhoid bacillus.

American Journal of Obstetrics, New York.

August.

68 *Report of Seven Cesarean Sections. J. D. Voorhees, New York.
69 Twisted Pedicle in Ovarian and Par-ovarian Cysts. A. Brothers, New York.
70 Treatment of Fibroid Tumors of the Uterus. J. W. Bovée, Washington, D. C.
71 Ciliated Cysts and Glands of the Uterine, Tubal and Pelvic Serosa. A. E. Blount, Oak Park, Ill.
72 *Relation of the Appendix to Pelvic Disease. R. Peterson, Ann Arbor, Mich.
73 *Inflammatory Conditions of the Appendix Accidentally Brought to Light in Pelvic Operations. H. Robb, Cleveland, Ohio.
74 *Appendicitis in Relation to Pelvic Disease and Pregnancy. A. L. Smith, Montreal, Canada.
75 *Reasons for Removing the Vermiform Appendix in Nearly All Cases in which the Abdomen is Opened for Other Lesions W. A. Baker, Boston.

68. **Cesarean Section.**—Voorhees reports seven Cesarean sections, and reviews the history of this operation as found in the literature. He concludes that Cesarean section is a dangerous operation only when infection is present; that there are too many fetal deaths from the other major operations; that in view of the low maternal mortality the field for Cesarean section should be broadened; that in contracted pelvis of a moderate degree (in the border line cases), a late induction of labor is justifiable; that when possible, difficult versions, prolonged forceps operations, and high forceps operations, performed in early labor, should be avoided. That craniectomy on a living baby is an operation only of necessity and emergency; that symphyscotomy is an operation of the past.

72.—See abstract in The Journal, Sept. 10, 1904, page 756.

73. **Id.**—June 10, 1905, page 1878.

74. **Id.**—June 17, 1905, page 1955.

75. **Removing Appendix When Abdomen Is Opened for Other Lesions.**—Baker cites cases to show that the presence of adhesions of, or fetal concretions within the appendix are not the only evidence of appendicitis which should influence the surgeon for its removal. The appearance of the normal appendix at the time of the operation has proved to be unreliable, as in three-fifths of the cases reported the patients were suffering from chronic appendicitis. The advantages to be derived as a prophylactic measure from the removal of the appendix, even in cases which prove normal, far outweigh the slight additional risk incurred by the operation. The great frequency with which appendicular troubles present themselves warrant not only the removal of the appendix, when it is easily accessible, when performing abdominal section for other lesions, but also the careful searching for and removal of it even though it may appear normal from its gross appearance.

American Journal of Urology, New York.

August.

76 Present-day Status of Tuberculosis of the Male Genital Organs. E. R. W. Frank, Berlin.
77 *Syringe Versus the Irrigator in Gonorrhea. F. C. Valentine and T. M. Townsend, New York.
78 *Some Untoward Results of Perineal Prostatectomy. G. S. Whiteside, Portland, Ore.

77. **Syringe versus Irrigator.**—Concisely stated, the position held by Valentine and Townsend with reference to the value of the irrigation treatment of gonorrhea is as follows: Even the mildest manifestation of gonorrhea spells a dangerous disease to the patient, to his wife, to his children and to the community. No honest, conscientious advocate of the irrigation treatment of gonorrhea ever claimed that a patient was cured before all the tests which present science demands have shown the permanent absence of gonococci. The irrigation treatment, like any other treatment, is positively dangerous, unless employed with caution, tact and gentleness. The immense numbers of gonorrheas successfully treated by irrigations, owe their recovery to the operator's gentleness and judgment. The technic of irrigations is not so difficult to acquire, but their successful employment requires the same scrupulous attention to details that is demanded by every other remedial measure in any other disease. The choice of

drugs used in irrigating solutions is not limited to potassium permanganate, silver nitrate or mercuric bichlorid, but is governed by the needs of each case. The guides for the selection of drugs and the strength of the solutions employed are, the condition of the discharge, the microscopic and cultural results, the character of the urine, and such involvements of the major and minor adnexa as may exist. Chronic gonorrhea is always dependent on infiltration of the urethral mucosa, involvement of the urethral crypts, glands and follicles, or invasion of Cowper's glands, the prostate or seminal vesicles, or all these; therefore, treatment of these extensions of the disease is necessary in conjunction with irrigations. When a patient with acute anterior gonorrhea comes under treatment before the adnexa are involved, he will escape complications, if irrigations are cautiously, skillfully, gently and judiciously employed. No other form of treatment will relieve pain and reduce discharge as quickly as do properly administered irrigations.

78. **Perineal Prostatectomy.**—A critical study of 238 cases, collected from many sources, leads Whiteside to say that perineal prostatectomy is considered by the majority of surgeons as the best operation in most cases. Immediate deaths result from sepsis, shock, cardiac disease, pneumonia and uremia. Remote deaths from cancer cachexia, pyonephritis embolism, and the result of secondary operations to overcome defects left by the first. Absolutely good results occur in about 30 per cent. of all the patients operated on. Sequelæ are numerous and troublesome. They include rectal fistula, urinary sinus abscess, stricture at the bladder neck, incontinence, frequency of micturition, residual urine, epididymitis, sexual impotence, cystitis, vesical calculus and urinary tuberculosis. Mistakes in diagnosis are not uncommon even in the experience of the most skillful. Carcinoma, sarcoma and syphilis have all proved stumbling blocks.

American Journal of Surgery, New York.

August.

79 Suture of Veins, Review of the subject. A. E. Isaacs, New York.
80 *Treatment of Hypertrophied Tonsils. J. T. Herron, Jackson, Tenn.
81 *Present Status of the Different Methods of Estimating the Functionating Capacity of the Kidney, with a Brief Account of Chromo-cystoscopy and Its Uses. M. S. Kakels, New York.
82 Paraffin in Surgery, Critical and Clinical Study. W. H. Luckett, and F. I. Horn, New York.
83 Treatment of Inguinal Hernia. C. B. Mallery, Aberdeen, S. D.
84 Treatment of Cancer by Thyroids Combined with X-Rays, Results in 1904. C. Am Ende, New York.

80.—See abstract in The Journal, May 6, 1905, page 1476.

81. **Estimating Functionating Capacity of Kidney.**—Kalkes considers chromocystoscopy the safest, simplest and most practical means of ascertaining the presence of the kidney. The existence of the second functionating kidney should always be assured before doing any cutting operation on the kidney, especially a nephrectomy. For practical purposes the function of the kidney is best determined by chromocystoscopy, by cryoscopy and by the phloridzin test. Of less importance for the surgeon, but of interest for laboratory investigations, are the determinations of the toxicity and electric conductivity of the urine. The most reliable method of obtaining the separate urine from each kidney is by ureteral catheterization, but this procedure requires special skill.

Western Medical Review, Lincoln, Neb.

August.

85 Hematuria of Kidney Origin. A. C. Stokes, Omaha, Neb.
86 Conservatism in Gynecology. A. B. Anderson, Pawnee City.
87 Clinical Picture and Treatment of Extrauterine Pregnancy. W. O. Henry, Omaha, Neb.
88 Pathology of Extrauterine Pregnancy. E. C. Henry, Omaha, Neb.
89 *Simple Method of Hystero-myomectomy by the Aid of a Dagger Clamp. H. M. Hepperlen, Beatrice, Neb.

89. **Use of Dagger Clamp in Hystero-myomectomy.**—The method described by Hepperlen is somewhat similar to Kelley's method. The patient is placed in the horizontal position. The abdominal incision does not exceed three inches, except when the tumor is a very large one. After the tumor is delivered a hot, sterile towel is placed snugly in the opening, having the edges come well around the neck of the tumor. The bladder is freed, if it is attached, and if the neck of the tumor can be well drawn up, Hepperlen inserts the dagger of his clamp through the center of the neck, from right to left, leaving as much of the cervix as is necessary. He then applies the clamp over the dagger, which can be drawn up to any size desired, and clamps over the neck of the growth. The ovarian arteries are then ligated on either side close down to the clamp and the tumor removed by making a "V"-shaped cut from either side of the neck down to the dagger. The uterine arteries and veins are picked up and tied twice with Tait's fine table-twist silk. Both sides of the clamp are then opened, one at a time, to see that all hemorrhage is controlled. The stump is then closed over with catgut sutures, from four to six in number, leaving them long so that the stump can be held up by them after the dagger is removed for the purpose of inspecting the large vessels. With the fine catgut suture the whole field is closed over from left to right by stitching the peritoneum over the ovarian vessels and stump, as recommended by Kelley. In the beginning of the operation, should there be adhesions which bind down the tubes and ovaries in the broad ligaments, the ovarian arteries are ligated and cut down on each side of the broad ligaments. This makes it very easy to raise the neck of the tumor up far enough to insert the dagger as low as desired. Hepperlen says that the operation is bloodless; that it can be done in less than half the time required by any intraperitoneal method; that there is less exposure of the internal viscera and less shock, with a lower mortality, than from any other method.

Iowa Medical Journal, Des Moines, Iowa.

July 15.

90 President's Address. D. C. Brockman, Ottumwa.
91 Most Powerful Light in the World—to be Used in the Treatment of Tuberculosis. J. W. Kime, Ft. Dodge.
92 Traumatic Glaucoma. A. R. Amos, Des Moines.

Interstate Medical Journal, St. Louis, Mo.

July.

93 Superstition in Medicine. M. G. Seelig, St. Louis.
94 Brief History of Preventive Medicine. G. C. Crandall, St. Louis.
95 Sir Kenelme Digby, 1603-1665. J. M. Ball, St. Louis.
96 Osteology and the General Practitioner. V. P. Blair, St. Louis.
97 Proper Diet in the Tropics. H. W. Wiley, Washington, D. C..

Northwest Medicine, Seattle, Wash.

July.

98 Electric Injuries. E. R. Edson, Seattle, Wash.
99 Medical Treatment of Gallstones. H. Richardson, Baltimore. Md.
100 Prophylaxis of Syphilis and Its Sequelæ. W. House, Portland. Ore.

California Medical and Surgical Reporter, Los Angeles, Cal.

July.

101 Address Delivered Before Graduating Class of Pacific Hospital Training School for Nurses of Los Angeles, May 13, 1905. J. L Hagadorn, Los Angeles.
102 Clinical Course of Arteriosclerosis and Chronic Vascular Hypertension. D. Fulton, Los Angeles.
103 General Medical Library for Los Angeles. R. Moore, Los Angeles.
104 Infancy and Adolescence. W. A. Edwards, Los Angeles.
105 Diagnosis of Surgical Lesions of Kidneys. C. D. Lockwood. Los Angeles.

Medical Herald, St. Joseph, Mo.

July.

106 Treatment of Puerperal Fever. R. C. Moore, Omaha.
107 Diagnosis of Puerperal Fevers. R. T. Sloan, Kansas City.
108 Chorio-Epithelioma Malignum. A. P. Condon, Omaha.
109 *Acute Epidemic Dysentery. L. B. Pilsbury, Lincoln.

109.—See The Journal, July 15, 1905, page 183.

Archives of Pediatrics, New York.

July.

110 Medical Supervision of Schools and the Progress of School Hygiene. C. G. Jennings, Detroit.
111 Important Differential Points in Diagnosis of Sporadic Cretinism, Mongolism, Achondroplasia and Rachitis. C. Herrman. New York.
112 Chemistry of Cow's Milk. L. L. Van Slyke, Geneva, N. Y.

Journal of Ohio State Medical Association.

July.

113 Surgical Diagnosis in General Practice. J. B. Roberts, Philadelphia.
114 President's Address, Ohio State Medical Association. Sixtieth Annual Meeting. S. S. Halderman, Portsmouth, Ohio.
115 Address of Welcome to Ohio State Medical Association, May 10, 1905. S. Loving.
116 Early Recognition of Glaucoma. S. C. Ayres, Cincinnati.
117 Three Cases of Mushroom Poisoning. S. G. Sewell, Greenville, Ohio.

Journal South Carolina Medical Association, Charleston.

July 21.

118 Appendicitis. L. Guerry, Columbia.
119 Pediatrics, Past, Present and Future. E. A. Hines, Seneca.
120 Acute Lobar Pneumonia. J. H. Allen, Spartanburg.

121 Fractures of Every Limb; Recovery. M. J. D. Dantzler, Elloree.
122 Cerebrospinal Meningitis: Hydrophobia. D. Furham, Greenville.

Medical Sentinel, Portland, Ore.

July.

123 Pathology of Lachrymal Gland in Hereditary Syphilis. Wm. L. Wood, Portland.
124 Facts Concerning Bald Heads. H. M. Shaw, Portland.
125 Paratyphoid Septicemia Report. W. C. Belt, Portland.
126 Progressive Muscular Atrophy. R. L. Gillespie, Portland.
127 President's Address, Portland City and County Medical Society. J. F. Dickson, Portland.

Postgraduate, New York.

July.

128 Patient Cured of Tubercular Disease of Ankle Joint by Excision, and One Cured of Hip-joint Disease. W. O. Plimpton, Brooklyn.
129 Case of Idiopathic Atrophy of the Skin. R. Abrahams, New York.
130 Case of Cystic Kidney. S. S. Burt, New York.
131 Epidemic Cerebrospinal Meningitis. W. H. Porter, New York.
132 Amebic Dysentery Treated by Appendicostomy. E. W. Peterson, N. Y.
133 Contribution to Study of Strabismus, with especial Reference to the Operation of Panas for Its Relief. E. S. Peck, New York.
134 Syphilitic Lesions of Nose and Throat. C. Graef, New York.

American Journal of Surgery, New York.

July.

135 Etiology and Treatment of External Biliary Fistula; Report of Case Due to Stricture at Neck of Gall Bladder. L. W. Allen, San Francisco, Cal.
136 Technic of Cervical Sympathectomy. W. F. Campbell, Brooklyn, N. Y.
137 Etiology and Pathology of Appendicitis, Based on Clinical and Bacteriologic Examination of Twelve Cases. W. Lenehan, Nashville, Tenn.
138 Etiology, Diagnosis and Treatment of Mastoiditis. W. C. Phillips, N. Y.
139 Inversion of Uterus. P. L. Markley, Rockford, Ill..
140 Paraffin in Surgery, Critical and Clinical Study. W. H. Luckett and F. I. Horn, New York.

Texas Medical News, Austin.

July.

141 Scabies. E. A. Blount, Dallas.

American Practitioner and News, Louisville, Ky.

August.

142 Hysteria. O. R. Reesor, Louisville.
143 Gastric Ulcer. J. R. Morrison, Louisville.
144 Tonsillotomy. G. M. Peavler, Louisville.
145 Appendicitis. C. W. Fleenor, Holston Valley, Tenn.
146 Duty of Medical Examiners. H. N. Leavell, Louisville.
147 Osteopathy. D. Graham, Boston, Mass.
148 Reflex Ovarian Conditions, Their Causes, etc. A. D. Willmoth, Louisville.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 19.

1 Abdominal Surgery During the Last Twenty-five Years. G. S. Hatton.
2 Physical Degeneration and Syphilis. F. J. Lambkin.
3 Dynamic and Hydro-Dynamic Effects of Modern Small-bore Cylindro-Conoidal Projectiles. C. M. Beadnell.
4 Feeding of the Soldier on Active Service. G. S. Robinson.
5 Care of Soldier's Feet. G. S. Crawford.
6 Suggestions for First-aid Treatment of Fractured Thigh in Military or Civil Practice. J. J. de Z. Marshall.
7 Dysentery and Its Treatment on Active Service. G. A. Hutton.

The Lancet, London.

August 19.

8 Chemical Correlation of the Functions of the Body. E. H. Starling.
9 *Congenital Hypertrophic Stenosis of the Pylorus, Successfully Treated Without Operation. W. J. Harper and J. R. Harper.
10 *Subdiaphragmatic Transperitoneal Massage of the Heart as a Means of Resuscitation. H. M. W. Gray.
11 Presence of Pigment Containing Iron in the Thyroid Gland. G. L. Gulland and A. Goodall.
12 *Case of Mixed Leukemia. C. H. Browning.
13 Notes on Abdominal Surgery Based on Completed Records of 744 Cases. (Continued.) E. S. Bishop.
14 Continuity of the Several Cavities of the Middle Ear. A. H. Young and W. Milligan.
15 General Staphylococcic Infection Treated by Antistaphylococcic Serum and Hetol; Death. E. F. Maynard and F. G. Bushnell.
16 Elementary State Schools and the Spread of Contagious Diseases of the Skin. P. S. Abraham.
17 Staining Reactions of the Spirochetæ Found in Syphilitic Lesions. L. S. Dudgeon.
18 *Two Cases of Addison's Disease and the Effect of the Administration of Suprarenal Extract. A. G. Gullan.

9. **Congenital Hypertrophic Stenosis of Pylorus Treated Without Operation.**—About three weeks after birth, the Harpers' patient began to manifest the symptoms of pyloric stenosis, and these were confirmed by careful physical examination. The question of operative interference was frequently discussed during the earlier stages of the child's condition, but was abandoned owing to the apparently hopeless condition. Abdominal massage with cod-liver oil was resorted to in despair, and from the progress of the case it was evident that a certain amount of oil was absorbed through the skin, and to this fact the authors attribute a certain proportion of the success of the treatment. The infant also received injections of normal saline solution, about half a pint, twice daily, and small quantities of peptonized milk and water every two hours for about four weeks, and with but few additions for three months. In massaging the abdomen, particular attention was paid to massage of the stomach wall toward the pylorus. The authors appear to consider the massage and the saline injections the essentials of the treatment.

10. **Subdiaphragmatic Transperitoneal Massage of Heart.**—Gray's patient was apparently dead from a cancerous obstruction of the larynx. There was no pulse at the wrist, no cardiac impulse, no cardiac sounds, and all the evidences of death were present. The abdomen was opened in the middle line immediately under the xiphoid cartilage, and through this opening the heart was massaged about four minutes, the rate of compression being from 70 to 90 per minute. After ten minutes of massage, the heart began to beat and the patient took a rather deep spontaneous breath. Slight hemorrhage occurred from the abdominal wound. The patient died about three hours afterward, having never regained consciousness.

12. **Mixed-Cell Leukemia.**—A case of this kind is reported by Browning occurring in a man, aged 57. He summarizes his paper as follows: 1. Myeloid leukemia is due to a hyperplasia of myeloid tissue; but the unknown causative agent is irregular in its action, so that any of the various granular types may predominate or a mixed-cell blood picture may result from the reversion of many of the cells to the condition of the non-granular undifferentiated leucoblast or from the hyperplasia of such non-granular cells normally present in the marrow in small numbers. These undifferentiated leucoblasts may assume their embryonic activity and secrete granules. 2. In leukemias a mixed-cell blood picture may be due to: (a) a reversion of myeloid cells to the embryonic non-granular type; and (b) a reaction or mechanical disturbance of myeloid tissue owing to lymphoid hyperplasia with as a result the passage of myelocytes into the circulation. 3. It is to be understood that it is left quite an open question as to whether or not myeloid and lymphoid tissue may be concomitantly affected in a way similar to what occurs in myeloid and lymphoid leukemias, respectively. If such occurred then we should have a mixed leukemia, in the strict sense.

18. **Addison's Disease.**—The special points of interest in the two cases reported by Gullan are the severity and rapid progress of the disease in one of the cases, though the lesion was that of chronic tuberculosis of the suprarenal bodies, plus secondary inflammation of the neighboring sympathetic, and the little benefit derived from the administration of suprarenal extract, so that the patient easily stood the strain of pregnancy and parturition, are the points of interest. The suprarenal extract was given in doses of up to 20 grains three times daily, beginning with a five-grain dose.

Indian Medical Gazette, Calcutta.

August.

19 Treatment of Fractures. F. W. Sumner.
20 Two Cases of Pneumococcus Septicemia with Some Remarks on Pneumonia as Seen on the North-West Frontier of India. F. N. White.
21 *Obscure Irregular Continued Fevers of the "Typhoid" Group and Their Probable Relation with Different Species of Bacilli of the Typho-Coli Race. R. Row.
22 Preliminary Paper on Extirpation of the Lachrymal Sac in India. R. H. Elliot.
23 *Plague Infection and Flies. F. N. Windsor.
24 Bactericidal Power of Lieutenant Nesfield's Method of Purifying Drinking Water and Sterilizing Water for Surgical Purposes. F. N. Windsor.
25 Puerperal Convulsions. A. M. Dallas.

21. **Typhoid in India.**—Although for many years it was a disputed point whether or not the natives of India could ever

contract typhoid, the results of recent observations on this subject, according to Row, may be taken to leave no doubt that these natives not only do get the disease, going through the usual clinical course, but also that the nature of the disease can be verified both bacteriologically and, when occasion arises, postmortem. Row has confirmed this belief by a careful study of twenty-three cases.

23. **Flies and Plague.**—The experiments and investigations made by Windsor with a view of obtaining evidence for or against the conveyance of plague infection by flies showed that flies which have had access to material containing plague bacilli (i. e., the plague blood in the watch glass) can carry infection and inoculate a wound. Hence, the sputum from a case of pneumonic plague and the juices of a fresh plague body (as in a postmortem room) may be a grave source of danger Such flies do not appear to convey infection by means of food on which they settle. Flies which have had access to a plague body, but not to the fresh juices or blood, do not appear to be a source of danger. It is almost certain that the juices arising from decomposition do not contain living plague bacilli. In the experiments the absence of fleas from all the rats was insured.

Australasian Medical Gazette, Syndey.

July 20.

26 Cases of Arrested Pulmonary Tuberculosis from King's Tableland Sanatorium, N. S. W. M. M. Sinclair.
27 Trend of Modern Midwifery. J. R. Purdy.
28 *Use of Liquid Air in Surgery and Skin Diseases. T. G. Beckett.
28½ Catarrh. C. L. M. Iredell.
29 *Preliminary Communication on the Treatment of Arteriosclerosis. E. Hirschfeld.
30 Two Cases of Hypnotic Treatment. R. T. Michell.
31 Sudden Case of Goiter. W. Macansh.

28. **Liquid Air in Surgery and Skin Diseases.**—Liquid air, if applied to the skin lightly and cautiously repeated for a few minutes, Beckett says, will produce a refrigerating effect of any degree of intensity desired, with a resulting complete local anesthesia under the influence of which small surgical operations can be done. If applied too freely and for too long a time, frost-bite effects are produced, even to causing ulceration of the skin. The application is not painful unless the parts are tender and sensitive. Beckett has made use of liquid air in cases of a superficial and more or less malignant nature that have existed and have been incurable for a length of time, such as lupus, rodent ulcer and small epitheliomas. Compared with the *x*-rays, the effect of liquid air is instantaneous; it acts superficially and its use is very simple. All the apparatus required, besides the liquid air, is a suitable glass rod with a small piece of cotton wool wound around the tip of it, the size and shape depending on the degree of intensity required to be attained. When the surface is raw or ulcerated, it is advisable to cut and to place over it a small piece of gauze; otherwise the cotton wool will be quickly frozen to the surface.

29. **Treatment of Arteriosclerosis.**—The systematic employment of hot baths is vaunted by Hirschfeld as a satisfactory treatment of arteriosclerosis. The effect of the hot bath on the patient suffering from arteriosclerosis is fourfold: 1. It alters the distribution of blood pressure by unloading the internal organs and by increasing the vascularization of the skin; hence, it affords prompt relief in many of the cases of pain associated with internal gout, that frequent source of arteriosclerosis. 2. It increases combustion. 3. It increases the elimination of waste products. 4. By opening the channels of the skin, it reduces the pressure of the blood by bleeding the patient into the skin. In every instance, it is necessary to ascertain exactly the reaction of the individual. One may safely begin with a temperature of 102 degrees if the patient is not above 55 or 60; in women it is safer to begin at 100 degrees. The time of immersion should not be less than ten minutes, although Hirschfeld rarely had to exceed that time. The determining factor in the management of the patient is the condition of the left heart, the quality and loudness of the first and second aortic sounds. Without a vigorous left heart the hot bath must be used with caution. Hirschfeld warns against the indiscriminate use of the hot bath when there is not a good systematic pressure and a vigorous systolic output to start with. While these two conditions obtain in arteriosclerosis, favorable results will follow the treatment indicated.

Journal of Tropical Medicine, London.

August.

32 Hemogregarine of Mammals. H. Jaculi, A. Balfour.

Presse Médicale, Paris.

33 (No. 56.) Le service des délirants de l'Hotel-Dieu (delirious patients in Paris Hospital). G. Ballet.
34 *Résection des nerfs dans la gangrène douloureuse des membres. Bardesco.
35 (No. 57.) Le traitement de la migraine et le canabis indica. G. Carron de la Carrière.
36 (No. 58.) *Inversion thermique et monothermie. A. Gilbert and P. Lereboullet.
37 *L'hémato-aspiration. G. Laurens.
38 (No. 59.) *Le diurèse par les boissons (after drinking). M. Labbé.
39 Les fausses appendicites (pseudo). J. De Nittis.
40 *Flacons aseptiques utilisés comme burette et comme seringue à injections hypodermiques.
41 (No. 60.) La crêche idéale. V. Bué.
42 *Mécanisme de l'évolution du paludisme. M. Le Ray.
43 (No. 61.) Sur les lésions métatyphiques du systeme osseux (of skeleton). A. Christides (Constantinople).
44 *Corps étrangers de l'oesophage et oesophagoscopie (foreign bodies). J. Moure.
45 (No. 62.) *Les diabètes d'origine infectieuse. M. Labbé.
46 Toxémie appendiculaire à localisation gastrique et nerveuse, nécrose suraigue de la muqueuse gastrique. M. Dupont.
47 (No. 63.) The Insane in the European Colonies in the Far East.—La condition des aliénés dans les colonies françaises, anglaises et neerlandaises d'Extrême-Orient. E. Jeanselme.
48 Tests for Horse Meat.—La recherche de la viande de cheval dans les produits manipulés de la charcuterie. H. M. Martel.
49 Report of Fifteenth French Congress of Neurology, Rennes, August 1-7.

34. **Resection of Nerves in Painful Gangrene.**—Bardesco has found it necessary to relieve the pain of gangrene of the leg before he could proceed to amputation. Stretching the nerve brought transient relief, but epidural injections of cocain were entirely useless. He finally resected the internal and external popliteal nerves for a distance of about 5 cm. The pain was arrested at once and the general health improved, the edema of foot and leg subsided and the gangrene became demarcated. The portion finally requiring amputation was much smaller than was at first supposed necessary, and the patient was spared unnecessary crippling. Recovery was rapid and complete, and no sensory or trophic symptoms have developed to date. He proposes in future merely to sever the nerve and to suture the wound. This would relieve the pain while the nerve would become regenerated later, allowing the gangrene time for elimination. These operations on the nerves enable the secondary amputation to be done under much more favorable conditions.

36. **Thermic Inversion and Monothermia.**—Gilbert applies the first of these terms to a condition in which the temperature reaches its maximum in the morning. He has coined the second term to express the condition in which the temperature remains the same morning and evening. Both are probably due to the influence of some digestive or biliary toxic infection, and are liable to be observed in almost any affection due to autoinfection.

37. **Vacuum Cleaning Applied to Operative Wounds.**—Laurens gives an illustration of his little vacuum aspirator, attached to a faucet. It works on the principle of the vacuum cleaning apparatus, sucking all the fluids and loose particles out of the wound. He has found that it reduces the length of otorhino-laryngeal operations, prevents aspiration of secretions and keeps the wound cleaner than any other measures. It does not siphon out blood, as the mouthpiece is placed over the wound only when there are secretions, blood and scraps to be aspirated, and is not kept there all the time. Of course, tamponing is necessary in some cases, but in the majority this aspiration technic is sufficient and renders the compress superfluous. The operator has always a clean field before him.

38. **Diuresis from Drinking.**—Labbé's tracings show the prompt diuresis that follows ingestion of liquids fasting. When taken with food they are not evacuated so promptly by the stomach. He suggests the term "oligoposy" to express the disturbances that result from not drinking enough fluids. It entails oliguria, irritates the kidneys, produces albuminuria and leads to gout. A large glass of any warm infusion, morning and evening, washes out the organism effectually.

40. **Burette Vials.**—The outer part of the large stopper of the vial is like a graduated inverted test tube. The male portion of the stopper is shaped like a syringe piston and its prolongation extends nearly to the floor of the vial for a delivery tube. Inside it is a loose glass plug to act as a valve. When the graduated part is fitted over the inner part of the stopper the fluid in the vial rises into the hollow inner part whenever the female part of the stopper is slightly raised. The communication between the aspirated fluid and the body of the vial is interrupted by the glass plug which serves as a valve to close the lumen of the inner part of the stopper. The fluid that has been thus aspirated into the graduated part of the stopper can then be used at will for hypodermic injection or otherwise. The tip of the outer stopper is finished so that a Pravaz needle can be screwed on it, or it is bent like a retort with a cup on the end to hold the fluid. An illustrated description of the vial is also given in the *Bulletin de l' Acad. de Méd.*, No. 30.

42. **Pathogenesis of Malaria.**—Le Ray has had long experience in the tropics and he has become convinced that the frequency, the persistence and the intensity of epidemics caused by infectious germs are determined: 1, By the degree of concentration of some miasma in the atmosphere, that is, the degree of toxicity of the gases emanating from the decomposition of some special organic matter; 2, by the evolution of the meteorologic phenomena before and during the epidemic; 3, by the degree of the physiologic fatigue experienced by the people in general and by individuals in particular. Pathogenic germs may remain a long time in a state of latent microbism, but this state is extremely unstable, depending on the relations between the nervous energy and the sum of the forces striving to break it down.

44. **Foreign Bodies in Esophagus.**—Moure preaches that radiography should be applied as the first measure in case of a foreign body in the esophagus. Blind attempts to extract the body and external esophagotomy should be very rarely attempted nowadays.

45. **Diabetes of Infectious Origin.**—Labbé's patient was a man of 45, obese, previously healthy, who had a febrile sore throat. Immediately after recovery symptoms of diabetes developed, disturbances in vision, polyuria, emaciation and elimination of 415 gm. of sugar a day. He was placed on a diabetic diet with two glasses of Vichy before meals. All symptoms of the diabetes had vanished by the end of a month, and the patient has been in perfect health during the two years since. Another patient was a woman of 67, obese at one time, but not for several years. After an acute febrile nasopharyngeal infection she likewise developed symptoms of diabetes, which also subsided after a few weeks of dieting and Vichy water. Labbé reviews the literature on the subject and remarks that the classification of diabetes as pancreatic, nervous, hepatic, etc., is illogical. The functioning of the sugar-regulating apparatus is disturbed, not any special organ in the group forming this apparatus.

Semaine Médicale, Paris.

50 (XXV, No. 30, July 26.) *Le traitement de la phlébite des membres. H. Vaquez.
51 (No. 31.) *Sudden Death in Pleurisy.—La mort inopinée chez les pleuretiques: mort subite et mort rapide. M. Roch.
52 (No. 32.) New Prussian Law on Communicable Diseases.—La nouvelle loi prussienne sur les maladies transmissibles. De Maurans. See foreign news columns.

50. **Treatment of Phlebitis.**—Vaquez outlines the treatment suitable for obliterating phlebitis of the large veins, for subacute venous septicemia and for recurring phlebitis. Immobilization in the former should be absolute. He does not use a cast, but holds the leg immovable by strips across it at the knee and above and below, the strips pinned firmly to the mattress. Another strip holds the foot immovable at a right angle to the leg. A strip across the lower part of the trunk is likewise pinned to the mattress or tied to the side bars of the bed. This technic allows supervision of the various parts of the limb without raising it, as would be necessary with a cast. Sedative applications at first are followed by fomentations with a natural saline water for three or four hours, the part powdered with talcum, chalk, magnesia and resorcin powder in the interim. When the temperature has been normal for twenty days, and the veins are indolent to palpation and the edema is retrogressing, then partial passive mobilization may be commenced, limited to ankle and toes. From the twenty-seventh to the thirty-fifth day the muscles may be massaged, and at this time the knee and the trunk can be released. By the fortieth day the patient can be allowed to take a few steps. An elastic stocking should not be worn at first, but merely a light bandage wound from the foot to the thigh before the patient is allowed to get up. This promotes the establishment of collateral circulation. A crutch should not be allowed, as this favors vicious attitudes. Subacute venous septicemia or multiple, relapsing phlebitis, requires different treatment, measures to combat varicose congestion and to prevent the entrance of germs into the enlarged veins. The slightest phlebitis of this nature demands rest in bed with immobilization for twenty days, followed by passive movements of the joints; the rest of the limb does not require mobilization or massage, and these measures arouse the phlebitis again. An elastic stocking is needed when the patient gets up. Surgical intervention should be reserved for protracted phlebitis with successive emboli from disintegration of the clot and danger of septicemia. It is also indicated in case of circumscribed, infected varicose ulcers. Each reawakening of the subacute venous phlebitis should be treated like a new focus, and mobilization should not be commenced until twenty days after the temperature has returned to normal. Local treatment should be the same as previously mentioned. The fomentations are especially effectual in aiding resolution in these cases, as the veins and perivenous surrounding tissue are accessible. In recurring phlebitis in gouty subjects, immobilization is still the rule, for mobilization, massage, etc., do more harm than good. Postphlebitic accidents are generally the result of absurdly long immobilization, from three to twelve months. The pain and edema are best treated by mild hydrotherapy, effleurage and electricity. Massage under hot running water acts on the trophic trouble and on the muscular atrophy common in postphlebitic edema. He asserts that this delicate but energetic treatment which he recommends for the various forms of phlebitis, effects cures without causing a train of sequelæ.

51. **Sudden Death in Pleurisy.**—In menacing death from asphyxia in pleurisy, preventive treatment should include punctures, lying on the affected side and refraining from any exertion and from drugs that may depress the respiratory functions, such as morphin. When the impending fatal termination is due to reflex inhibition, preventive treatment should aim to avoid sudden movements, exertion and constipation. Morphin should be given in case of violent cough or pains. Curative measures should comprise massage and electricity to the heart, artificial respiration, traction of the tongue and stimulation of the skin. The asphyxia is generally preceded by attacks of dyspnea and inability to lie on the sound side, cyanosis and signs of heart weakness.

Berliner klinische Wochenschrift.

53 (XLII, No. 27.) *Zur operativen Behandlung der puerperalen Pyämie. E. Bumm.
54 *Orifice vaginal et Vaginisme. P. Budin.
55 *Rupture of Cesarean Wound.—Ueber die Zerreissung der alten Kaiserschnittsnarbe bei nachfolgender Schwangerschaft. R. Werth.
56 *Myom und Menopause. Winter.
57 Medicolegal Aspect of Retained After-birth.—Schwierigkeiten bei der forensischen Begutachtung von zurückgebliebenen Nachgeburtstellen. O. Küstner.
58 Zur Pathologie der Extrauterin-Schwangerschaft (pregnancy). M. Hofmeier.
59 Wie erreichen wir am besten das Ziel, den Uteruskrebs auf operativem Wege zu heilen? (uterine cancer). J. Pfannenstiel.
60 Albuminurie in der Gravidität und künstliche Frühgeburt. J. Veit.
61 (No. 28.) *Ueber pathologische Veränderungen und Spirochæte pallida bei congenitaler Syphilis. V. Babes and J. Panea.
62 Influence of Alkalies and Acids on Stomach Secreting Function.—Experimentelle Untersuchungen über den Einfluss von Alkalien und Säuren auf die sekretorische Funktion der Magenschleimhaut. A. Bickel.
63 *Beobachtungen über maligne Mäuse-Tumoren (on mice). P. Ehrlich and H. Apolant.
64 *Drei Fälle vaginaler Ovariotomie nach Dührssen. K. Reinecke.
65 *Vorkommen von Spirochaeten bei ulcerierten Carcinomen. E. Hoffmann.
66 *Treatment of Acute Suppurative Otitis media with Passive Congestion.—Ueber die Behandlung der acuten eitrigen Mittelohrentzündung mittels Stauungshyperämie nach Bier. Heine.

53. **Operative Treatment of Puerperal Pyemia.**—Bumm relates the histories of 5 patients with puerperal pyemia treated by ligation of the ovarian and hypogastric veins, with 3 recoveries. One was a case of acute pyemia after abortion, the others were chronic cases. His experience teaches that it is not necessary to attempt the extirpation of the uterus in case of puerperal pyemia, but merely to ligate and to resect the affected ovarian veins and to be content with simple ligature of the hypogastric veins. Applied in time, these measures are almost certain to cure. As the circulation through the parts is arrested, the suppurative thrombotic masses are no longer swept into the general circulation and the chills cease. The pus will be gradually absorbed in the tied-off portions of the veins or a local abscess may form, requiring evacuation. Abortive chills and moderate temperature, such as follow operations for sinus thrombosis, are liable to occur when the abscess is opened, but cause very little disturbance. In the acute case, the blood was being overwhelmed with infectious matters and the number of polynuclears and eosinophiles was constantly declining, but as soon as the veins were ligated, these cells rapidly increased and soon regained their normal proportions.

54. **Treatment of Vaginismus.**—Budin has cured a number of patients by stretching the entrance to the vagina under local anesthesia with vaselin containing 1.2 parts cocain to 30 parts vaselin. He accomplishes this by gradual dilatation with the vaselined fingers and the introduction of Hegar tents.

55. **Tearing Open of Old Cicatrix from Cesarean Section in Later Pregnancy.**—Werth has had an experience of this kind, and analyzes 11 similar cases in the literature. Among the points learned is the importance of preventing vigorous contractions of the uterus after the Cesarean wound has been sutured. The contractions should be reduced to the minimum, as they interfere seriously with the consolidation of the wound. The uterus should not be tamponed, on this account, unless absolutely necessary, and only to the smallest possible extent. The wound should be sutured to ensure perfect adaptation and rest and to promote healing. The diagnosis of rupture of the uterus was generally easy on account of the indications of severe internal hemorrhage, but in a few instances the general health did not seem to be much impaired, as the loss of blood was comparatively small, owing to the location of the placenta just below the old scar. This allowed the fetus and after-birth to pass at once through the rupture, and the hemorrhage was arrested by the retraction of the emptied uterus.

56.. **Myoma and the Menopause.**—Winter's statistics show that the menopause did not occur until after 55 in a third of his 718 cases of myoma. Of his 437 patients under 45, only 9 were in the menopause, only 15 in 170 were between 45 and 50, while the menopause had just commenced in 37 out of 111 over the age of 50. His experience further indicates that patients with myoma are liable to serious symptoms at any time until after the menopause is fully established. Fully 17 per cent. of his patients had to submit to an operation for myoma after the age when the menopause usually commences in normal women. In 19 cases, the myoma caused disturbances necessitating an operation some time after the menopause had been fully established, but in the majority of cases the latter arrests the growth of the neoplasm, and abolishes all disturbances from it, as the myoma shares in the senile involution of the uterus. The symptoms observed from the myoma in the menopause may be due to the expulsion of a subserous myoma or to an increased tendency to sarcomatous degeneration or to hemorrhages. Myomata sometimes continue to grow after the menopause. In his patients, operations undertaken for myoma during the menopause represent 5 per cent. of a total of 392.

61. **The Spirochete and Syphilis.**—Babes and Panea found the *Spirochæte pallida* in one case of congenital syphilis almost immediately after death, congregated in the blood, lymph glands, liver and suprarenals in pure cultures. These organs were the ones that showed the syphilitic changes in the most pronounced form. In two other children with congenital syphilis, as also in this one, the syphilitic changes in the organs were more marked than in adult syphilis. No spirochetes were found in the other non-syphilitic children examined. The syphilitic infants were from one to four weeks old, and in the hemorrhagic case the blood presented peculiar leukemic findings. All the organs and tissues seemed to have suffered from the action of the syphilitic toxin. Spirochetes were found in each of the three infants, and were most numerous at the points where the syphilitic changes were most apparent.

63. **Malignant Tumors in Mice.**—Ehrlich's experiences with 164 mice inoculated with malignant tumors revealed a number of interesting points. Out of 71 primary tumors only 10 proved transmissible, but with some of these none of the inoculations were failures. In one instance a carcinoma had been inoculated through several generations when suddenly a typical, spindle-celled sarcoma developed in the carcinoma, crowding out entirely the carcinoma cells. The sarcoma was inoculated further through 26 generations without modification in its elements. Simultaneous inoculation with carcinoma and sarcoma cells resulted in the production of a mixed tumor, but in succeeding generations the carcinoma elements always predominated more and more.

64. **Vaginal Ovariotomy.**—Reinecke quotes Pozzi's remark that Dührssen's vaginal Cesarean section was the last great achievement in surgery of the nineteenth century, and adds that he regards Dührssen's vaginal celiotomy as one of the most important triumphs in gynecology which that century produced. He gives the details of 5 cases in which he performed vaginal ovariotomy with extremely favorable results. Dührssen's vaginal fixation with silkworm, below the insertion of the tube, with isolated suture of the opening in the peritoneum between bladder and uterus, is the ideal fixation, he thinks. This isolated suture of the fold of peritoneum induces seroserous union which holds the uterus in antefixation while it does not interfere with its normal enlargement during a pregnancy. The threads are not removed for six weeks. It is certain, Reinecke concludes, that the former unfavorable attitude of many gynecologists is changing to a more favorable view as experience is demonstrating the advantages and the harmlessness of Dührssen's technic.

65. **Spirochetes in Ulcerating Carcinoma.**—Hoffmann has found spirochetes in three cases of this kind, but states that the spirilla differed in several respects from the *S. pallida* found in syphilitic lesions.

66. **Artificial Hyperemia in Treatment of Otitis.**—Heine is assistant at Lucae's ear clinic at Berlin, and here relates his experience with 19 cases of acute otitis media, with and without mastoiditis, treated by Bier's method of artificially induced hyperemia. This method of seeking to cure by artificially increasing the inflammation proved successful in the cases with abscess formation, but in the others it seemed to postpone the inevitable operation, and possibly to allow the best moment for intervention to pass. Out of the 19 cases 9 patients were entirely cured, in 2 the mastoiditis has apparently subsided, and in 8 an operation had to be done later. The congestion was induced by a rubber strap around the neck, only tight enough to induce a slight cyanotic, swollen appearance in the face. It was applied at 11 a. m., left for twenty-two hours, and replaced after an interval of two hours. The patients did not seem to mind it much after the first. In one case of mastoiditis, apparently requiring immediate operation, the patient has almost entirely recovered under this congestion treatment without further intervention.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

67 (XXXI, No. 29, July 20.) *Die Therapie der Prostatahypertrophie. F. M. Oberländer.
68 *Entstehung und Wesen der Gicht (essence of gout). H. Klonka.
69 Weitere Untersuchungen über die antagonistische Wirkung normaler Sera. R. Pfeiffer and E. Friedberger.
70 Fortschrite in der Behandlung der Hautkrankheiten (progress in skin diseases). V. Klingmüller.
71 Fall von Mediastinal-Tumor erfolgreich mit Röntgen-Strahlen behandelt. A. Clopatt.
72 Ueber Lokal-Anästhesie. E. Impens.
73 Eine einfache und schnelle Methode zur deutlichen Darstellung der Spirochaete pallida. M. Oppenheim and O. Sachs.
74 Adhesive Plaster Bandage for Flat-Foot.—Zur Behandlung des statischen Plattfusses. G. Muskat.

67. **Treatment of Hypertrophied Prostate.**—Oberländer concludes his clinical lecture with the assertion that systematic evacuating catheterization has not only a symptomatic action, but is directly curative and generally wards off the necessity

for surgical intervention. He remarks that the proper choice of the catheter to use is the criterion of the result to be expected. Several catheters should be at hand, of from 14 to 15 Charrière and 40 cm. long. The Mercier curve is the best, not more than 130 to 150 degrees, and end in a cone rather than in an olive tip. On the slightest suspicion of a crack in the varnish the catheter should be discarded. The tip should always curve upward when being introduced. The great blunder is to catheterize at too long intervals. Four times a day generally suffices, supplemented by rinsing the bladder with a warm, saturated solution of boric acid.

68. **Essence of Gout.**—Kionka describes a number of interesting experiments on the origin and nature of gout which he has been conducting with Frey. He found degenerative processes constant in the liver and kidneys of mice fed exclusively on meat. He also noted the total absence of the glycocol-destroying, urea-forming ferment in the liver of gouty subjects. He does not believe that pathologic changes in the liver are necessary for the production of gout, but that functional disturbances must certainly exist. Functional disturbances in the liver are very liable to entail disturbances in the urea metabolism. The absence of the glycocol-destroying and urea-forming ferment in the liver may be congenital or may be the result of improper diet or of constitutional poisoning. The remedies which have proved useful in gout owe this property probably to their beneficial action on the functions of the liver. Colchicin and benzoic and salicylic acids are powerful cholagogues, and they thus improve the conditions of the circulation in the liver. This is also accomplished by certain purgatives, hydrochloric acid, etc. Benzoic, salicylic and quinic acids have a further beneficial action in that they bind the glycocol and thus prevent its exerting a precipitating action on the uric acid in the organism. The presence of glycocol with a large amount of urea entails precipitation of urates. When there is a gouty tendency, that is, a lack of glycocol-destroying ferment, urates are precipitated. This occurs in cartilago and in connective tissue when glycocol is generated in them by nutritional disturbances.

Wiener klinische Rundschau.

Last indexed, XLIV, page 1971.

75 (XIX, No. 17.) *Zur Frage der Misch-Infektion bei der Lungen-Tuberkulose. A. Pick. (Commenced in No. 15.)
76 Fall von Lungen-Hernie. S. Goldflam. (Commenced in No. 15.)
77 (No. 18.) Das Moskito-Fieber (fever). K. Steiner.
78 Dentistry in School, Army, Prison and in Sickness Insurance.—Die Zahnpflege in Schule, Armee, Gefängnis und Krankenkasse. F. Schilling.
79 (No. 19.) *Infektiöse idiopathische Purpura. O. P. Gerber.
80 Interessante Fälle von Abdominal-Erkrankungen. F. Burger.
81 (No. 20.) *Ueber Epityphlitis. W. N. Clemm.
82 *Die Gallensteinkrankheit und ihre Behandlung (biliary lithiasis). G. Singer.
83 (No. 21.) Ueber die Einfluss der Gravidität auf die Schleimhaut des Uterus (influence on mucosa). B. Müller.
84 (No. 22.) Familiäre Enuresis nocturna. R. Stern.
85 (No. 23.) Die Amöben und die Amöbenruhr (dysentery). E. Bertarelli.
86 *Roentgen Examination of Stomach.—Die radiologische Untersuchung des Magens. G. Holzknecht and L. Brauner. (Commenced in No. 16.)
87 Beiträge zur Kenntnis der herzegowinischen Volksmedizin (medical folklore). K. Steiner. (Commenced in No. 20).

75. **Mixed Infection in Tuberculosis.**—Pick believes that mixed infection is very frequently the reason why a latent phthisis suddenly assumes a rapid, galloping form. It promotes destructive processes in the lungs, especially cavity formation, which is mainly the work of streptococci. The metabolic products resulting from mixed infection are liable also to injure the organism. The prognosis of mixed infection, therefore, differs from that of pure tuberculosis. In case of high fever, tuberculin treatment can do little, if any, good. In general treatment measures against the mixed infection are necessary, and he has seen good results from creosote and also from the salicylates in the febrile cases. When the strength permits, hydrotherapy can be used to advantage, especially packs. In case of tuberculosis of the serous membranes he states that he has derived benefit from rubbing green soap into the skin of the abdomen or breast.

79. **Infectious Idiopathic Purpura.**—Gerber reports two cases, one terminating fatally. They occurred with a brief interval in two inmates of the same house.

81. **Appendicitis.**—Clemm regards the appendix as a necessary reservoir for the intestinal bacteria, and hence does not favor its removal without great cause. He agrees with Robin that fully 98 per cent. of the cases of appendicitis terminate in recovery without appendicectomy. In treatment he advises rest on a hard mattress, with applications of heat to the part to soothe the inflammation and to help move the bowels. A hot sand bag or thermophore is placed under the part and a hot, soft linseed poultice is placed over it or a light thermophore. The patient is coaxed to take frequent swallows of hot Carlsbad water or physiologic salt solution, as hot as possible. No opium, purgatives or ice are used. After several hours the hot applications are suspended and a tablespoonful of green soap is worked into the skin, after which an alcohol compress is applied. No food is allowed for two days. Rapid recovery is the rule under this treatment in recent cases. The physician should continue his oversight of the case, with massage of the parts with his own hands, for weeks, and surveillance of the stools, supplemented by an adhesive-plaster supporting bandage and later a good truss, strengthening the muscles by appropriate exercise. Treatment on these principles will rob this dreaded disease of all its terrors, he affirms.

82. **Treatment of Cholelithiasis.**—Singer has been remarkably pleased with the results of olive oil in treatment of gallstones. In one of his cases a woman passed 52 gallstones, some as large as a cherry, under treatment with pure olive oil. He begins with one and increases to four or five tablespoonfuls a day, taken fasting, and followed by a small glass of warm Carlsbad water. Some patients overcome a repugnance to the taste by rinsing the mouth before and after with brandy or some alcoholic aromatic mixture. The oil can also be given in the form of a flavored emulsion. He sometimes uses an alkaline oleate in place of the oil, but has never had such success with it as with the olive oil. He generally advises gallstone patients to eat abundance of butter.

86. **Roentgen Examination of the Stomach.**—Holzknecht and Brauner add twenty-nine illustrations to their article emphasizing the value of the information that can be derived from Roentgen examination of the stomach after ingestion of a solution of bismuth. The fluid settles in the cracks and around the outside of a tumor and thus throws it into relief in the skiagram. The bismuth also outlines the stomach as the patient assumes various positions. No bougie or stomach tube is required. The views are taken standing and reclining, and during inspiration and expiration, the most important information being generally obtained by radioscopy. The findings are characteristic for the fasting stomach, and also for the stomach weighed down by a meal containing 500 gm. of food or inflated with gas. The size of the stomach and its relations to other organs can thus be accurately determined. The passage of a bismuth tablet into the stomach can be traced and its expulsion watched. The action of massage on the stomach can also be studied in this way, and the displacement of the organ during respiration. The diagnosis of cancer or hour-glass stomach is an easy matter by this means, and it also allows undisturbed supervision of the stomach peristalsis. To examine the standing patient the Roentgen tube and the fluorescent screen are suspended by weights from a wooden standard, parallel to each other. The patient swallows a tablet of bismuth and, after its course has been traced, drinks 50 gm. of water into which 10 gm. of bismuth have been stirred. After the findings of this test have been noted he drinks a mixture of 4 gm. tartaric acid and 5 gm. sodium bicarbonate. This stirs up the bismuth in the stomach and gives very interesting findings, after which the patient reclines and the findings in various positions are noted. The test on the following day consists of ingestion of 400 gm. of milk gruel containing 35 gm. bismuth. The patient takes this while reclining on the left side, with the Roentgen tube at his back, and he is then examined when lying on the right side and on his back. Specimens of the views thus obtained are reproduced.

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Last indexed XLIV, page 1890.

88 (LVII, Nos. 1-2.) *Ueber den osmotischen Druck menschlicher Mageninhalte und seine Beziehung zum Kochsalzgehalte (osmotic pressure of stomach content). H. Strauss.
89 *Mischinfektion des Blutes mit Proteusbazillen und Streptokokken, zugleich ein Beitrag. zur Frage der Mitagglutina-

tion von Typhusbazillen bei Proteusinfektion. G. Jochmann.
90 *Studien über Nephritis. F. Erben.
91 Duplicated and Accessory Heart Sounds on Direct Auscultation of Heart.—Ueber die verdoppelten und akzessorischen Herztöne bei unmittelbarer Auskultation des Herzens. W. P. Obrastzow.
92 *Ueber die spinale Lokalisation der motorischen Funktionen. P. Lazarus.
93 *Tierexperimentelle Studien über Blutdruckmessungen mittels des Riva-Rocci 'schen Sphygmomanometers. B. Fellner and C. Rüdinger.
94 *Ueber die Bedeutung der anorganischen Salze im Stoffwechsel des Organismus. A. Hirschler and P. Terray.
95 *Ueber den Einfluss von Alkalien auf den Säuregrad des Harnes bei Anämien (alkalies and acidity of urine). S. v. Moraczewski.

88. **Osmotic Tension of Stomach Content and Its Relation to the Proportion of Salt.**—Strauss has been studying this subject for five years. The proportion of salt in the stomach content was found generally no higher than that of the blood. The secretory behavior of the stomach is of great import in respect to the proportion of chlorin in the stomach content, as it determines the amount of dilution of the solution isotonic with the blood. In case of defective secretory functioning there is little or no dilution, and hence the proportion of chlorin is abnormally high. In hyperacidity the secretion may be watery or concentrated. Admixture of saliva probably cooperates in causing the stomach content to be isotonic with the blood, but it can not be the sole cause.

89. **Agglutination of Typhoid Bacilli in Proteus Infection.**—Jochmann describes a case of otogenic general sepsis in which streptococci and proteus bacilli were cultivated from the blood. The serum had marked agglutinating action on typhoid bacilli as well as on the proteus.

90. **Studies on Nephritis.**—In this second installment Erben gives the details of chemical and other researches on the blood serum in 8 cases of contracted kidney and analyzes previous literature on the subject. He states that in parenchymatous nephritis, the proportion of globulin to albumin in the blood alters in favor of the former. The existing amyloidosis in some cases does not seem to change the quite constant composition of the red corpuscles, but it alters the composition of the serum and the relations between the corpuscles and the plasma. The increase in the extractive substances is due to the uremia.

92. **Spinal Localization of Motor Functions.**—Lazarus presents an array of data to prove that each anterior spinal root is a spinal center for certain combined muscle functions, several muscles working in synergy. These motor centers in the spine are localized the same as the centers in the cortex. Among the facts which he cites is the persistence of co-ordinated respiratory movements in animals after removal of the brain. He gives the localization by segments of the various motor functions in question, movements of head, neck, shoulder, trunk, etc., and the corresponding muscle groups and their centers in the spinal segments.

93. **Comparative Tests of Blood Pressure Measurements.**—The findings with the Hürthle tonograph and other instruments compared with those of the Riva-Rocci sphygmomanometer always paralleled each other in respect to the pulse pressure, that is, the difference between the minimum and maximum blood pressure, and the blood pressure quotient was found almost identical with each instrument. The sphygmomanometer is thus able to substitute the more complicated processes of determining the blood pressure in animals with a cannula.

94. **Importance of Inorganic Salts in Metabolism.**—Dogs were fed on a determined diet and the elimination of the waste carefully studied. The results indicate that it makes a great difference in what form the inorganic salts are ingested in respect to their assimilation. When phosphorus is given in the form of yolk of egg, the nitrogenous elements of the body make more rapid growth than when it is given in any other form. The yolk probably owes this property to its lecithin. This exhaustive research, therefore, scientifically confirms the general opinion in regard to the nourishig properties of yolks of eggs, and their early adaptability for the diet of children. A case of chronic deforming endocarditis was also studied from the point of view of the metabolism on various diets. The extensive work was done under a grant for scientific research, and presents a résumé of previous work in this line by various authors.

95. **Influence of Alkalies on Degree of Acidity of Urine in Anemia.**—Sodium citrate and sodium bicarbonate are able to render the urine alkaline in anemia. In some instances, however, especially in cases in which there is enlargement of the liver, this alkalinizing action is retarded for several days. On suspension of the alkali the urine becomes excessively acid, with increased secretion of ammonia and oxalic acid. Anemias without enlargement of the liver are accompanied by normal relations between the nitrogenized elements.

Riforma Medica, Palermo and Naples.

Last indexed page 363.

96 (XXI, No. 22.) Hydrocarbonate Metabolism.—Sul ricambio degli idrati di carbonio. L. Ferrannini.
97 *Protecting Functions of Omentum.—Nuove ricerche sulla funzione protettiva dell' epiploon. E. Cioffi.
98 (No. 23.) Note di semeiotica fisica relative alla presenza contemporanea di gas e di liquido nella pleura. G. Boeri.
99 *Intravenous Route for Drugs Acting on the Medulla.—La via endovenosa per i farmaci ad azione bulbare (caffeina, strichnina). L. Ferrannini.
100 (No. 24.) Nevrite ascendente da pneumococco del Fränkel. D. Pirrone.
101 *Studii sulle leucemie e pseudoleucemie. F. Schupfer. (Commenced in No. 22.)
102 Bilharzia Eggs in Feces.—La ricerca delle uova di Bilarzia nelle urine e nelle feci. T. Mazzei.

97. **Protecting Functions of Omentum.**—The protecting action of the omentum has been demonstrated by Cioffi's researches, not only for the spleen and kidney, but also for the liver, suprarenal capsules and intestines. If the vessels of the spleen are tied off and the omentum removed, the animal dies in twenty-four hours, while it survives longer if the omentum is left intact. If a flap of the liver is loosely tied off, the omentum covers and clings to it, with the result that a protecting capsule forms, with congregation of leucocytes and especially phagocytes. During this period of absorption of liver, spleen or other tissue, the kidney behaves in the same way as if organic nucleoproteids were being injected, that is, the secretory apparatus shows changes and there is parenchymatous hemorrhage. The protecting action of the omentum is promptest and most marked in case of lesions of the intestine.

99. **Intravenous Route for Caffein and Strychnin.**—Ferrannini's experimental researches have demonstrated that the drugs acting on the medulla can be administered intravenously in case of emergency.

101. **Research on Leukemia and Pseudoleukemia.**—Schupfer's article issues from Baccelli's clinic at Rome. He is convinced that leukemia has no analogy with ordinary infectious diseases, but is more in the nature of a systematic sarcomatosis of the lymph and blood producing organs. To demolish completely the idea that leukemia can be due to any ordinary micro-organisms and that they circulate in the blood, he injected cancer patients with blood from some patients with leukemia. The possible beneficial effect of an intercurrent infection justified the attempt, but the results were entirely negative, as they were in similar experiments on animals. These results, he thinks, disprove the possibility of an ordinary infectious agent, as cancer patients are peculiarly susceptible to mixed infections. Further experiments with inoculation of leukemic tissue, he thinks, have fully confirmed the assumption that leukemia is a sarcomatosis.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Sanitary Reports for Mexico for the years 1901 to 1904, inclusive. Paper. City of Mexico.

Amerikanische Streiflichter von Carl Beck. Cloth. Pp. 246. Berlin, SW., 48: Verlag von Leonhard Simon NF..1905.

Twenty-Eighth Annual Report of the Board of Health of the State of New Jersey and Report of the Bureau of Vital Statistics, 1904. Cloth. Pp. 494. Paterson, N. J.: News Printing Co., 1905.

Therapeutics, Its Principles and Practice. H. C. Wood, M.D., LL.D. Twelfth edition. Thoroughly Revised and Adapted to the Eighth (1905) Edition of the United States Pharmacopeia. H. C. Wood and H. C. Wood, Jr., M.D. Cloth. Pp. 907. Price $5.00 net. Philadelphia: J. B. Lippincott Co., 1905.

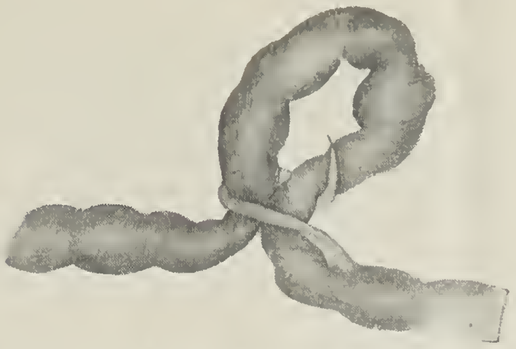

Fig. 1.—Diverticulum wrapped around gut, producing obstruction—Cazin—Rep. by Halstead, Annals Surg., vol. xxxv, p. 471.

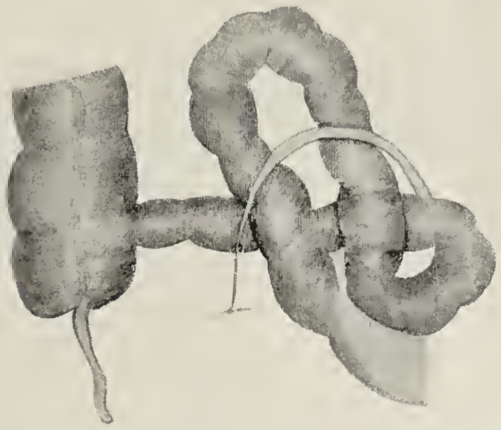

Fig. 2.—Diverticulum acting as band. Distal end adherent to posterior abdominal wall. Loop of gut incarcerated.

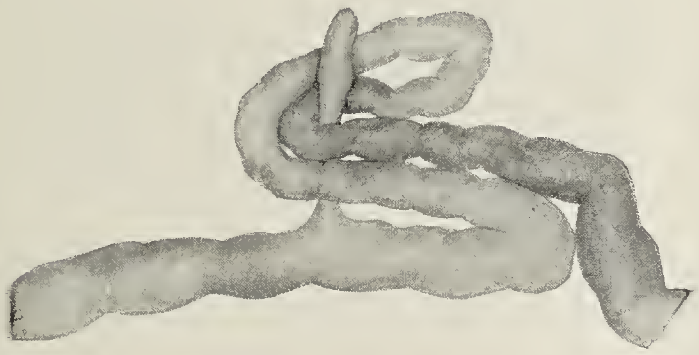

Fig. 3.—Diverticulum surrounded by adherent gut producing obstruction. (Tyffany—Personal communication.)

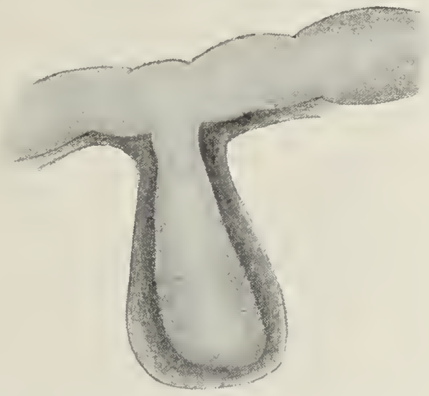

Fig. 4.—Diverticulum sole content of hernial sac, Benevolis case. Rep. by Bunts, Annals Surg., October, 1904.

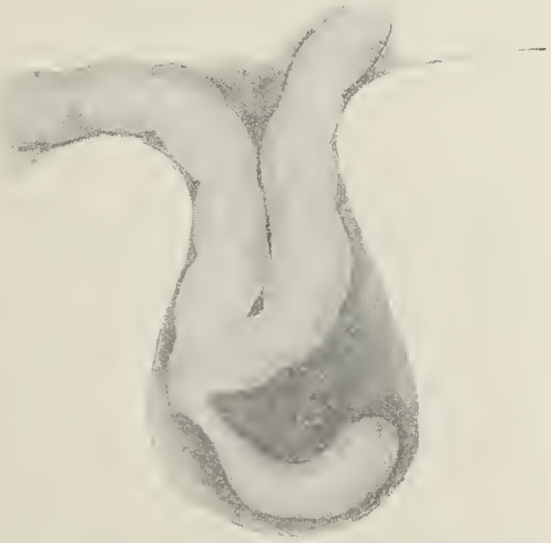

Fig. 5.—Diverticulum and intestine in hernia. Several cases (similar) reported.

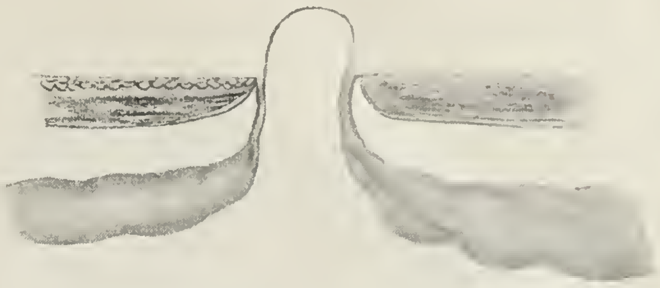

Fig. 6.—Diverticulum patent at umbilicus with protrusion of posterior wall of gut.

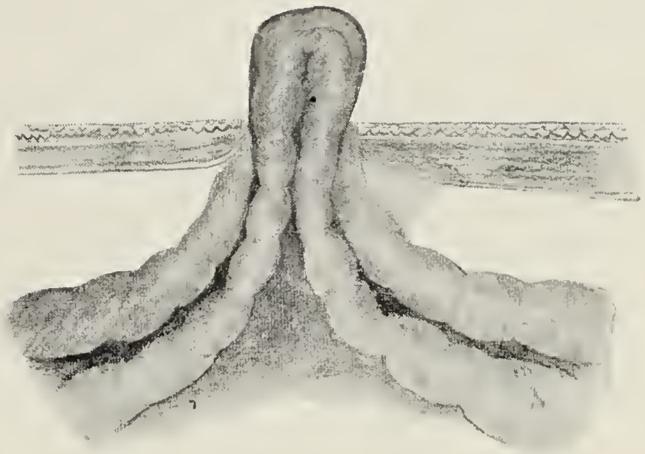

Fig. 7.—Same as Fig. 6, with hernia.

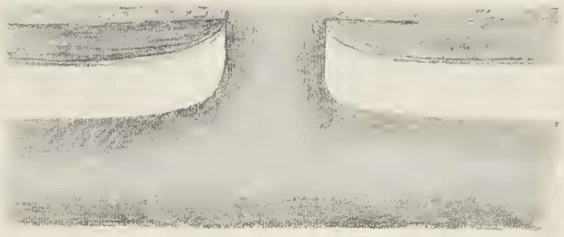

Fig. 8.—Large diverticulum patulous at umbilicus.

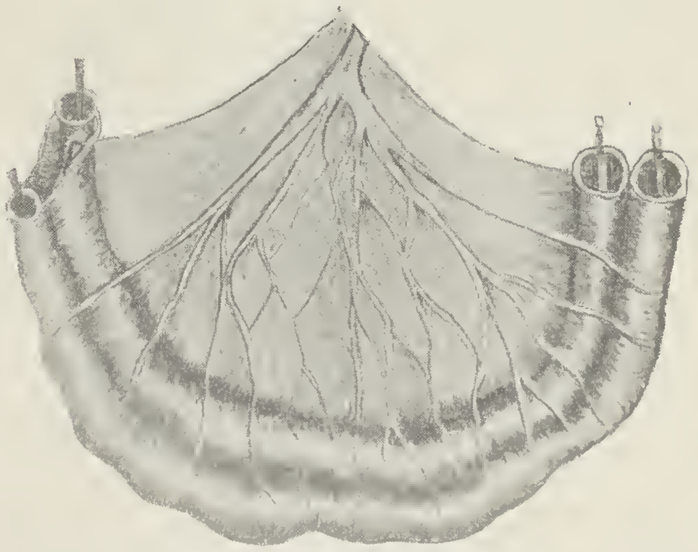

Fig. 9.—Stedman case (Warren Museum): Fitz, Am. Jour. Med. Sci., July, 1884. Symptoms of bowel obstruction for 4 or 5 days.

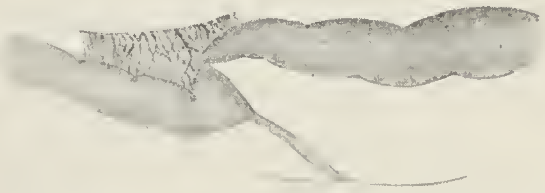

Fig. 10.—Obstruction by traction. Angulation at mesenteric attachment. Diverticulum attached to mesentery. Boyer's case, personal letter.

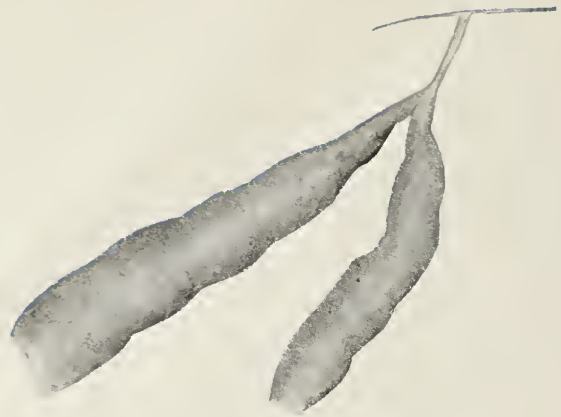

Fig. 11.—Obstruction by traction. Angulation at attachment of diverticulum.

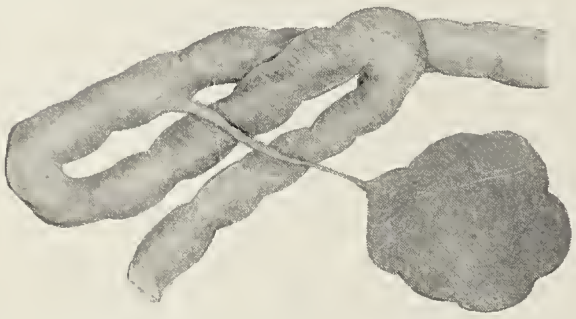

Fig. 12.—Diverticulum with cyst. Weight of cyst producing strangulation and obstruction of bowel. (Mayer and Lee, Am. Jour. Med. Sci., March, 1905.)

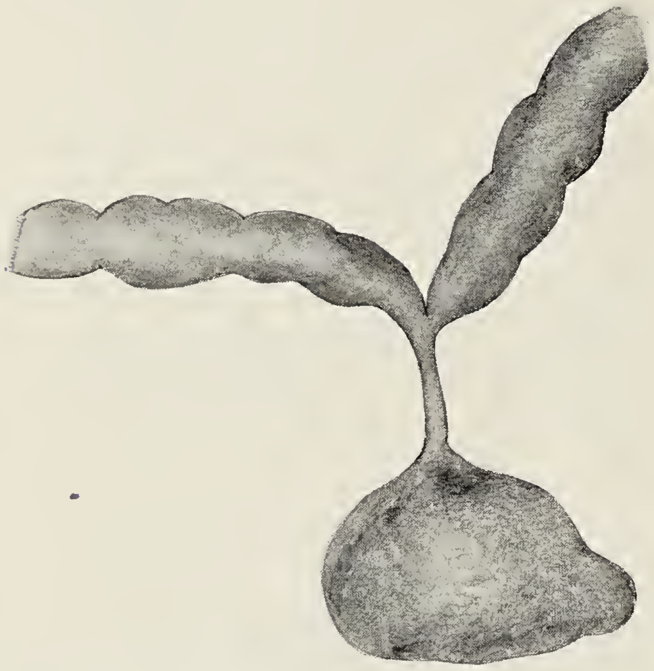

Fig. 13.—Cyst of diverticulum producing obstruction by traction. Walzberge's case (Halstead).

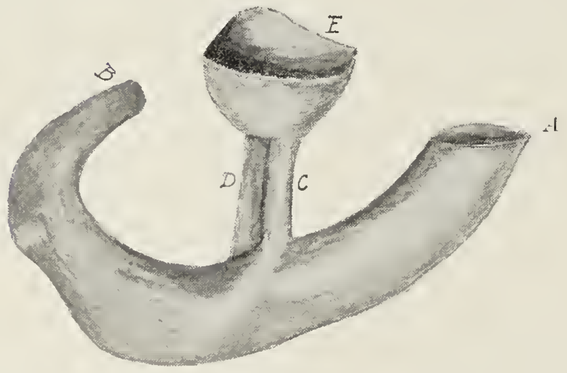

Fig. 14.—A, Upper part of bowel; B, diverticulum pulled out; C, narrow tube connecting upper and lower part of bowel; D, mesentery; E, lower part of bowel.

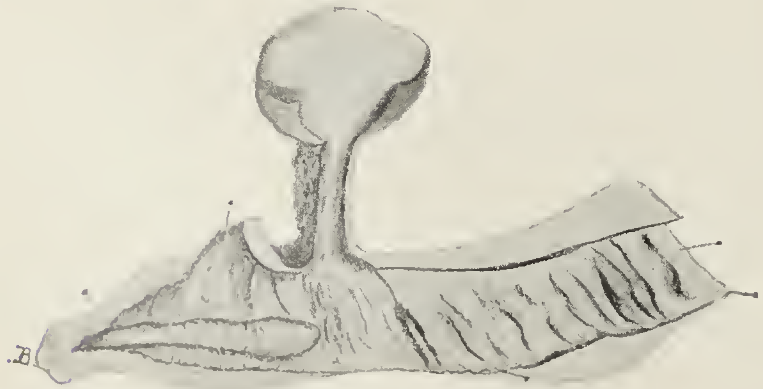

Fig. 15.—Cheyne's case, Annals Surgery, December, 1904. B, diverticulum inverted.

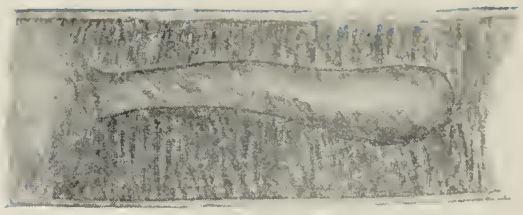

Fig. 16.—Invagination of diverticulum, Heller's case, Rep. by Watson Cheyne, Annals Surg., Dec., 1904.

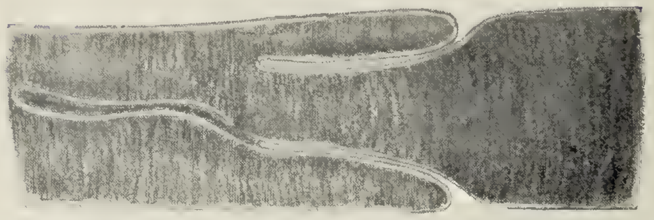

Fig. 17.—Invagination of diverticulum dragging bowel after it. Author's case.

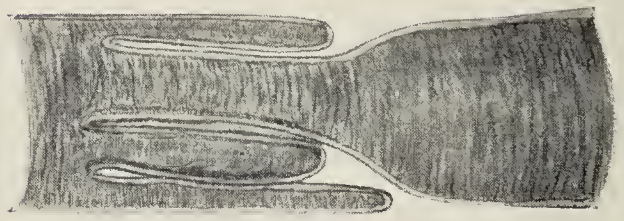

Fig. 18.—Invagination of bowel. Diverticulum dragged in, but not inverted (Stubenrauch's case, Rep. by Halstead, Annals Surg., vol. xxxv, p. 489.)

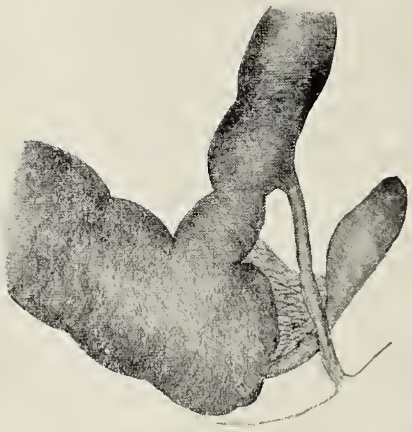

Fig. 19.—Appendix strangulated by diverticulum acting as band. McArthur's case (Halstead).

Fig. 20.—Author's case, seen after this paper was written. Causing no trouble. Obstruction due to adhesions. Post appendiceal.

Fig. 21.—Author's case, seen in gunshot wound of bowel, walls of diverticulum very thin.

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Original Articles

ABDOMINAL CRISES CAUSED BY MECKEL'S DIVERTICULUM.*

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Within a period of two months during the latter part of the last year, there occurred in my practice four cases of Meckel's diverticulum.[1] In one of these cases, the diverticulum was the source of no trouble, but was met with during an operation for gunshot wound of the bowels. In the three other cases, the diverticulum was the occasion for the operation. This unusual experience aroused my interest in the subject and occasioned my determination to write the paper herewith presented.

The basis of the paper consists of my personal experience, a study of the literature of the subject and an analysis of the reports of 184 cases which I have tabulated and which includes 35 cases not hitherto reported. It is, of course, not pretended that this list is complete, but it comprises all the cases I could find in the literature available that were reported sufficiently in detail to fulfill my purpose in the study of the subject. Abstracts of many other cases were found, but they were too meager of detail to make their report worth while.

My purpose is to add, if possible, a little to the practical side of our knowledge on this subject, and therefore no attempt will be made in the direction of an exhaustive study of the embryologic, anatomic and pathologic phases of it. It is sufficient for our purpose to know that what we call Meckel's diverticulum is a fetal remnant of the intestinal tract, which in the normal course of events disappears by involution before birth; that because of an arrest of development it may remain as a patulous duct connecting the intestinal tract with the outer world via the umbilicus, or as a blind sac or cord connected to the umbilicus or to any other part of the abdominal walls or to any of the abdominal organs, or as a cul-de-sac unattached save at its origin; that it may have its origin in any part of the intestinal tract, but usually arises from the ileum[2]; that it may arise from any part of the circumference of the bowel, but usually arises opposite the mesenteric attachment; that histologically it agrees with the intestine, save in those cases wherein the involution has proceeded to such an extent as to leave only blood vessels and connective tissue.

Meckel's diverticulum is probably present in from 1 to 2 per cent. of all individuals. It is said by Halstead to be the cause of intestinal obstruction in 6 per cent. of all cases.[3] In my own list of 184 cases it caused obstruction by band in 101 cases; volvulus, intussusception, diverticulitis and other crises in 83 cases. The average age at which crises occurred, according to my table, is 21 years and 2 months, and yet this includes 6 patients over 50, 1 being 81 years of age. Judging from these facts, we are warranted in concluding that, in proportion to the frequency of its presence, Meckel's diverticulum is one of the most frequent sources of grave abdominal trouble, and, therefore, not as Kelynack and others think, of slight practical importance. A Meckel's diverticulum is a greater menace to life than is an appendix vermiformis.

A study of the different ways in which the diverticulum causes trouble is of much importance. From the list of cases here presented we find that it has caused obstruction of the bowel by a band (Figs. 1, 2, 3) in 101 cases, been the cause of volvulus in 8 cases, and of intussusception in 20 cases. Diverticulitis was the cause of the crisis in 17 cases, prolapse of the bowel through a patent diverticulum in 2 cases, typhoid perforation in 5 cases, traumatic perforation in 1 case, and tubercular ulceration in 2 cases. In the 21 cases of hernia reported in this paper, the diverticulum was the cause of the trouble demanding immediate operation in all but one (Figs. 4, 5); in that one it was simply noted as forming the content of the sac. The diverticulum is more often found in umbilical than in any other variety of hernia (Figs. 6, 7), and not infrequently it is found in congenital inguinal hernia, as pointed out by Bunts.[4] It may form the only content of the sac, a true hernia of the diverticulum, or it may occupy the sac in connection with other structures. That the existence in a hernia of a diverticulum adds materially to the danger of the case seems quite evident. Maylard,[5] quoting Hudson, mentions stricture of the gut from excessive obliteration of the diverticulum, but I found no other similar case reported, although Watson Cheyne[6] and others cite cases wherein stricture of the bowel has resulted from pathologic changes secondary to intussusception and other trouble originating in a diverticulum (Fig. 8). Fitz[7] in his paper cites cases of intramesenteric diverticulum (Fig. 9), and accounts for duplication of the intestine by the blind extremity of the diverticula thus located becoming attached to the intestinal wall, at which point communication is established by perforation (Figs. 10, 11). He also mentions the rare occurrence of branched diverticula cysts of the diverticulum form, and, in a few instances, have been the cause of the crisis. In one case in the list (Figs. 12, 13), the cyst produced volvulus, in one obstruction and gangrene of the bowel by traction, and in another the weight of a cyst developed in the free end of the diverticulum dragged it over a loop of bowel producing obstruction. In one case reported by Beach[8] the occasion for the operation was a pelvic tumor which proved to be a diverticulum filled with dried fecal matter.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Since this paper was written a fifth case has occurred in my practice. It was met during an operation for obstruction of the bowels and was causing no trouble. See illustration.

[2] The name diverticulum ilei indicates that the origin of the diverticulum is always the ileum and is therefore incorrect.

[3] Annals of Surgery, vol. 35, p. 471.

[4] Ann. of Surg., Oct. 1904.

[5] Surgery of the Alimentary Canal, p. 471.

[6] Ann. of Surg., Dec., 1904.

[7] Am. Jour. of Med. Sciences, July, 1884.

In 5 cases the diverticulum was patent at the umbilicus. If the opening be large, the gut wall may prolapse and form the outer covering or sac of a hernia. Some of the numerous pathologic conditions produced and shapes assumed by Meckel's diverticulum, which have been observed, are herewith illustrated for the sake of clearness and brevity (Figs. 14, 15). To know the various locations, forms, attachments and pathologic changes which diverticula may present is important, in that the surgeon thus informed is in a sense forearmed. The most practical deduction from these facts seems to me to be, that, in the vast majority of cases of abdominal trouble due to Meckel's diverticulum, the trouble manifests itself primarily as a peritonitis or as an obstruction with or without strangulation (Figs. 16, 17, 18). The obstruction may be complete or incomplete throughout; or incomplete obstruction may be succeeded by complete obstruction. Symptoms of acute obstruction were manifest from the start in 118 cases. Incomplete obstruction was present throughout in 7 cases. In 17 cases there had been previous attacks of incomplete obstruction prior to the final attack of acute complete obstruction. In 20 cases, the symptoms were those of peritonitis, either circumscribed or general. In many cases the trouble was diagnosticated as appendicitis (Fig. 19), and in 1 case appendicitis existed as a complication in a case of strangulation of the bowel by the diverticulum, and in another (McArthur[9]) the appendix was gangrenous because of strangulation by a diverticulum acting as a band, the diverticulum itself being healthy. In cases of supposed appendicitis in which the conditions of the appendix when seen does not account for the symptoms, the probability of the existence of a diverticulitis should be borne in mind (Fig. 20). This point is illustrated in Keefe's case, in which a diagnosis of appendicitis had been made and on opening the abdomen the appendix was found adherent, but showing no evidence of recent inflammation. A further search revealed a mass of intestine adherent to a Meckel's diverticulum and producing obstruction. The adhesions were released and the diverticulum inverted. The patient recovered.

As in obstruction and strangulation of the bowel from other causes, so in those due to a diverticulum acting in a mechanical way, the symptoms of obstruction and strangulation are often followed by, or have added, symptoms of infection, i. e., peritonitis. In many cases the primary trouble is a diverticulitis with a subsequent formation of adhesions leading to obstruction. In these cases, of course, the symptoms of obstruction are preceded by symptoms of infection. In this class of cases the symptoms are very like those of appendicitis and this is the diagnosis usually made prior to operation.[10]

Of the cases here reported, the proportion of males to females is more than three to one, and the average age, as above stated, is 21 years and 2 months, so that while trauma is mentioned infrequently as an etiologic factor in the production of these crises, yet it would seem that the proponderance of males and the active period of life during which most cases occur would point to injury as among important causes (Fig. 21).

Oderfeld's case, reported by Halstead,[9] is the only one found in which a diagnosis was made prior to the operation. Just how the diagnosis was arrived at in this case does not appear quite clear.

As noted above, the symptoms arising in the crises due to Meckel's diverticulum, barring those patulous at the umbilicus, are in no way distinctive, but are similar to those met with in obstruction of the bowel by bands, in volvulus, in intussusception, in perforation and in appendicitis, etc., and hence a positive diagnosis without opening the abdomen is impossible, save in rare instances. An exact diagnosis, however, is not necessary before operating and to wait for it is neither good sense nor good surgery. All that is necessary before operating in these, as in similar cases, is what might be well termed a working diagnosis, and to wait for anything more is to sacrifice life. The frightful mortality which obtains in the cases under consideration, may be almost entirely attributed to delay in surgical interference. It seems to me that one of the most useful purposes that the reports appended can serve, is to emphasize the fact, well known among surgeons, that delay in operating is the most fruitful source of mortality and morbidity in surgical diseases.

In this list of 184 cases, the mortality is in all 60 per cent. Of all those patients operated on, the mortality is 50 per cent. While in the cases in which diagnoses of strangulated hernia and appendicitis were made, and in which, therefore, the patients were operated on early, as is the rule in these conditions, the mortality is 10 per cent. Words might preach a more eloquent sermon against delay in surgical intervention, but not a more powerful one.

To cover the subject of the operative technic would be to cover the subject as it concerns numerous pathologic conditions, the operative technic of which has been fully discussed. It is only necessary, therefore, to speak of the disposition of the diverticulum itself. To me it seems much better to excise it than to invert it. To invert it would mean partially to obstruct the lumen of the bowel, nor does it seem to me far-fetched to suppose that this disposition of it would invite ulceration invagination and perforation of the bowel.

After excision of the diverticulum the treatment of the opening will depend on the size of it and its relation to the lumen of the gut. When the opening is small, a single purse-string suture is simple, safe and sufficient; in other cases, Lembert sutures will be better; and in still others a portion of the bowel, including the diverticulum, will have to be removed to avoid stricture.

In conclusion I want to urge the advisability of removing all diverticula that are found in the course of abdominal operations, whether they have been or are the source of the trouble or not, provided the exigencies of the case in hand do not contraindicate further operative procedure.

SUMMARY OF TABULATED CASES.

Number of cases herewith reported for the first time, 35; total number of cases reported, 184; deaths, 93; recoveries, 67; results not stated, 24.

Patients operated on, 139; deaths, 65; recoveries, 65, result not stated, 9.

Patients not operated on, 18; deaths, 18.

Cases in which treatment is not mentioned, 27.

Kind of crisis: hernia, 21 cases; umbilical, 10; inguinal, 8; scrotal, 2; result not stated, 1.

Patients with hernia operated on, 11; recoveries, 6; deaths, 4; result not stated, 1.

Patients with hernia not operated on, 5; deaths, 5. Cases of hernia in which treatment is not stated, 5.

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[8] Ann. of Surg., vol. 24, p. 484.

[9] Cited by Halstead, Ann. of Surg., vol. 35, p. 492.

[10] Erdmann: The Journal A. M. A., Jan 21, 1905, p. 171.

Obstruction by band, 101 cases. Place of attachment of diverticulum, mesentery, 29; umbilicus, 22; free band about intestine, 9; to intestine, 11; brim of pelvis, 3; internal ring, 1; omentum, 1: diverticulum free, and acting as cyst, 2; stump of appendix, 1; mesorectum, 1; caught in loop of small intestine, 2; abdominal wall, 3; as band, place of attachment not stated, 16.

Volvulus, 8 cases; patients operated on, 7; deaths, 4; recoveries, 3; treatment not mentioned, 1

Intussusception, cases, 20; of bowel, 10; of diverticulum, 6; of bowel and diverticulum, 4. Patients operated on, 13; deaths, 8; recoveries, 5. Patients not operated on, 7; deaths, 4; result not stated, 3.

Patent at umbilicus, cases, 5; Patients operated on, 4; recoveries, 4; treatment not mentioned, 1; deaths, 1.

Diverticulitis, cases, 17; gangrenous, 6; deaths, 4; recoveries, 2. Due to presence of foreign body, 8; deaths, 7; result not stated, 1. Diverticulitis due to other causes, cases, 3. Number of cases of diverticulitis in which general peritonitis resulted, 8.

Perforation in typhoid, cases, 5; deaths, 5. Perforation from trauma, cases, 1; result not stated

Tubercular ulceration of diverticulum, cases, 2; deaths, 1; recoveries, 1.

Prolapse of bowel, cases, 2; deaths, 2.

Pelvic tumor, 1 case; recovery, 1.

Rupture of diverticulum causing obstruction from pressure of abscess, 1 case; result not stated. Summary: Males, 100; females, 30. Number of ages given, 137; result not stated, 54. Average age, 21 years, two months.

REPORTED CASES.

Case 1.—Dowse: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Female, aged 27. Kind of crisis, direct inguinal hernia. Symptoms, a fecal fistula had formed owing to the collection of fecal matter in the diverticulum. Treatment, patient not operated on. Result, death. Remarks: At postmortem right direct inguinal hernia was found, in the sac of which the diverticulum was found adherent to the anterior wall of the sac. The diverticulum was ulcerated and perforated owing to accumulation of fecal matter within it, thus forming fistula in right groin.

Case 2.—Mueller: (Cited from Bunts, *Ann. of Surg.*, Oct. 1904.) Fetus, aged 8 months. Kind of crisis, umbilical hernia. The child was born dead, having umbilical hernia, the sac of which contained an adherent diverticulum.

Case 3.—Ahlfeld: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Female, aged a few days. Kind of crisis, umbilical hernia. The child was born slightly prematurely, having an umbilical hernia, the sac of which contained a diverticulum two inches long, adherent to the umbilical ring. The child lived but a few days after birth.

Case 4.—Braus· (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Age, 7. Kind of crisis, umbilical hernia. Treatment, laparotomy; the diverticulum was excised. Result, not stated. Remarks: Tumor at umbilicus, on being opened revealed a diverticulum as the only content.

Case 5.—Gluck: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Fetus born at 7 months. Kind of crisis, umbilical hernia. The symptoms consisted of signs of peritonitis and strangulation. Treatment, radical operation for hernia; the diverticulum was excised. Result, not stated. Remarks: On opening the belly, accessory mesenteric fold was found bound to a diverticulum passing over the intestine.

Case 6.—Dunchamp: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Age and sex not stated. Kind of crisis, umbilical hernia. Remarks: Umbilical hernia with thin covering, reducible, covering burst and the contents including a diverticulum flowed out.

Case 7.—Rosenblaum: (Cited from Bunts, *Ann. of Surg.*, Oct. 1904.) Age and sex not stated. Kind of crisis, umbilical hernia. Remarks: A Meckel's diverticulum was found during a radical operation for hernia.

Case 8.—Hallet. (Cited from Bunts, *Ann. of Surg.*, Oct. 1904.) Female, aged 2 hours. Kind of crisis, umbilical hernia. Treatment, laparotomy; the diverticulum was excised. Result, not stated. Remarks: Operation revealed the contents of the sac to be cecum, small intestine and a diverticulum.

Case 9.—Tiedeman: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Child born at full term, few hours old. Kind of crisis, umbilical hernia. Remarks: On opening the hernial sac it was found full of yellowish fluid and communicating with the lumen of the intestine. Tiedeman thought this a true umbilical vesicle, but Roth regarded it as an enterocyst.

Case 10.—Carle: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Age and sex not stated. Kind of crisis, umbilical hernia. Treatment, operation. Result not stated. Remarks: Umbilical tumor, hernia of Meckel's diverticulum was diagnosticated. Operation showed the sac to contain a small tumor pierced at the summit, out of which fecal matter exuded.

Case 11.—Benevoli: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Age, not stated, male. Kind of crisis, scrotal hernia. The symptoms were those of strangulation. Treatment, no operation. Result, death. Remarks: Postmortem revealed a diverticulum extending into the scrotum. Intestine below the attachment not of a natural color.

Case 12.—Morgagni: (Cited from Bunts, *Ann. of Surg.*, Oct., 1905.) Male, aged 50. Kind of crisis, inguinal hernia. The symptoms were those of strangulation. Treatment, no operation. Result, death. Remarks: Postmortem revealed small process or diverticulum given off of the small intestine as it crossed the internal ring. The incarceration caused the obstruction.

Case 13.—Littre: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Male, aged 48. Kind of crisis, scrotal hernia. Remarks: Diverticulum was found in the hernial sac.

Case 14.—Thompson: (Cited by Bunts, *Ann. of Surg.*, Oct., 1904.) Male, aged 50. Kind of crisis, inguinal hernia. Symptoms, the patient had some trouble occasionally with hernia. After prolonged attempt at reduction of the hernia, lasting about three hours, reduction was finally accomplished. The same night the patient showed symptoms of peritonitis and strangulation. Treatment, laparotomy. Result, death. Remarks: On opening the belly the cavity was found full of fecal matter and fluid. No perforation could be found in small intestine at operation. At autopsy a Meckel's diverticulum was found perforated at tip, and showing evidence of adhesion probably to sac of hernia.

Case 15.—Dungan: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Child, male. Kind of crisis, inguinal hernia. The symptoms were those of strangulation. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The hernial sac contained coils of small intestine with a diverticulum wedged between them at the neck of the sac, making reduction by taxis impossible.

Case 16.—Banks: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904.) Age and sex not stated. Kind of crisis, hernia variety not stated. Character of symptoms not noted. Treatment, laparotomy; the diverticulum was excised with portion of small bowel. Result not stated. Remarks: The diverticulum is mentioned as being part of the contents of hernial sac.

Case 17.—Webster: (Cited from Bunts, *Ann. of Surg.*, Oct., 1904).) Female, aged 42. Kind of crisis, inguinal hernia. The symptoms were those of acute and complete strangulation. Treatment, laparotomy; the diverticulum was excised; Lembert sutures were used. Result, recovery. Remarks: The diverticulum had a well-defined lumen densely adherent in canal.

Case 18.—Buntz: (*Ann. of Surg.*, Oct., 1904). Male, aged 23. Kind of crisis, inguinal hernia. The symptoms were those of partial obstruction. Treatment, laparotomy; the diverticulum with portion of small intestine was resected, union by Murphy button. Result, recovery. Remarks: On opening the sac, a knuckle of constricted diverticulum was revealed. The diverticulum was gangrenous and the intestine was also gangrenous at point of origin of the diverticulum.

Case 19.—Karajan: (*Wiener klin. Wochft.*, 1901.) Male, aged 30. Kind of crisis, inguinal hernia. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was found attached to the apex of the hernial sac. By this position it held two or three coils of small intestine in the sac.

Case 20.—Roswell Park: (Personal communication.) Male, aged 22. The symptoms were those of complete obstruction. Treatment. radical operation for hernia. Result, recovery. Re marks: The diverticulum formed the content of the sac.

Case 21.—Moore: (The Journal A. M. A., Oct. 4, 1904.) Child, aged seven months. Kind of crisis, umbilical hernia: Symptoms, the child was weak, constantly crying and straining. Treatment. laparotomy; the hole in the tip of the diverticulum was closed with Lembert suture; the diverticulum was left undisturbed otherwise because of condition of patient. Result, recovery. Remarks: Umbilical protuberance was gradually enlarging up to the time of operation. Operation revealed a diverticulum as content of sac.

Case 22.—Jos. Bryant: (Trans. New York Surg. Soc., *Ann. of Surg.*, Jan., 1893.) Male, aged 68. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the inflated bowel was incised, and the free edges stitched to edges of wound. Result, death. Remarks: The diverticulum was attached to the mesentery, constricting bowel as a band. The bowel was gangrenous.

Case 23.—Morton: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 9. Kind of crisis, obstruction by band. The symptoms were those of appendicitis and partial obstruction. Treatment, laparotomy: the diverticulum was excised. Result, recovery. Remarks: The diverticulum was adherent to the umbilicus; a loop of bowel was caught under the band thus formed.

Case 24.—Hall: (Cited from Halstead, *Ann. of Surg.*, vol.xxxv.) Male, aged 3. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to mesentery; a loop of bowel was caught under this band.

Case 25.—Operator, Sellers: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Age and sex: 32. male. Character of symptoms, those of acute obstruction. Kind of crisis, obstruction by band. Treatment, laparotomy. Result, death. Remarks: Diverticulum attached to umbilicus, loop of ileum caught under band thus formed.

Case 26.—Sellers: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 32. Kind of crisis, obstrucction by band. The symptoms were those of complete obstruction. Treatment, laparotomy: the diverticulum was excised. Result, death. Remarks: The diverticulum was attached to the umbilicus producing obstruction by kinking bowel by traction.

Case 27.—Fawcett: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 11. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy: the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to "bowel" ring constriction.

Case 28.—Snow: (Cited from Halstead, *Ann. of Surg.*, vol. 35.) Male, aged 3. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, no operation. Result, death. Remarks: At autopsy, the diverticulum was found attached to mesentery acting thus as a constricting ring.

Case 29.—Mackay: (Cited from Halstead, *Ann of Surg.*, vol. xxxv.) Young female. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy: the cord was divided. Result, recovery. Remarks: The diverticulum was attached to left to transverse colon, acting as band.

Case 30.—Hohlbeck: (cited from Halstead. Ann. of Surg., vol. xxxv.) Male, aged 4 years, 6 months. Kind of crisis, obstruction by band. The symptoms consisted of repeated attacks of pain and vomiting with a final attack of complete obstruction. Treatment, laparotomy; resection of portion of gut with diverticulum. Result, death. Remarks: The diverticulum was attached to omentum, thus producing obstruction by traction.

Case 31.—Hohlbeck: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 39. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; resection of portion of gut with diverticulum: union with Murphy button. Result, recovery. Remarks: The diverticulum was free, knotted around intestine, thus causing stricture.

Case 32.—Symonds: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 15. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy. Result, death. Remarks: The diverticulum was adherent to gangrenous intestine, thus causing constriction.

Case 33.—Symonds: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv). Female, aged 26. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy. Result, death. Remarks: "Gut folded around very wide diverticulum."

Case 34.—Schmidt: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 15. Kind of crisis, obstruction by band. The symptoms were those of partial obstruction. Treatment, laparotomy. Result, death. Remarks: The diverticulum was attached to the umbilicus, thus producing obstruction by kinking bowel from traction.

Case 35.—Berard and Delore: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 20. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to the umbilicus; there was obstruction of ileum and adhesion of loops.

Case 36.—Bell: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 16. Kind of crisis, obstruction by band; symptoms were those of complete obstruction. Treatment, laparotomy. Result. Recovery. Remarks: The diverticulum was attached to the umbilicus, thus kinking the bowel from traction.

Case 37.—Nedivill: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 16. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy, "cord divided." Result, recovery. Remarks: The diverticulum was attached to the umbilicus, a loop of bowel was caught under band thus formed.

Case 38.—Carle and Chevet: (Cited from Halstead, *Ann. of Surg.*, vol xxxv.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to the mesorectum; a loop of bowel was caught under this band.

Case 39.—De Gueovain: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 16. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: A pear-shaped diverticulum was attached to the mesentery, producing a twist in the small intestine at the point of origin of the diverticulum by traction.

Case 40.—Kammerer: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 20. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, the diverticulum was removed with gangrenous bowel. Result, death. Remarks: The diverticulum was attached to a loop of bowel; another loop was caught under this band.

Case 41.—Kammerer: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 44. Kind of crisis, obstruction by band. The symptoms consisted of obstruction with fecal fistula. Treatment, laparotomy; the diverticulum was excised. Result, recovery, with fecal fistula. Remarks: The diverticulum was attached to the umbilicus, thus producing obstruction from traction. At the first operation an artificial anus was established. The diverticulum was found at second operation.

Case 42.—Kammerer: (Cited from Halstead, *Am. of Surg.*, vol. xxxv.) Female, aged 18. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the cord was divided. Result, recovery. Remarks: The diverticulum was attached to the mesentery, acting as a band under which a loop of bowel became strangulated.

Case 43.—Thompson: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 29. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised, Lembert sutures were used. Result, death. Remarks: The diverticulum was attached to mesentery, acting as band.

Case 44.—Erdmann: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 20. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction complicated with appendicitis. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to the umbilicus; a loop of bowel was caught under the band thus formed.

Case 45.—Halstead: (*Ann. of Surg.*, vol. xxxv.) Male, aged 24. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. The history showed several previous attacks of pain. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to root of mesentery, thus acting as a band.

Case 46.—Taylor: Trans. Phila. Academy of Surg., *Ann. of* Surg., vol. xxxvii.) Female, aged 20. Kind of crisis, obstruction by band. The history showed previous attacks of pain about one year previous to operation; the later symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum wound around the gut through a hole in the mesentery, thus acting as constricting band.

Case 47.—Gildersleeve: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 29. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, patient was not operated on. Result, death. Remarks: The diverticulum was attached to mesentery; the gut was caught under this band.

Case 48.—Fox: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 5. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, patient was not operated on. Result, death. Remarks: The diverticulum was attached to the mesentery, acting as band; the diverticulum had ruptured at base.

Case 49.—Heresco: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy, the cause of strangulation was not found. Result, death. Remarks: Autopsy revealed the diverticulum attached to the mesentery: a loop of bowel was caught under this band.

Case 50.—Jordan: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 19. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; a portion of the gut was resected, lateral anastomosis. Result, death. Remarks: The diverticulum was attached to the umbilicus, causing obstruction by traction; the bowel was gangrenous.

Case 51.—Latz: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 4. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy. Result, death. Remarks: The diverticulum was attached to the mesentery; the bowel was caught under this band.

Case 52.—Latz: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 12. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum was attached to the mesentery; the gut was caught under this ring.

Case 53.—Broca: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 7 weeks. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the gut was released. Result, death. Remarks: The diverticulum was attached to the mesentery; the gut was caught under band thus formed.

Case 54.—Elliot: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 30. Kind of crisis, obstruction by band. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum was attached to the umbilicus; the gut had kinked and twisted at point of origin of diverticulum.

Case 55.—Councilman: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, not mentioned. Result, death. Remarks: Autopsy revealed a diverticulum attached to the mesentery under which a loop of bowel became caught and gangrenous.

Case 56.—Boyle: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Age and sex not mentioned. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; "constriction removed." Result, death. Remarks: The diverticulm was attached to umbilicus, loop of bowel was caught under this tensely drawn band.

Case 57.—Ochsner: (Cited from Halstead, *Ann of Surg.*, vol. xxxv.) Male, aged 81. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the loop was disengaged. Result, death. Remarks: The diverticulum was attached to the mesentery; a loop of bowel was caught under band thus formed.

Case 58.—Prince: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 4. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; a portion of gut was resected, including diverticulum; union by Murphy button. Result, death. Remarks: The diverticulum was attached to the mesentery, a loop of bowel was caught under the band thus formed.

Case 59.—Oderfeld: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to the mesentery; a loop of gut was caught under this band. This case was diagnosticated as obstruction by Meckel's diverticulum before operation.

Case 60.—Zurnrinkle: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 19. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum was attached to the mesentery; a loop of bowel caught under this band thus formed.

Case 61.—Allen: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 34. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, not mentioned. Remarks: The diverticulum was attached to the umbilicus; the gut was twisted about this band.

Case 62.—Prendelsberge: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 51. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy. Result, death. Remarks: Cause of obstruction was not found at operation. Autopsy revealed a diverticulum attached to mesentery acting as a band in constricting the bowel.

Case 63.—Taylor: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 22. Kind of crisis, obstruction by band. Treatment, laparotomy; "gut released." Result, death. Remarks: The diverticulum was attached to the gut for one and one-half feet above its origin; a loop of gut was caught under this band.

Case 64.—Campbell: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 71. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, patient was not operated on. Result, death. Remarks: (Autopsy) the diverticulum was free, acting as a band.

Case 65.—Walsberge: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 25. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; "gut released." Result, death. Remarks: The diverticulum was free—ends obliterated; there was obstruction by traction at point of origin of diverticulum; diverticulum formed a cyst; the intestine was necrotic.

Case 66.—Mintz: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 24. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, no operation. Result, death. Remarks: (Autopsy) The diverticulum was attached to the mesentery; a loop of bowel was caught under this band.

Case 67.—Willams: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 25. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy. Result, death. Remarks: The diverticulum was attached to the mesentery: a loop of bowel was caught under this band.

Case 68.—Morgan: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 38. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy: the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to the mesentery; a loop of bowel was caught under this band.

Case 69.—McArthur: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 40. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy: the appendix and diverticulum were excised. Result, death. Remarks: The diverticulum was attached to the mesentery and to the umbilicus; the appendix was caught under this tensely drawn band, becoming gangrenous. There was rupture of the appendix with peritonitis.

Case 70.—Henrotin: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; strangulation was released. Result, recovery. Remarks: The diverticulum was attached to stump of appendix by inflammatory adhesions; the intestine was twisted and obstructed.

Case 71.—Davison: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 7. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; strangulation was released. Result, death. Remarks: The diverticulum was attached to another loop of intestine.

Case 72.—Bevan: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 22. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to the umbilicus, thus acting as a band.

Case 73.—Bevan: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 35. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks The diverticulum with terminal ligament formed a ring.

Case 74.—Picque: (*Munch. med. Wochft.*, May, 1898.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute complete obstruction. Treatment, laparotomy; the diverticulum was cut between ligatures. Result, not stated. Remarks: The diverticulum encircled the intestine, crooking it.

Case 75.—Keefe: (*Boston Med. and Surg. Jour.*, Feb., 1905.) Male, aged 21. Kind of crisis, obstruction by band. The symptoms were those of acute complete obstruction. Treatment, laparotomy: the diverticulum was excised, stump inverted, and Lembert sutures used. Result, recovery. Remarks: The diverticulum was wound around the intestine.

Case 76.—Keefe: (*Boston Med. and Surg. Jour.*, Feb., 1905.) Male, age 17. Kind of crisis, obstruction by band. The symptoms were those of complete obstruction. Treatment, laparotomy; the diverticulum was excised; Lembert sutures were used. Result, death. Remarks: The diverticulum was adherent to coils of intestine.

Case 77.—Karajan: (*Wiener klin. Wockft.*, 1901.) Male, aged 20. Kind of crisis, obstruction by band. When young, the patient had a fistula opening at the umbilicus, which would heal and break again. When taken to the hospital he had been suddenly taken with pain and vomiting. Treatment, laparotomy. The diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to the umbilicus, acting as band.

Case 78.—Karajan: (*Wiener klin. Woehen.*, 1901.) Male, aged 38. Kind of crisis, obstruction by band. The patient had had similar attacks previously to present one of acute obstruction. Treatment, laparotomy. The diverticulum was excised. Result, death. Remarks: The diverticulum was attached to posterior abdominal wall, acting as band.

Case 79.—Thienhaus: (*New York Med. Jour.*, February, 1902.) Male, aged 17. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy. The diverticulum was excised. Czerny-Lembert sutures were used. Result, recovery. Remarks: The diverticulum was attached to the umbilicus: a loop of bowel was caught under band thus formed.

Case 80.—Roswell Park: (Personal communication.) Male, aged 40. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy. Result, recovery. Remarks: The diverticulum was adherent, acting as a band.

Case 81.—W. J. Mayo: (Personal communication.) Male, aged 14. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. There was a history of similar previous attacks. Treatment, laparotomy. Result, not mentioned. Remarks: The diverticulum was adherent, acting as a band.

Case 82.—W. J. Mayo: (Personal communication.) Male, aged 26. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. There was a history of similar attacks previous to operation. Treatment, laparotomy. Result, not mentioned. Remarks: The diverticulum was adherent, acting as a band.

Case 83.—Senn: (Personal communication.) Age and sex not mentioned. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy. The diverticulum was excised. Result, recovery. Remarks: The diverticulum was adherent, acting as a band.

Case 84.—Senn: (Personal communication.) Age and sex not mentioned. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy. The diverticulum was excised. Result, recovery. Remarks: The diverticulum was adherent, acting as a band.

Case 85.—B. M. Ricketts: (Personal communication.) Male, aged 27. Kind of crisis, obstruction by band. The symptoms were those of partial obstruction. Treatment, laparotomy, resection of ileocecal portion of bowel and ileocolic anastomosis with sutures. Result, death. Remarks: Incision revealed tuberculous peritonitis. The ileocecal valve was the seat of a tuberculous neoplasm. The ileum was invaginated under a band extending from the ileum to the colon on the right side.

Case 86.—Ricketts: (Personal communication.) Male, aged 32. Kind of crisis, obstruction by band. The symptoms were those of partial obstruction. Treatment, laparotomy. The band was cut between ligatures. Result, death. Remarks: The diverticulum was adherent to the large bowel, acting as a band under which the gut became invaginated.

Case 87.—Ricketts: (Personal communication.) Female, aged 39. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy. The diverticulum was cut between ligatures. Result, death. Remarks: The diverticulum was adherent, acting as a band.

Case 88.—Dunning: (Personal communication.) Young female. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction, coming on after pelvic trouble. Treatment, laparotomy. A portion of bowel with diverticulum was resected; union by Murphy button. Result, recovery. Remarks: The diverticulum was adherent, causing constriction and kinking of bowel at point of origin.

Case 89.—Rob Abbe: (Personal communication.) Age, 6; sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, a portion of bowel with diverticulum was resected: end-to-end anastomosis. Result, recovery. Remarks: The diverticulum was adherent to the anterior abdominal wall; a loop of bowel was caught under this band.

Case 90.—M. D. Mann: (Personal communication.) Male, age, 35. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction; there was a history of previous attacks of intestinal colic. Treatment, laparotomy; the obstruction was released. Result, recovery. Remarks: The diverticulum was adherent to the small intestine, forming a band under which the gut became strangulated.

Case 91.—Purviance: (*Medical Summary*, April 1901.) Male, aged 9. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy. Result, death. Remarks: The diverticulum was attached to the umbilicus, acting as a band under which the gut became strangulated.

Case 92.—Sexton: (*Indiana Med. Jour.*, December, 1902.) Male, aged 9. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction; there was a history of symptoms of partial obstruction. Treatment, laparotomy. Result, death. Remarks: The diverticulum was adherent to the intestine almost at point of origin, forming a ring under which the bowel was caught.

Case 93.—Cazin: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 11. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; obstruction relieved. Result, death. Remarks: The diverticulum was unattached, "snared loop of intestines."

Case 94.—Gibbon: (*Med. News*, vol. lxxxli.) Female, aged 10. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was adherent to the umbilicus, producing obstruction by kinking the bowel from traction.

Case 95.—Chassevant: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, patient was not operated on. Result, death. Remarks (autopsy): The diverticulum was attached to the umbilicus, thus kinking of the bowel by traction.

Case 96.—Guinard: Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Young, male. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy. Result, recovery. Remarks: The diverticulum was attached to the mesentery, thus constricting the bowel.

Case 97.—Rixford: (Personal communication.) Aged 3. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: There was a diverticulum from the umbilicus to the intestine, with a band to the mesentery; the cecum and colon became strangulated under this band.

Case 98.—MacDonald: (Personal communication.) Age, 30. male. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy. Result, death. Remarks: The diverticulum was adherent in pelvis; the gut caught under this band.

Case 99.—Willy Meyer: (Personal communication.) Male, aged 45. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum from intestine to umbilicus was adherent to mesentery, acting as a band.

Case 100.—Lilienthal: (Personal communication.) Female, aged 7. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy, enteroenterostomy; the diverticulum was excised at tip. Result, death. Remarks: The diverticulum was the caliber of the small intestine with a terminal nipple-like projection, which was fished out from behind a fold of mesentery, which for some inexplicable reason seem to have constricted its base.

Case 101.—Tiffany: (Personal communication.) Male. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy. Result, death. Remarks: The diverticulum was caught in loop of small intestine and had become gangrenous.

Case 102.—Moore: (The Journal A. M. A., Oct. 4, 1902.) Male, aged 4. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the band was divided between ligatures. Result, recovery. Remarks: The sudden onset of symptoms gave rise to a diagnosis of obstruction by Meckel's diverticulum. The diverticulum was found attached to the mesentery and constricting the bowel.

Case 103.—Abbot: (Cited by Moore, The Journal A. M. A., Oct. 4, 1902.) Male, aged 19. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to the umbilicus; a loop of bowel was caught under the band thus formed.

Case 104.—Greig Smith: (*Abdominal Surg.*, vol. ii.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the band was cut. Result, recovery.

Case 105.—Greig Smith: (*Abdominal Surg.*, vol. ii.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy: the diverticulum was excised and the stump inverted; purse-string sutures were used. Result, not stated.

Case 106.—Maylard: ("Surgery of the Alimentary Canal," p. 462.) Male, aged 4. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, no operation. Result, death. Remarks: The diverticulum was attached to the mesentery; a loop of bowel was caught under this band.

Case 107.—Butcher: (Cited by Maylard, "Surgery of the Alimentary Canal," p. 462.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the band was divided. Result not stated.

Case 108.—Pick: (Cited by Maylard, "Surgery of the Alimentary Canal," p. 462.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment not stated. Result not stated.

Case 109.—Gillette: (Personal communication.) Male, aged 40. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction: there was a history of previous attacks of partial obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to the mesentery; a loop of bowel was caught under this band.

Case 110.—Gillette: (Personal communication.) Male, aged 32. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction; there was a history of previous attacks of partial obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was attached to the brim of the pelvis; a loop of bowel was caught under the band thus formed.

Case 111.—Bernays: (Personal communication.) Male, aged 7. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the band was cut between ligatures. Result, recovery. Remarks: The diverticulum was attached to the umbilicus; a loop of bowel was caught under this band.

Case 112.—Wyman: (Personal communication.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the obstruction was released. Result, recovery. Remarks: The diverticulum was wound about a coil of intestine.

Case 113.—Wyman: (Personal communication.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the obstruction was released. Result, recovery. Remarks: The diverticulum was wound about a coil of intestine.

Case 114.—Wyman: (Personal communication.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum was wound about the intestine.

Case 115.—Wyman: (Personal communication.) Age and sex not stated. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum was wound around the intestine.

Case 116.—C. C. Smith: (*Ann. of Surg.*, November, 1905.) Male, aged 19. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the band was cut between ligatures and the stump inverted; a purse-string suture was used. Result, recovery. Remarks: The diverticulum was adherent to left pelvic wall; a loop of bowel was caught under this band. The diverticulum also was twisted on itself.

Case 117.—Markoe: (Personal communication.) Male, aged 22. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised and stump inverted. Result, death. Remarks: The diverticulum was adherent to the internal ring, acting as a band.

Case 118.—Markoe (Personal communication.) Male, aged 19. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum was adherent to the mesentery, acting as a band.

Case 119.—Bowers: (Personal communication.) Female, aged 7. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, no operation. Result, death. Remarks (autopsy): The diverticulum was adherent to the mesentery, producing kinking of bowel by traction.

Case 120.—Beavers: (Personal communication.) Male, aged 21. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction; no operation. Result, death. Remarks: The diverticulum was adherent to the anterior abdominal wall, and had become gangrenous by stretching and twisting; a loop of bowel had become strangulated under this band.

Case 121.—Allan H. Williams: (Personal communication.) Male, aged 38. Kind of crisis, obstruction by band. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was adherent to the small gut; a loop of bowel was caught under this band. After operation, a fistula formed which healed spontaneously.

Case 122.—M. F. Porter: (Date of operation, Oct. 17, 1904.) Male, aged 19. Kind of crisis, obstruction by band with volvulus. The symptoms were those of acute complete obstruction. Treatment, laparotomy; the diverticulum was excised; a purse-string suture was used. Result, death. Remarks: The diverticulum was adherent to the left abdominal wall.

Case 123.—M. F. Porter: (Operation, Oct. 11, 1904.) Male, aged 8. Kind of crisis, obstruction by band. The symptoms were those of acute complete obstruction. Treatment, laparotomy; the diverticulum was excised; purse-string sutures were used. Result, recovery. Remarks: The diverticulum was found adherent to the upper and left part of anterior abdominal wall; under it a loop of bowel had become strangulated.

Case 124.—Arthur Barth: (*Ann. Surg.*, vol. viii.) Age and sex not given. Kind of crisis, prolapse of intestine. Symptoms not mentioned. Treatment, laparotomy; the diverticulum was excised; Czerny suture was used. Result, death. Remarks: Patulous diverticulum was inverted, complicating prolapse of intestine.

Case 125.—Briddon: (*Ann. of Surg.*, 1888.) Child, aged 10 days. Kind of crisis, prolapse of intestine. Treatment, artificial anus established at first operation; diverticulum excised at second operation. Result, recovery. Remarks: Bowel was prolapsed from umbilical aperture; diverticulum was also protruding. An artificial anus was established because of the contracted state of the lower bowel.

Case 126.—Beach: (*Ann. of Surg.*, vol. xxiv.) Female, aged 62. Kind of crisis, pelvic tumor, consisting of a diverticulum filled with hardened fecal material, connecting ileum and bladder. Treatment, laparotomy; the tumor was excised between ligatures. Result, recovery. Remarks: The best explanation of the cyst was that it was a Meckel's diverticulum; this was based on histologic examination.

Case 127.—Malgaigne and Blanc: (Cited from Halstead, *Ann. of Surg.*, vol. xxxv.) Male. Kind of crisis, bowel obstruction. The symptoms were those of complete obstruction. Treatment laparotomy; the diverticulum was excised. Result, unknown. Remarks: Obstruction was caused by rupture of diverticulum and pressure of abscess on gut.

Case 128.—W. W. Cheyne: (*Ann of Surg.*, December, 1904.) Male, aged -9. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, laparotomy; lateral anastomosis. Result, recovery. Remarks: The bowel was obstructed by intussusception above origin of diverticulum.

Case 129.—Studgaard: (Cited by Cheyne, *Ann. of Surg.*, December, 1904.) Male, aged 37. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, laparotomy; resection of portion of bowel. Result, death. Remarks: The diverticulum was invaginated.

Case 130.—Brunner: (Cited by Cheyne, *Ann. of Surg.*, December, 1904.) Child, aged 4. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, laparotomy; resection of portion of bowel. Result, recovery. Remarks: A firm tumor was exposed within the cecum, having an accessory pancreas at apex imbedded in fat. The diverticulum was invaginated by the accessory pancreas, which in turn had caused intussusception of the bowel.

Case 131.—Heller: (Cited by Cheyne, *Ann. of Surg.*, December, 1904.) Age and sex not stated. Kind of crisis, intussusception of diverticulum. Symptoms not stated. Remarks (report from specimen): There was invagination of the diverticulum leading to intussusception of the ileum and colon.

Case 132.—Heller: (Cited by Cheyne, *Ann. of Surg.*, December, 1904.) Age 46. Kind of crisis, intussusception of diverticulum. Remarks (report of specimen): Patient died from the effects of perforating ulcer of stomach. Autopsy revealed an invaginated diverticulum.

Case 133.—Heller: (Cited by Cheyne, *Ann of Surg.*, December, 1904.) Age and sex not stated. Kind of crisis, invagination of diverticulum. Remarks: At autopsy of a patient who died of pyonephritis an invaginated diverticulum was found.

Case 134.—Maroni: (Cited by Cheyne, *Ann. of Surg.*, December, 1904.) Male, aged 22. Kind of crisis, intussusception of diverticulum. The symptoms were those of complete obstruction. Treatment, laparotomy. Result, death. Remarks: The diverticulum was invaginated into the bowel.

Case 135.—Ewald: (Cited by Halstead, Ann. of Surg., vol. xxxv.) Female, aged 42. Kind of crisis, intussusception of diverticulum. The symptoms were those of partial obstruction. Treatment, no operation. Result, death. Remarks (autopsy): There was inflammatory stenosis above the point of origin of the diverticulum; the diverticulum was inverted; there was perforation of the intestine.

Case 136.—Weil and Frankel: (Cited by Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 4. Kind of crisis, intussusception of diverticulum and ileum. The symptoms were those of complete obstruction. Treatment, laparotomy; resection of portion of bowel. Result, death.

Case 137.—Adams: (Cited by Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 42. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, no operation. Result, death. Remarks: There was invagination of the diverticulum, causing an ileocolic intussusception.

Case 138.—Adams: (Cited by Halstead, *Ann. of Surg.*, vol. xxxv.) Male. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, no operation. Result, death. Remarks: The diverticulum was invaginated, causing ileocolic intussusception.

Case 139.—Hohlbeck: (Cited by Halstead, *Ann of Surg.*, vol. xxxv.) Age, 18. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, laparotomy; the invagination was dislodged and the diverticulum excised. Result, death. Remarks: There was inversion of the mucous lining of the diverticulum, causing intussusception of bowel.

Case 140.—Robison: (Cited by Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 5. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, laparotomy, resection of portion of bowel. Result, death. Remarks: There was inversion of diverticulum with invagination of the bowel above the diverticulum.

Case 141.—Wainwright: (*Ann. of Surg.*, vol. xxxv.) Male, aged 24. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, laparotomy; the intussusception was reduced and the diverticulum excised; Lembert sutures were used. Result, recovery. Remarks: The diverticulum formed the apex of intussuscepted bowel; the diverticulum itself being inverted, there were no adhesions; the intussusception was reduced on pressure.

Case 142.—MacDonald: (Personal communication.) Male, aged 20. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, laparotomy; resection of portion of intussuscepted bowel; union by Murphy button. Result, recovery. Remarks: There was intussusception of the diverticulum and of the ileum

Case 143.—McFarland: (*Phila. Med. Jour.*, May, 1901.) Male, aged 60. Kind of crisis, intussusception. The symptoms were those of partial obstruction. Treatment, no operation. Result, death. Remarks (autopsy): The diverticulum was twisted on itself and partly invaginated into the small intestine.

Case 144.—M. F. Porter: (Operation, Oct. 2, 1904.) Male, aged 3. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, laparotomy. Result, death. Remarks: The child was cold when carried to the table. The diverticulum was invaginated, causing intussusception of ileum.

Case 145.—Dobson: (*Lancet*, April 25, 1903.) Male aged 4½. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, laparotomy; the gut was resected, including irreducible intussuscepted portion. Result, recovery. Remarks: The diverticulum formed the apex of intussuscepted bowel.

Case 146.—Kuttner: (Cited by Halstead, *Ann of Surg.*, vol. xxxv.) Female, aged 49. Kind of crisis, intussusception. The diverticulum formed the apex of intussuscepted bowel.

Case 147.—Stubenrauch: (Cited by Halstead, *Ann. of Surg.*, vol. xxxv.) Female, aged 5½. Kind of crisis, intussusception. The symptoms were those of complete obstruction. Treatment, laparotomy. Result, death. Remarks: There was intussusception of the ileum starting at the point of origin of the diverticulum.

Case 148.—Meyer and Lee: (*Amer. Jour. Med. Sciences*, March, 1905.) Age, 7 months. Kind of crisis, volvulus. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum formed a large cystic tumor which by traction produced twist in bowel.

Case 149.—Gally and Jeannel: (Cited by Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 47. Kind of crisis, volvulus. The symptoms were those of acute obstruction. Treatment, laparotomy; resection of gangrenous bowel. Result, death. Remarks: The volvulus of the bowel was caused by traction at point of origin of diverticulum; the bowel was gangrenous.

Case 150.—Dugan: (*Pediatrics*, vol ii, p. 71.) Male, aged 11 months. Kind of crisis, volvulus. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The gut was twisted at the point of origin of the diverticulum; the diverticulum was also twisted at its base.

CASE 151.—Makins: (Cited by Halstead, *Ann of Surg.*, vol. xxxv.) Age and sex not stated. Kind of crisis, volvulus. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum was twisted, gangrenous and perforated.

CASE 152.—Mackenzie: (Cited by Halstead, *Ann of Surg.*, vol. xxxv.) Male, aged 37. Kind of crisis, volvulus. The symptoms were those of acute obstruction. Treatment, no operation. Result, death. Remarks: The diverticulum was attached to the umbilicus; the small bowel was twisted for five feet above the point of origin of the diverticulum.

CASE 153.—Walsberge: (Cited by Halstead, *Ann. of Surg.*, vol. xxxv.) Male, aged 14. Kind of crisis, volvulus. The symptoms were those of acute obstruction. Treatment, laparotomy; an artificial anus was established; the diverticulum was not excised. Result, death. Remarks (autopsy): The distended diverticulum was adherent to the umbilicus; torsion of diverticulum caused sharp twist at point of origin of diverticulum in gut; the intestine was necrotic.

CASE 154—Taylor: (Cited by Halstead, *Ann of Surg.*, vol. xxxv.) Female, aged 6. Kind of crisis, volvulus. The symptoms were those of acute obstruction; there was a history of several previous similar attacks. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was cystic and twisted three times at base.

CASE 155.—Kramer: (Cited by Halstead, *Ann. of Surg.*, vol xxxv.) Male, aged 18. Kind of crisis, volvulus. The symptoms were those of acute obstruction. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: A pear shaped diverticulum was adherent to the mesentery; the small intestine was twisted at the point of attachment.

CASE 156.—Broca: (Cited by Hubbard, *Ann of Surg.*, vol. xxxv.) Male, aged 6 months. Kind of crisis, patent at umbilicus. Treatment, laparotomy; resection of diverticulum. Result, recovery. Remarks: There was a small red tumor at the umbilicus, into which a probe could be passed for some distance; the mucous membrane around the orifice was continuous with the skin.

CASE 157.—Broca: (Cited by Hubbard, *Ann. of Surg.*, vol. xxxv.) Male, aged 10 months. Kind of crisis, patent at umbilicus. Treatment, laparotomy. Resection of diverticulum. Result, recovery. Remarks: There was a small red tumor at the umbilicus; everted diverticulum; hole at summit of tumor.

CASE 158.—Neurath: (Cited by Hubbard, *Ann. of Surg.*, vol. xxxv.) Age 3 weeks. Kind of crisis, patent at umbilicus. Treatment, laparotomy; resection of diverticulum. Result, recovery. Remarks: There was a red tumor at the umbilicus, with fecal discharge from a hole in summit.

CASE 159.—Hubbard: (*Ann. of Surg.*, vol. xxxv.) Female, aged 1 month. Kind of crisis, patent at umbilicus. Treatment, laparotomy; the diverticulum was excised; two rows of Lembert sutures were used. Result, recovery. Remarks: There was a small red tumor at the umbilicus, with fecal discharge from a hole in the summit.

CASE 160.—Bird: (*Ann. of Surg.*, vol. xxxviii.) Male, aged 1 month. Kind of crisis, patent at umbilicus. Treatment not stated. Result, death. Remarks: Tumor at umbilicus, with hole at summit and escape of fecal matter.

CASE 161.—Darnall: (*N. Y. Med. Jour.*, Jan. 12, 1901.) Male, aged 22. Kind of crisis, diverticulitis. The symptoms simulated those of appendicitis. Treatment, laparotomy. Result, death. Remarks: The diverticulum was adherent to the umbilicus and was gangrenous at proximal end and perforated.

CASE 162.—Wright: (Cited from reprint of paper read before Dubuque Medical Society, 1899.) Male, aged 27. Kind of crisis, diverticulitis. There was a history of several previous attacks simulating appendicitis. Treatment, laparotomy; resection of portion of bowel and anastomosis by Murphy button. Result, recovery. Remarks: The small intestine was thin at base of diverticulum; the muscular coat had given way. The anastomosis was made of healthy tissue.

CASE 163.—Roth: (Cited by Halstead, *Medical Record*, 1902.) Age, 16 months. Kind of crisis, diverticulitis. The symptoms were those of general peritonitis. Treatment not stated. Result, death. Remarks: There was torsion of the neck of the diverticulum, resulting in gangrenous diverticulitis with general septic peritonitis.

CASE 164.—Swkonski: (Cited by Halstead, *Med. Record*, 1902.) Age, 16 months. Kind of crisis, diverticulitis. The symptoms were those of general peritonitis. Treatment, not stated. Result, death. Remarks: The diverticulum was gangrenous, causing general septic peritonitis.

CASE 165.—Squires: (THE JOURNAL American Medical Association, Oct. 4, 1902.) Male, aged 23. Kind of crisis, diverticulitis. The symptoms simulated appendicitis. Treatment, laparotomy: the diverticulum was excised. Result, recovery. Remarks: The diverticulum was inflamed, causing symptoms simulating appendicitis.

CASE 166.—Fitch: (Cited by Halstead, *Med. Record*, 1902.) Age and sex not stated. Kind of crisis, tuberculous ulceration of the diverticulum. Treatment not stated. Result not stated. Remarks: The diverticulum presented on examination three ulcers.

CASE 167.—Dixon: (Cited by Halstead, *Med. Record*, 1902.) Male. Kind of crisis, tuberculous ulceration of the diverticulum. Treatment not stated. Result, death. Remarks: The diverticulum presented on examination ulcerated condition.

CASE 168.—Chauffard: (Cited by Halstead, *Med. Record*, 1902.) age, 9. Kind of crisis, perforation of diverticulum during typhoid. The symptoms were those of general peritonitis. Treatment not stated. Result, death. Remarks: The diverticulum presented on examination a tumefied Peyer's patch, but no ulceration or perforation

CASE 169—Halstead: (*Med. Record*, 1902.) Male, aged 26. Kind of crisis, perforation in typhoid. The symptoms were those of general peritonitis. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum was perforated at tip.

CASE 170.—Halstead: (*Med. Record*, 1902.) Male, aged 45. Kind of crisis, perforation in typhoid. The symptoms were those of peritonitis. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum was adherent to the anterior abdominal wall and was perforated at the tip.

CASE 171.—Galton: (Cited by Halstead, *Med. Record*, 1902.) Age, 12. Kind of crisis, perforation in typhoid. The symptoms were those of peritonitis. Treatment not stated. Result, death. Remarks: The diverticulum and ileum were perforated.

CASE 172.—Boinet and Delanglade: (Cited by Halstead, *Med. Record*, 1902.) Female, aged 35. Kind of crisis, perforation in typhoid. The symptoms were those of peritonitis. Treatment, laparotomy; the diverticulum was excised. Result, death. Remarks: The diverticulum was found perforated at tip.

CASE 173.—Korte: (Cited by Halstead, *Med. Record*, 1902.) Male, adult. Kind of crisis, diverticulitis. The symptoms were those of peritonitis. Treatment not stated. Result, death. Remarks: A foreign body was found in the diverticulum as cause of the inflammation.

CASE 174.—Demice: (Cited by Halstead, *Med. Record*, 1902.) Age and sex not stated. Kind of crisis, diverticulitis. The symptoms were those of peritonitis. Treatment not stated. Result, death. Remarks: A foreign body was found in the diverticulum as cause of inflammatory process.

CASE 175.—Best: (Cited by Halstead, *Med Record*, 1902.) Age and sex not stated. Kind of crisis, diverticulitis. The symptoms were those of peritonitis. Treatment not stated. Result, death. Remarks: The diverticulum was filled with cherry stones and perforated.

CASE 176.—Houston: (Cited by Halstead, *Med. Record*, 1902.) Age and sex not stated. Kind of crisis, diverticulitis. The patient had recurring attacks simulating appendicitis. Treatment not stated. Result, death. Remarks. The diverticulum was filled with fecal concretion.

CASE 177.—Galeazzi: (Cited by Halstead, *Med. Record*, 1902.) Age and sex not stated. Kind of crisis, diverticulitis. The symptoms were those of peritonitis. Treatment not stated. Result, death. Remarks: The diverticulum was filled with fecal concretion.

CASE 178.—Escher: (Cited by Halstead, *Med. Record*, 1902.) Age and sex not stated. Kind of crisis, diverticulitis. The symptoms were those of peritonitis. Treatment not stated. Result, death. Remarks: Round worms were found as cause of diverticulitis.

CASE 179.—Blane: (Cited by Halstead, *Med. Record*, 1902.) Age and sex not stated. Kind of crisis, diverticulitis. The symptoms were those of peritonitis. Treatment not stated. Result, death. Remarks: A fish bone was cause of the diverticulitis.

CASE 180.—W. Kramer: (THE JOURNAL of the American Medical Association, 1898.) Age and sex not stated. Kind of crisis, diverticulitis. The symptoms were those of peritonitis. Treatment, laparotomy: resection of diverticulum between ligatures. Result, not stated. Remarks: A fruit seed was cause of the diverticulitis; diverticulum was perforated.

CASE 181.—Cramer: (Cited by Halstead, *Med. Record*, 1902.) Age and sex not stated. Kind of crisis, diverticulitis. The symptoms were those of peritonitis. Treatment not stated. Result not stated. Remarks: The diverticulum was ruptured as result of kick by horse, causing suppurative peritonitis.

CASE 182.—C. C. Smith: (*Ann. of Surg.*, November, 1905.) Age, 10. Kind of crisis, diverticulitis. The symptoms simulated appendicitis. Treatment, laparotomy; the diverticulum was excised between ligatures. Result, recovery. Remarks: The diverticulum was inflamed and adherent to the omentum.

CASE 183.—Nicolson: (Cited by Smith, *Ann. of Surg.*, November, 1905.) Age and sex not stated. Kind of crisis, diverticulum gangrenous with adhesions causing obstruction. Treatment, laparotomy. Result, death. Remarks: The diverticulum was gangrenous and adherent to umbilicus, acting as band, causing obstruction.

CASE 184.—Bernays: (Personal communication.) Age and sex not stated. Kind of crisis, diverticulitis. The symptoms were those simulating appendicitis. Treatment, laparotomy; the diverticulum was excised. Result, recovery. Remarks: The diverticulum was inflamed and gangrenous.

DISCUSSION.

DR. R. WINSLOW, Baltimore, mentioned two cases. In one he encountered a Meckel's diverticulum in a gangrenous hernia, which resulted fatally. The other patient, a woman, was recently taken to him with a lump in her right side. It was somewhat movable, and operation was performed under the impression that it was probably an appendicitis. Dr. Winslow found a pus tube with a large ovary, chronic appendicitis and Meckel's diverticulum, all surrounded by omentum. He removed the diverticulum and the appendix and the patient recovered.

DR. W. JEPSON, Sioux City, Iowa, said that it is certainly somewhat remarkable that there exists such a paucity of reported cases wherein this remnant of embryologic life has led to morbid processes demanding operative interference; especially is this so when it is considered that postmortem findings reveal the fact that from one to two of every hundred individuals are possessed of a Meckel's diverticulum. He is of the belief that serious intra-abdominal disturbances occasioned by this structure are observed by surgeons more frequently than is borne out by reported cases. Three cases coming to operation have been observed by him. One was the case of a child 16 months old, suffering from intussusception. When the bowel was exposed it was found that a Meckel's diverticulum was primarily intussuscepted, and this in turn caused an intussusception of the ileum. The intussusceptions of the ileum and of Meckel's diverticulum were readily reduced. Owing to the child's grave condition, Dr. Jepson did not feel warranted in removing the diverticulum as he otherwise would have done. No difficulty has been experienced by the child since that time, now nearly three years ago. The second case occurred in a man 37 years of age who possessed a diverticulum which was dilated, being about the size of an orange. It contained fourteen concretions, each being about the size of a hickory nut, besides a great number of other food products, such as grape seeds, etc. The contents of the diverticulum produced such traction on the bowel that it led to an angulation with consequent intestinal obstruction, which in turn disturbed the circulation of the diverticulum so that it became gangrenous. The third case observed was one in which the diverticulum became strangulated in the sac of a right inguinal hernia.

Dr. Miles Porter stated that Dr. Cheyne says that in cases of intussusception of Meckel's diverticulum the mucous membrane alone is turned in, but in the three cases which he has examined it included all the coats.

EXSTROPHY OF THE BLADDER SUCCESSFULLY TREATED BY PETER'S METHOD.*

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I am submitting the report of a single case, because it illustrates well an exceedingly easy method of meeting difficult conditions and controlling them almost entirely, so far as theoretical considerations go, and quite entirely so far as this particular case is concerned.

It is hardly necessary to repeat that the ordinary plastic operations which contemplated the creation of a bladder, in cases of exstrophy of that organ, did not include the creation of a sphincter vesicæ; and yet a bladder with no sphincter is really no bladder, but is only a wider part of the urinary tract. After the most brilliant success in an operation of this type the patient has to wear a urinal, his real bladder, hanging down by his leg.

The utilization of the colon or rectum as a receptacle for the urine, an artificial reversion to the avian type, was resorted to, in order to make the sphincter ani do the work of the absent sphincter vesicæ. The genuine brilliancy of the idea, which may be credited to John Simon[1] in 1805 could not at the time of its inception be rewarded by a practical result, for the sepsis that naturally followed any such operation at that period killed the patient. The same sepsis has stood steadily in the way of the method during all the intervening years and probably will always stand there, but in some details it has been circumvented, more especially the septic peritonitis, by the simple plan of avoiding the peritoneum, while the septic nephritis, unless statistics wholly mislead, has been so long postponed as to give rise to the hope that it may never occur.

The operation accomplishing this, described by the originator, George A. Peters,[1] of Toronto, avoids opening the peritoneum by confining the work to the space in the abdomen and pelvis, below the vesicorectal limits of the peritoneum, in both males and females, and so narrows the possibility of septic danger to that inherent in all operation work and avoidable in almost all, and that, too, due to the ascending infection of the ureters and kidneys.

The operation dissects out the ureters individually, keeping a small circular patch of bladder wall around the vesical orifice of each. The rest of the bladder wall is ablated. Each ureter, with its button of bladder wall, is then drawn through a small slit in the rectal wall of its own side and left hanging from 1 cm. to 1.5 cm. into the rectal lumen.

This very general statement covers the fundamental idea of the operation, for the peritoneum has not been opened; but there are certain details of technic which seem debatable and I have sufficient assurance to wish to discuss them in the light of my one case.

The idea on which the operation of Maydl was based, namely, that there was a sphincteric action in the muscular layer of the bladder wall around the openings of the ureters, and that this required the conservation not only of this muscular fiber which surrounded each ureteral orifice, but also of those that surrounded both of them together, has to be abandoned; and with it may be given over the necessity for transplanting the whole of the trigone of the bladder into the colon or rectum, and making it practically a part of their wall. It is only necessary, therefore, to conserve such part of the bladder wall as surrounds each ureteral opening individually, and even this not with the idea that it contributes a sphincteric control of the opening, but merely with the idea that the wound of the mucous membrane is made at a reasonable distance from the mouth of the ureter and that the ureteral mucosa itself is left absolutely intact.

In the earlier operations which Peters himself did, he passed into each ureter a small catheter and fastened it there. Its presence in the ureter served as a guide which prevented the wounding of the ureter during the operation and afterward served as a means to conduct the urine out of the rectum during the first thirty-six to forty-eight hours following the operation. In one of Peters' patients an ascending infection occurred and the patient died, and Peters thought that the infection possibly was due to the fact that he had left the catheter in the ureter after the transplantation of the ureter into the rectum. This made me desire to avoid the use of the catheter at all, and as I began my operation I attempted to dissect out the ureter without the assistance of the catheter as a guide. I did this quite as much because of the infected state of the exposed vesical mucosa and the fear that in passing a catheter into the ureter I should carry up with it a certain amount of the infection. I found, however, that the dissection in the abnormal anatomic relations of the parts in these exstrophied cases was difficult, and I fortunately put into each ureter a small ureteral catheter to act as a guide, for had I not done so I should quite certainly have cut off the right ureter from ignorance of its anatomic location. In this one case of mine I found that the ureters approached the bladder from either side of the abdomen and passed transversely from the periphery of the exstrophied bladder toward their openings.

I believe that it will be wise for anyone who is undertaking this particular operation to put into each ureter before he dissects it out, a ureteral catheter. After the dissection has been completed, the catheter should be removed. It is no longer of service.

I departed from the Peters technic in that I did not retain the catheter in the ureter after the latter had been transplanted into the bladder. Instead of that I let the ureter begin to discharge urine into the rectum from the first and merely saw that its exit was arranged for by a tube in the anus. In the operation, as Peters has described it, dilatation of the sphincter ani was practiced so as to permit free exit for the urine. Of course, stretching the sphincter is a simple and common matter, and very rarely results in paralysis. It is quite possible, however, for a man to stretch the sphincter of a child more than he thinks he is doing, and as the end for which the stretching is done can be equally well attained by fastening a little rubber tube in the anus, it seems wise to me not to stretch this sphincter; and the plan has worked well, at least in this one case of mine. I can not well conceive how a man could be more mortified than to find, after he had made a successful transplantation of the ureters into the rectum, that he had no sphincter ani, and that all that he had accomplished by his operation had been to change the point of incontinence from the hypogastrium to the anal region.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Peters, Brit. Med. Jour. 22, June 1901.

In the operations which Peters has described, he packed the opening in the hypogastrium and let it gradually cicatrize. There seems to me to be a fairly good reason for this, for if there is any leakage from the rectum by the side of the ureter through the little opening which is made for the introduction of the ureter, the packing would act as a drain to the surface and so prevent a local and possibly general infection. Peters has not closed the openings in the rectal wall in any way. In my one operation I put in a single catgut stitch which brought the opening down to a size just sufficient to contain a ureter, and in the stitch I caught up a little of the periureteral areolar tissue which had been kept with the ureter to carry its blood vessels. This precluded the probability of any leakage from the rectum, and I should think it would be quite possible in some of these cases immediately to suture the recti together and so close, at once, the abdominal wall. In my own case I could not do this, for the child was very feeble and was already on the verge of shock when I had completed the transplantation, so that I followed Peters' plan and merely packed the abdominal wound. Later, after the general condition of the child had improved, it was a simple matter to go back and make a firm suture of this abdominal wound, it having in the meantime practically filled up with granulation tissue and nearly cicatrized over. In doing this I was surprised to find how easy it was, in this particular case, to draw the recti together, even though there was no os pubis on either side and no symphysis.

In the ablation of the vesical mucosa I was particularly careful to leave untouched the prostatic urethra which lay as an open saucer-shaped space in its usual location, and in it could be plainly seen the openings of the seminal ducts. From it extended, as a gutter, the open urethra. At a secondary operation I closed in the urethra from the meatus to the prostatic portion by the Duplay method, but I failed at first, to get union over the prostatic sinus. This has been accomplished, however, at later operations. This child, therefore, has a genital canal, normal up to his prostatic urethra, and from that point on to the meatus completed by an artificial closure of the urethra which should, in time, give him the opportunity of doing his duty toward the propagation of the species.

Reverting to the history of the convalescence of this child, it is only necessary to say that from the beginning his rectum acted perfectly well as a bladder, and would retain his urine from one to two hours. Later the period was increased to three or four hours, being only a little longer in the daytime than in the night. An examination of the urine which was voided, usually independently of any feces, though sometimes there were small fecal flecks in it, showed it to be acid, to have a cloud of albumin, and to have no sugar, but there were present triple phosphates, amorphous urates and bacteria. During the period of the child's residence in the hospital, he was given small doses of hexamethylenamin with the idea of preventing an ascending infection. Whether or not this was of use I can not say, but no ascending infection occurred up to the time of his leaving the hospital, and reports from his home state that he is in excellent health. At the time the child left the hospital, he was different from the ordinary child only in having a scar in the middle line of the lower part of his abdomen, representing a place which had formerly been occupied by the bladder. His penis was somewhat short, and a scar ran along its dorsum where satisfactory union of the integument had not occurred. His urethra extended from its proper opening on the tip of the glans backward to the prostatic portion. To urinate he had to sit down as if he was going to have a stool, and his urine came from his rectum. A finger in the rectum could feel, on either side, just above the internal sphincter, the little projections of the ureters which, each with its button of vesical mucosa, hung close to the rectal wall. It may not be an impossibility for him to go through life without any but the most intimate of friends knowing his differences from them.

Peters has reported four cases in the literature, and in March, 1905, he wrote me that he had operated in his fifth case. Katz of Braila, Roumania, reported, in 1903, nine operations transplanting the ureters individually into the rectum, and these include Peters' four cases. Of the other five operations, only one, that of Pye Smith, was by Peters' technic. The other operators, Pozzo, Capello and Colzi (two cases) transplanted the two ureters apparently by one opening on the anterior wall of the rectum; and each patient had a urinary fistula. Of these nine patients, only two have died of ascending infection: Peters' patient and Colzi's first patient, the former on the fourth day and the latter after seven months, Peters' fifth case case and my one bring the total up to eleven cases.

Peters' first operation was done in 1901, and the patient has now lived four years with his rectum doing duty as his bladder. It is not false reasoning, I maintain, to argue that as this boy has gone four years he may go eight years, and if he goes eight he may go sixteen; many a justifiable surgical procedure has a less secure foundation. The operative technic is simple and easily performed, and the operation should not prove a difficult task in the hands of anyone who has ordinary surgical ability. The condition for which it is proposed is one in the extreme, and I can not but think that a great deal has been given to us in this method. The Maydl operation had a mortality of about 33 per cent., the deaths being due to chloroform, hemorrhage, hydronephrosis, peritonitis and pyelitis. This particular operation has not been done often enough to warrant the calculation of percentages, but I do not see why the operation itself should entail any mortality, except, perhaps, in very weak and puny children. Septic peritonitis, which can not help being a fatal factor in the Maydl operation, whether the transplantation of the trigone be made into the rectum or into the colon, is here eliminated entirely. The only unavoidable danger is in the ascending infection, and there seems good reason to believe that this may be indefinitely postponed.

DISCUSSION.

Dr. E. A. Wells, Hartford, Conn., stated that he assisted Dr. Hartley[1] of New York in two operations similar to those of Dr. Sherman. The first patient was not operated on for exstrophy, but for chronic tuberculous cystitis; however, the principles of the operation are the same. Both patients were 18; one a girl, the other a boy. I say a boy, because his general non-development gave him that appearance. Dr. Hartley dissected out the trigone of the bladder in these cases, and freely opening the peritoneal cavity, inserted this into the sigmoid flexure of the great intestine. The abdominal wound was closed immediately. Both these patients did well. At last reports both could hold their urine a normal length of time and could void it at will and separately from the feces. The girl is married and has had a child. The boy has had several previous operations for his exstrophy, epispadias, etc., to no avail. Dr. Hartley did not use a ureteral catheter. If this is used, one should be very careful to avoid unnecessary traumatism about the ureteral orifice, as on the integrity of this bit of tissue depends in large measure the success of the operation. It is undoubtedly better to do the operation as Dr. Sherman suggests, namely, without opening the peritoneal cavity.

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[1] Med. News, Aug. 29, 1903.

Dr. L. L. McArthur, Chicago, said that some experiments have been made by Dr. Peterson of Ann Arbor and Dr. Martin of Chicago, with a method of implanting the ureter into the rectal wall so as to militate against the backward regurgitation. They have been able to accomplish this by making an oblique implantation of the ureter into the rectum projecting a portion well into the lumen of the rectum, as done by Dr. Sherman, but in addition burying the portion outside of the rectum by infolding the rectal wall around the urethral wall for an inch. By these means they claim that as fecal masses pass they tend to milk, rather than to overcrowd infection into the ureter, thus materially lessening the danger of an ascending pyelitis. They seem to have added something to the technic.

Dr. H. M. Sherman said that he thinks the operation referred to by Dr. Wells was the regular Maydl operation, and he does not think Dr. Hartley varied its technic. Dr. Dudley Tait of San Francisco and Dr. Sherman spent every Sunday morning for many Sundays trying to do the Maydl operation on dogs. They killed many dogs doing it, and every one died of peritonitis. This is the experience of everyone who has tried to transplant both ureters in dogs, and this difficulty impressed itself on them. The dog's bladder is entirely intraperitoneal, and it is impossible to open it without opening the peritoneum. Peter's operation consists in dissecting out each ureter individually with a button of vesical mucosa, and passing dressing forceps into the rectum and then through its wall with which to grasp the button of vesical mucosa. The transplantation of the ureters into the rectum is thus exceedingly simple and easy, and takes only a few minutes. It is all an extraperitoneal manipulation. The obliquity of the puncture in the rectal wall can not make much difference, for even if it was made oblique it would probably soon become direct. No account is taken of the fact that the feces pass over the opening of the ureter, as they seem to have done no harm. Ascending infection has not occurred in any patient except the one in whom Peters kept the catheter too long in the ureter. One point is important: one must avoid wounding the vesicle or ureteral mucosa. The difficult matter in Dr. Sherman's case was closing the urethra. It is a mistake to approach this operation with the expectation of finding this plastic work on the epispadias easy because of the fact that no urinary function is going on in the urethra. Compared with this the trasplantation of the ureter into the rectum is very simple.

DRUGS AND THE DIAZO REACTION.*

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It is not my purpose to enter here into a discussion of the extent of the value of the diazo reaction in clinical work. I take it for granted that physicians are all making use of the test for this reaction, and that like myself they have found it of much help, particularly in the diagnosis of typhoid fever.

During the past year, a statement from an Italian source appeared in the medical press of this country to the effect that certain drugs when ingested will cause the urine to react positively to the usual diazo test. An editorial in a leading medical journal seemed to take this statement for granted. This has induced me to institute some observations on this subject in the wards of the Davis Memorial Hospital, the details and results of which I herewith submit.

Observation 1.—A man aged 40, recovering from a compound fracture of the femur. All functions were normal; urine normal. To simulate the dietetic conditions of typhoid fever, he was placed, during the period of observation, on an exclusive milk diet preceded by an effective dose of castor oil. Three grains of thymol were administered every three hours for forty-eight hours, and the urine tested for the diazo reaction at the middle and at the end of this period. Result negative.

Observation 2.—A man, aged 19, recovering from a fracture of both femurs. General diet. All functions normal; urine normal. Five grains of salol were administered every four hours for a week and the urine was tested for the diazo reaction every twenty-four hours. Result negative.

Observation 3.—Patient of the last observation. All functions were normal; urine normal. After the salol was stopped, he was placed on guaiacol carbonate gr. 3 every three hours for forty-eight hours. Urine was tested for the diazo reaction at the end and at the middle of that period. Result negative.

Observation 4.—A woman, aged 39, recovering from an oöphorectomy. There was some intestinal fermentation, otherwise normal; urine normal. General diet. She was given 5 grains of sodium sulphocarbolate every three hours for three weeks. Urine was tested repeatedly for diazo reaction during that period. Result negative.

Observation 5.—A man, aged 55, recovering from a simple fracture of the femur. All functions were normal; urine normal. Exclusive milk diet. Five grains of salol were given every four hours for 48 hours. Urine was tested for the diazo reaction at the end and at the middle of that period. Result negative. The dose was then increased to 7 grains and continued for another 48 hours. At the end of this period the urine showed the characteristic dark color. Diazo reaction was absent.

Observation 6.—A woman, aged 39, recovering from an operation for hemorrhoids. All functions were normal; urine normal. Exclusive milk diet. Five grains of salol at intervals for forty-eight hours and the same drug in doses of 7 grains for 48 hours longer. Urine was tested for the diazo reaction at intervals of twenty-four hours. Result negative.

Observation 7.—A man, aged 35, recovering from a contusion of the thighs. All functions were normal; urine normal. General diet. Three grains of thymol were given every three hours for seventy-two hours. Urine was tested at the end of each twenty-four hours. Result negative.

It would seem, therefore, that while the observations are not large in number, as far as they go they most emphatically disprove the assertion that salol, thymol, sodium, sodium sulphocarbolate and guaiacol carbonate have the power of producing the diazo reaction in the urine of persons taking these drugs.

While working on this subject it occurred to me that it might prove of interest to the general practitioner to learn whether this reaction, when present in the urine, would continue to be present after the urine stood for some time with or without the addition of preservatives, as it so often happens that a physician is unable to test it for some time after it is voided. The following observations were made:

Observation 1.—Sixty c.c. of typhoid urine with a marked diazo reaction was allowed to stand in an open conical glass for 48 hours in a temperature of about 70 degrees F. Marked decomposition was present at the end of that time. After filtrating the urine the diazo reaction was found present and as intensely marked as when it was fresh.

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* Read before the West Virginia State Medical Association, 1905, at Wheeling, W. Va.

Observation 2.—To 60 c.c. of the same urine 2 c.c. of chloroform was added and allowed to stand for one week. The reaction was found unimpaired at the end of that period.

THE FAT OF TOP MILKS.

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AND
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PHILADELPHIA.

The use of top milks in infant feeding is rapidly increasing, and we have thought it advisable to examine the typical milks of the Philadelphia milk market for their percentages of fat, particularly the milk sold with a certificate of quality issued under the authorization of the Philadelphia Pediatric Society.

The certified milks of Philadelphia are, Dr. J. P. Crozer Griffith informs us, four in number, as follows: The Willow Brook Farm, the Haddon Farm, the Wawa Dairy, and the Bryn Clovis Farm. Since this information was received, we have learned that the sale of certified milk by the Bryn Clovis Farm has been discontinued.

We have examined, also, the Walker-Gordon guaranteed milk, in one pint and one quart bottles, and the milk regularly sold by four representative milk dealers of this city.

UPPER.	PINTS.				QUARTS.						AVERAGES.		
	Certified.			Guaranteed.	Certified.	Guaranteed.	Regular.						
	1	2	3	4	5	6	7	8	9	10	Pts.	Qts.	Winters' Standards.
½ oz.	27.60*	27.60*	23.00	17.60†	24.20	19.80	21.60	28.80	25.60	25.20	29.40	24.00	24.80
1 oz.	23.20	22.00	21.20	15.20	22.00	18.40	19.80	27.60	25.10	25.60	22.00	22.00	23.10
2 oz.	22.40	20.40	19.80	15.50	22.10	17.60	17.60	26.40	22.00	24.80	20.80	21.75	21.40
4 oz.	15.20	11.20	16.20	12.00	20.10	17.20	16.00	17.60	20.40	21.60	14.20	18.80	20.10
6 oz.	11.12	8.80	11.50	8.40	17.80	14.20	11.80	14.40	18.00	18.80	10.47	15.80	18.60
8 oz.	8.86	7.20	8.20	6.10	14.90	12.40	8.80	12.10	14.60	16.40	8.06	13.20	16.70
12 oz.	5.60	5.20	6.40	4.30	10.30	9.50	7.60	8.30	11.60	10.40	5.70	9.60	12.10
16 oz.	....	3.80	4.80	3.95	....	....	....	....	....	....	....	....	....
	4.78	4.10	4.80	3.95	8.10	6.30	6.80	6.10	6.20	8.40	4.40	7.00	9.40
32 oz.	....	....	....	....	4.60	3.50	3.75	3.70	4.20	5.35	....	....	....
	....	....	....	....	4.60	3.60	4.40	3.75	5.20	5.40	....	....	....

* The high percentages in these cases are probably due to the cylindrical shape of the bottle and the small inside diameter of the neck.

† The low percentage in this case is undoubtedly due to the shape of the bottle and probably also to the shorter time of creaming.

The certified milks, we are told, are from milkings made about 4 p. m., bottled on the farm, and delivered to the consumer the following morning. They are then about 16 hours old. The regular milks we examined were sent in bulk to the city, and bottled on the evening before delivery, and were about 16 hours old when examined.

Of the three certified milks of Philadelphia, two are sold only in one-pint bottles, and the third is sold in both one-pint and one-quart bottles. This fact is important, because the formulas for milk modifications with top milks are all based on the use of top milks taken from one-quart bottles, and not from one-pint bottles; and our experiments show radical differences in the fat percentages of top milks as taken from each. The sizes of the bottles were:

	Height. Inches.	Outside diameter at base. Inches.	Inside diameter of neck. Inches.
Pints (certified)	8⅛	2½	1¼
Pints (certified)	8⅛	2½	1¼
Pints (certified)	8	2¾	1½
Pints (guaranteed)	7	2⅞	1⅜
Quarts (certified)	9⅞	3¾	1⅜
Quarts (guaranteed)	8¾	3¾	1⅜
Quarts (regular)	8⅛	3¾	1¼
Quarts (regular)	9	3¾	1½
Quarts (regular)	9¾	3¾	1¼
Quarts (regular)	8¾	3½	1⅜

The differences in sizes will be noted. While small, in some instances, the size and shape of containers exert an important influence in creaming, or the production of the top milks, more so than the difference would apparently indicate. The height of the layer of cream was from 2½ to 4 inches. As a rule, the less high the creamy layer the denser and richer in fat.

While the amount of cream is governed by the amount of fat in the milk, the shape and size of the container and the length of time the milk has stood are factors of equal or greater importance.

Creaming, that is gravity-creaming, is the separation or raising of the fat globules to the surface of milk. It is mechanical in action. The more narrow and cylindrical the container the readier the creaming and the more dense the upper layer; the broader the container the less ready the creaming and the less dense the upper layer. This is shown by the differences in the creams obtained from an open pan and from a tall cylindrical bottle.

The fat globules are suspended in the milk. It is generally believed that each globule is surrounded by a thin nitrogenous membrane, protoplasmic in origin, which becomes ruptured on churning. This theory is by no means universally held to-day. Babcock and many others believe that milk is simply a natural emulsion.

The length of time a milk has stood before the top layers are removed is a most important factor. We found that a one-half ounce of top milk, 16 hours old, assayed 17.6 per cent. fat, and 24 hours later another half-ounce of top milk from the same bottle assayed 26.4 per cent. (It should have assayed much less, as the richer layer had previously been removed). Similarly, a one-ounce sample was increased from 15.2 per cent. to 16.5 per cent, another one-half ounce sample from 19.8 per cent. to 32.4 per cent., and another one-ounce sample from 18.4 per cent. to 26.4 per cent.

In our determinations of fat, the Leffmann and Beam method,[1] devised in 1889, was used. This method gives rapid and exceedingly accurate results.

In the table given, references are made to the standards of Winters,[2] on which many of the formulas in general use are based.

Examination of these results reveals a number of interesting facts. The percentage of fat in whole milk varies greatly. Leach[3] reports such variations to be 180 per cent.

1. The richer the upper layers of top milks in fat the poorer the lower layers.

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[1] Leffmann and Beam's "Food Analysis," 1905, p. 203.

[2] "Feeding in Early Infancy; Home Modification of Milk," by Joseph E. Winters, M.D., Professor of Diseases of Children, Cornell University Medical College, Medical Record, March 7, 1903, p. 366.

[3] Food Analysis, 1904, p. 91.

2. The differences in the fat percentages of top milks in pint bottles and quart bottles are marked, especially in the lower layers. The variations in extreme limits from the minimum to the maximum were from 60 to 170 per cent. The maximum variation of the whole milks examined was nearly 50 per cent.

3. The quart bottles of the Philadelphia milks follow the Winters' standards for the upper one-half ounce, one ounce, two ounce and four ounce very closely. Above that the differences are wide.

4. The pint bottles of certified milks follow Winters' standards nearly for the upper one ounce and two ounce, but differ radically in all the rest. The one-pint bottles of milk should never be used instead of one-quart bottles for obtaining top milks for infant feeding, as the differences in fat percentage are too great.

In the Winters formulas for the modification of milk for infants of less than 1 month of age, one-half ounce of top milk from each of two quart bottles of milk is used in 11.5 ounces of food, and the fat percentages run about from 1.75 to 2.5 of fat, instead of 2 per cent. (Winters standard); where the upper half-ounce from each of three one-quart bottles is used in 14 ounces of food, the fat percentages are from 2 per cent. to 3 per cent., instead of 2.5 per cent. (Winters standard); where the upper $2\frac{1}{4}$-ounce from one-quart bottle are used in $14\frac{1}{2}$ ounces of food, the fat percentages are practically 2.75 to 4 per cent., instead of 3 per cent. (Winters standard): where the upper six ounces from one-quart bottles are used in 28 ounces of food, the range is from 2.5 to 4 per cent., instead of 3.5 per cent. (Winters standard).

When larger quantities of top milk are used, say 8 ounces from a quart bottle in 32 ounces of food, the fat percentage will be from 2.2 to 4.1 per cent:; when 12 ounces are used in 32 ounces of food, the fat percentage will be from 2.85 to 4.35 per cent.; when 16 ounces are used in 32 ounces of food, the fat percentages will be from 3.05 to 4.2 per cent.

From this data it will be seen, at least so far as the Philadelphia milks are concerned, that the use of diluted top milks from one-quart bottles for the very young is not attended with such serious differences of fat percentage as the differences in the fat percentages of the undiluted top milks might imply or as to justify the disuse of top milks. At the same time the fact must be borne in mind that in cow's milk, probably, as in human milk, the ratio of fat to proteid is the highest at birth, and gradually decreases until the period of dentition is reached; for this reason the percentages of fat in cow's milk are most variable. It is well known that the most uniform milk is obtained by mixing the milk of a herd of cows rather than using the milk of a single cow. The same rule holds true with reference to the other constituents of milk, though not to the same extent.

The possibility of considerable variation in the percentages of sugar, fat and proteids in cow's milk, and consequently in top milks, should never be forgotten in the percentage feeding of infants. It is impossible to get absolutely exact percentages without analyzing each and every lot of milk used, and this is, of course, impracticable. As some one has wittily said: "The difficulty with those who seek scientifically exact percentage modifications of milk is that, with all their rules and tables, they fail to consider the party most deeply interested; that is, the cow." In obedience to physiologic laws, the cow makes her milk to suit the needs of her calf, and these needs are governed by the breed, age and individuality of the calf, and doubtless other factors.

Apparently the best results in top milk infant feeding are to be had by approximating percentages; that is, by having them reasonably accurate, and then adjusting, if necessary, the relative proportions of top milk and diluents to suit the individuality of the child.

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THE FREEZING POINTS OF BLOOD AND OF URINE IN PNEUMONIA.

WITH DESCRIPTION OF A NEW METHOD.*

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The object of this study[1] was to ascertain the freezing points of the blood and of the urine in pneumonia; to determine the relation of such findings to the course of the disease; and to note any possible bearing the same may give with regard to the prognosis of this disease. Before discussing the methods employed and the observations made in the cases studied, it will be well to mention briefly the work of other investigators who have used cryoscopy in their researches.

A BRIEF REVIEW OF CRYOSCOPY AS USED IN MEDICINE.

As early as 1871, De Coppet[2] showed that the freezing point of water is lowered a definite amount by the addition of a molecule or proportionate quantity by weight of any soluble substance. Little was done, however, following this finding until Raoult[3] studied the freezing points of various solutions and derived his important laws. Van t'Hoff[4] later proved that equal volumes of isotonic solutions contained the same number of molecules or fragments of molecules, and have the same freezing point. Then D'Arrhenius[5] modified these laws to comply with his own laws of solutions. No one, however, regarded cryoscopy from a medical standpoint until Koranyi,[6] regarded by all as the father of cryoscopy, published the wonderful results of his studies on the osmotic pressure of the various fluids of the human body. Since the appearance of his articles, many investigators have worked on the subject, adding little by little to his data. Roth[7] compared the electrical conductivity with the freezing point of urine, agreeing with the findings of Koranyi.[6] Lindemann[8] studied the concentration of the urine and of the blood in renal diseases, and their relation to uremia. Claude and Balthazard[9] followed the above with experiments on the freezing point of urine in various diseases. Senator,[10] Kummel,[11] and Hamburger[12] verified the works of previous investigators. Waldvogel[13] studied the freezing points of the blood and of the urine in typhoid fever, but his results were found inconstant by Rumpel.[14] According to Ogston[15] the findings in hepatic diseases are similar to those found by Koranyi in disturbances of the kidneys. Landau[16] compared the freezing points of venous and arterial bloods, finding that stagnant and venous blood have a freezing point one or two hundredths of a degree centigrade lower than arterial blood. Sollmann[17] wrote extensively on the concentration of the urine as an aid to diagnosis. Tinker[18] studied cryoscopy as an index to renal insufficiency in surgical diseases of the kidney. The latest important use of the cryoscope was brought out by Lobenstein[19] in his work on the molecular concentration of blood and of urine in pregnancy, puerperium and eclampsia.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-Sixth Annual Session, July, 1905.

[1] A preliminary report on this study was read before the Chicago Pathological Society, April 10, 1905.

[2] De Coppet: Annales de Clinic. Phys., 1871-72, vols. xxiii, xxiv and xxvi.

[3] Raoult: Comptes Rendus de l'Acad. des Sciences, Nov. 27, 1882.

[4] Van t'Hoff: Memoires de l'Academie rotale des sciences de Due de Bandet, 21, No. 17, Stockholm, 1886.

[5] D'Arrhenius: Zeitschr. f. Physikal. Chemie, vol. i, 1887.

[6] Alex. v. Koranyi: Zeitschr. f. klin. Medicin, 1897, vol. xxxiii, pp. 1-54; 1898, vol. xxxiv, pp. 1-52.

[7] Roth: Centralblatt f. Physiologie, 1897, p. 271.

[8] Lindermann: Deutsch. Arch. f. Klin. Med., 1899, vol. lxv, p. 1.

[9] Claude and Balthazard: Jour. de Physiol. et Pathol., vol. ii, 1900, pp. 766, 804, 831, 963. Presse Méd., Feb. 17, 1900, No. 14, p. 85.

[10] Senator: Deutsch. med. Wochenschrift, 1900, vol. xxvi, p. 48.

[12] Hamburger: Centralb. f. Innere Med., vol. xxi, 1900, p. 297.

[13] Waldvogel: Deutsch. Med. Wochenschrift, 1900, p. 685, 735. Archiv f. Exper. Path. u. Pharmakologie, vol. xlvi, 1901, p. 41.

PREVIOUS CRYOSCOPIC FINDINGS IN PNEUMONIA.

Contrasted with the large amount of work done with the cryoscope on renal diseases, very little has been attempted in pneumonia. Koranyi[6] made the most important contributions. His results are briefly as will follow. He determined that the freezing point of the blood is higher, i. e., above 0.56 degrees C. in anemias and those fevers which do not interfere with the respiration. Chlorosis, tuberculosis, and the various cachexias are included under this head. Further, the freezing point of the blood is lower than 0.56 degrees C. in all diseases which are accompanied by deficient respiration or kidney function, or both. The essential difference between the quality of the blood and of the urine in cases with lessened aëration and that in renal insufficiency, is that in the former the low freezing points are raised by the administration of acids. Where both kidney and lung functions are deficient, as in heart cases, the great concentration of the blood can be decreased by the exhibition of acids, but can not be brought to normal. The freezing point of the blood may be essential in diagnosis between typhoid and pneumonia, for, if the freezing point is lower than 0.56 degrees C., the case is very likely pneumonia. On the other hand, should it be higher than 0.56 degrees C., typhoid fever is more probable. In pneumonia the blood change can be corrected by administration of acids. In regard to the urine, the freezing point in anemias is above 1.4 degrees C. With recovery the freezing point is lower. In increased kidney circulation the increase in salt excretion is greater than that of other molecules; therefore, the quotient in such cases of the freezing point of urine divided by NaCl per cent. secreted is low. In slowed circulation the salt secretion is decreased more than the other molecules. Hence the freezing point of urine divided by NaCl per cent. rises in value. If, in fevers, the freezing point of urine divided by NaCl per cent. is lower than 1.7, malaria is indicated. If this quotient is greater than 1.7, malaria is contraindicated.

Lindemann[8] found that the concentration of the blood increases if the excessive substances are not eliminated from the blood, even though there is no absorption by the tissues of the body. Sollmann[17] notes that the height of a fever has no special influence on the urine, and that the same results are found when a healthy person is on a milk diet. He found that in heart diseases, pneumonia, ascites, etc., with cardiac weakening, the freezing point of the urine is lowered. Claude and Balthazard[6] found that the volume of urine excreted in pneumonia is decreased during the disease up to the crisis, when it rapidly increases. The freezing point, however, is markedly lower, due to the increased concentration of the urine. The lowering is due, however, to the great increase in elaborated molecules excreted, and not to the chlorids, the latter having diminished. Three days after the defervescence of the fever, the reverse conditions are present, that is, the amount of urine is increased, the freezing point becomes normal, while the chlorid secretion increases at the expense of the non-chlorid molecules.

METHODS EMPLOYED.

A. *To Determine the Freezing Point of Urine.*—This is done usually by a Beckmann apparatus or one of its modifications. A thermometer, capable of being read to 0.01 degrees C. is supported by a rubber stopper in a large test tube, A, and should be at least 5 millimeters distant from the walls of the test tube. The thermometer should be graduated from 1 degree centigrade above, to 4 or 5 degrees below the freezing point. A stirring rod, preferably one of platinum, should pass through the cork holding the thermometer, and in a spiral around the latter. This test tube should be fitted by means of a rubber stopper into a larger test tube, B, which in turn is supported in a jar containing the freezing mixture, the temperature of which should be at least —5 degrees C. An air space is thus left between the freezing mixture and the solution to be frozen, insuring gradual cooling. The thermometer should be tested daily in a 1 per cent. solution of sodium chlorid, the freezing point of which is known.

To determine the freezing point of a solution, 10 cubic centimeters of it are placed into test tube A, and the apparatus set up as outlined above. The fluid to be tested should always be cooled down near the freezing point before beginning the experiment, and constant stirring is necessary. The mercury sinks at first considerably below the freezing point, and then, as freezing occurs, heat is given off and the mercury rises again to the solidifying temperature, which result is tabulated when the column of mercury has remained stationary some thirty seconds. It is safest to remove tube A after the first result, allowing the ice of the tested liquid to melt, and then retest. These two results should agree to 0.004 degrees C., although .02 degrees C. is sufficiently accurate, ordinarily.

The method described above is simple, easy, and rapid. The determination does not take more than ten minutes after the apparatus has been set up and standardized. The necessity of testing the thermometer daily is rather annoying. More simple instruments with fixed freezing points have been suggested for this purpose. These are not quite as delicate, but are sufficiently accurate for clinical work on urine.

When the urine contains considerable urates these are thrown out of solution by the cooling, so that the observed concentration is lessened by the amount of these precipitated salts. This quantity is, however, so small that it may be safely neglected; in fact, it is not easily possible to make any correction. It would not do to dilute the urine, since this alters the dissociation.

B. *To Determine the Freezing Point of Blood.*—Having decided that it would be impracticable to get 10 cubic centimeters of blood daily from pneumonia patients, the method of Koeppe[20] for determining the osmotic pressure of the blood by means of the hematocrit was used as modified by Richard Sommer[21] to calculate the freezing point of the blood. His explanation of the method follows:

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[14] Rumpel: Munchener med. Wochenschrift, vol. xlviii, 1901, p. 223.

[15] Ogston: Lancet. 1901, vol. ii. p. 1253.

[11] Kummel: Munchener med. Wochenschrift, Oct. 30, 1900, p. 1525.

[16] Landau: Deut. Archiv. f. klin. Med., vol. lxxviii, Nos. 5 and 6, 1903, p. 458.

[17] Sollmann: Amer. Medicine, vol. iv. No. 17. 1902, p. 656.

[18] Tinker: Johns Hopkins Hosp. Bulletin, vol. xiv, No. 147, 1903, p. 162.

[19] Lobenstein: Am. Med., vol. viii, No. 16, p. 685.

General Principles: The determination is made according to the laws of Van t'Hoff.

(*a*) The osmotic pressure of the blood corpuscles is the same as that of the plasma, because a plasmolysis or a plasmoptysis takes place.

(*b*) If the blood corpuscles are brought into solutions of different osmotic pressures they change their volume in a definite manner until the osmotic pressure of the blood corpuscles is the same as the solution in which they are placed.

(*c*) The osmotic pressure is proportional to the concentration of the solution.

(*d*) The lowering of the freezing point of a solution is proportional to the concentration of the solution (law of Blagden).

(*e*) The lowering of the freezing point of a solution is proportional to the osmotic pressure of the same (law of Van t'Hoff).

(*f*) A solution which holds in solution a grammolecule to the liter has an osmotic pressure of twenty-two and thirty-seven hundredths approximately (Van t'Hoff).

Apparatus: (1) Graduated hematocrit tubes which differ from the ordinary in that the tube is enlarged proximally into a little bulb. The tube is graduated into hundredths. The readings are taken with a hand lens, with which one can with accuracy estimate one-quarter of one of the graduations. The lumen of the tube is so small that one drop of blood is enough to fill this tube several times.

(2) Electric centrifuge, which must revolve very evenly and rapidly.

(3) An instrument to get blood from, preferably, the ear. The regular precautions are taken as in all blood work.

(4) A number of clean watch glasses to receive standard solutions. Care must be taken not to allow solutions to come in contact with other soluble substances.

(5) A hand lens to read the graduation on the tube.

(6) A Beckmann freezing apparatus for determining the freezing points of the standard solutions.

(7) Sterile cedar oil is used in order to prevent the blood from being mixed with foreign substances which may hasten coagulation of the blood.

(8) Standard solutions of certain chemicals which do not act on the blood corpuscles when in solution. The experimenter decides the one he shall use. The substances that are employed commonly are cane sugar, sodium chlorid, potassium bichromate and potassium oxalate. Eijkmann uses sodium chlorid; Koeppe, cane sugar, and Sommers, potassium bichromate. The cane sugar method is the best for the accurate worker, but the solutions are hard to keep. It is understood that the materials must be chemically pure. Each one of these solutions has advantages and disadvantages. For potassium bichromate it can be said that it does not coagulate the blood nor destroy the corpuscles. Since the coagulation of the blood is harmful to the experiment, it is best for the beginner to use this salt. The solutions last long when sealed. A weak solution containing twenty grams to the liter and a strong solution with fifty grams to the liter are used. The freezing point of each is obtained and marked on the flask.

Procedure (according to Koeppe):[20] In a clean hematocrit tube a little cedar oil and immediately after a little blood are aspirated. The tube is immediately closed without reading the graduation and centrifuged. When the centrifuging is completed, there will be three definite lines to read off, namely: Blood corpuscles as the lowest part, plasma as a middle part, and the cedar oil on top. The quantity of blood taken, then, in the first place will be the sum of blood cells and plasma. Tubes used in this manner are named, according to Koeppe, "oil pipettes." Such a method is employed when one does not wish to mix the blood with the other solutions. When one dilutes the blood with some of the above-mentioned diluents, the unoiled, clean, dry tubes are used, and the operation is as follows: Blood is drawn into one of the tubes, with the condition that it is not to be drawn above the hundredth mark; the tip of the tube is then wiped, and the quantity read off accurately. Then the point of the tube is immersed in one of the standard solutions in the watch glasses, and a quantity of the latter is very slowly sucked up. There should be six or ten times as much of the solution as there is blood. The more of the diluting fluid employed the more accurate the results will be. Then the tube with the mixture is well shaken and centrifuged until two or three successive readings correspond. Ordinarily it takes about three minutes to centrifuge sufficiently. The readings are then placed into a table similar to the following, and the deductions found later:

	n=volume of blood taken	m=volume of blood corpus.	$\frac{100\,m}{n}$ = per cent. blood corpus.
1. "Oil Pipetta."	....	....	....
2. Blood diluted with weak solution ...	....	....	....
3. Blood diluted with strong solution..	....	....	....

To have a check on one's results, two or three such tests should be made in each case. (Koeppe filled eight or nine of these tubes in ten minutes, ready for the centrifuge.) Then all the tubes are centrifuged at one time, and the various tests on the same case should be alike. The volume per cent. is then figured out from the results according to the formula, 100 m divided by n, in which m is the volume of blood corpuscles and n the volume of the blood taken.

Calculation of the Lowering of the Freezing Point from These Results (Sommer): Following are tabulated results, taken, as an example, when potassium bichromate solutions, with a freezing point of —0.335° C. for the weak and —0.81° C. for the strong solutions are used:

	n.	m.	$\frac{100\,m}{n}$
1	52	26	50 per cent.
2	69	39	56.52 per cent.
3	66	27	40.91 per cent.

In the mixture with the weak fluid, the blood corpuscle per cent. is 56.52, while with a strong solution it is 40.9 per cent. The dissimilarity between the freezing points of the two solutions is .455 C., and this corresponds to a difference of 15.61 per cent. in the volumes of blood corpuscles in Experiments 2 and 3. Therefore, 1 per cent. of this variation is equivalent to 0.029148° C. of the diversity of the freezing points of the two diluting fluids. Since the difference between the volume of the blood corpuscles with the weak solution and the undiluted blood is 6.52 per cent., the variation in the freezing points between these samples of blood will be 6.52 times —0.029148° C. = —0.190° C. We must add this difference to the solidifying point of the weak solution, i e., we must add —0.190 to 0.355 = 0.545° C., which is, therefore, the freezing point of the undiluted blood. In order to bring these results into a formula, we will use the following symbols commonly employed in cryoscopy:

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[20] Koeppe: Phys. Chemie. in der Medizin, Wien, 1900.

[21] Sommer, R.: Written communications.

[22] Beckman: Zeitschr. f. Phys. Chemie, vol. viii, p. 323.

d = Freezing point of the blood.
d_1 = Lowering of the freezing point of the weak solution.
d_2 = Lowering of the freezing point of the strong solution.
v = Per cent. of volume of the blood corpuscles in undiluted tube.
v_1 = Per cent. volume of the blood corpuscles when the blood is mixed with the weak solution.
v_2 = Per cent. of volume when it is diluted with the strong solution.

$$\text{Therefore } d = d_1 + \frac{(d_2 - d_1)\ (v_1 - v)}{(v_1 - v_2)}$$

In the illustration above:
d_1 = 0.355° C.
d_2 = 0.81° C.
v^2 = 50 per cent.
v_1 = 56.52 per cent.
v_2 = 40.91 per cent., and
d = —0.545° C.

Precautions: 1. In using the Beckmann[22] apparatus for urine, the usual well-known precautions should be observed.

2. The ordinary precautions of asepsis used in all blood examinations should be adhered to.

3. In drawing up the blood into the tube, care should be taken not to permit it to pass beyond the hundredth mark, for accurate reading would then be impossible. If this accident occurs, the tube must be laid aside and another taken.

4. The diluting solution should be drawn in immediately after the blood and thoroughly shaken before placing the same into the hematocrit arm.

5. At least five minutes must elapse between mixing and sedimenting, to allow for full osmosis. Ten minutes is safe at the other extreme.

6. Since it is impossible to obtain accurately the same amount of blood each time, the per cent. volume should be figured in decimals to four places.

7. Before using the tubes they should be thoroughly cleansed, rinsed with water, then with potassium hydrate, and this followed successively by water, alcohol and ether and finally dried over a flame. In order to dissolve the blood corpuscles after centrifuging, a weak acetic acid solution may be used, followed by the above routine.

8. The freezing points of the standard solutions must be frequently taken to insure uniform results.

9. The point of the hematocrit tubes should be wiped dry before clamping, and the rubber washers should fit tightly to the ends of the tubes when clamped.

OBSERVATIONS ON TWENTY-FOUR CASES OF PNEUMONIA.

Before beginning the determination of the freezing points of the blood and of the urine of pneumonic patients, experiments were made on ten normal males between the ages of 20 and 40. These results were looked on as controls.

	Freezing point of blood.	Urine.
Case 1....	—.563 degrees C.	—1.53 degrees C.
Case 2....	—.566 degrees C.	—1.88 degrees C.
Case 3....	—.533 degrees C.	—1.77 degrees C.
Case 4....	—.544 degrees C.	—2.34 degrees C.
Case 5....	—.554 degrees C.	—2.16 degrees C.
Case 6....	—.558 degrees C.	—1.93 degrees C.
Case 7....	—.569 degrees C.	—2.06 degrees C.
Case 8....	—.55 degrees C.	—1.94 degrees C.
Case 9....	...557 degrees C.	—1.73 degrees C.
Case 10....	—.554 degrees C.	—1.16 degrees C.

(Twenty-four-hour specimens of urine were obtained throughout these experiments.)

From this it will be seen that the freezing point of the blood in these cases ranged from —0.533° C. to —0.569° C., average —0.552° C., while that of the urine ranged from —1.16° C to —2.34° C., average —1.8° C.

In comparing the results recorded in using the hematocrit method described above with those found when using the method employing the Beckmann apparatus, it was found that the freezing point of the blood, according to the latter method, was slightly higher than that obtained by the former. The difference is, no doubt, due to the accuracy of the former in carrying out the decimals to five places in all cases.

Appended are the tabulated results of twenty-four cases of pneumonia, taken under observation. These patients were watched daily. The freezing point of the blood and of the urine, the quantity of urine, the specific gravity of the urine and the amount of urea were recorded. Note was made of the casts and albumin when present.

CASE 1.— S. S., ward 22; No. 74. Male, 32 years old. Right upper and middle lobes consolidated. Milk diet; stimulating treatment only. The course of the disease was moderate.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.60		Delirious.			102.6	102	32
2....	—.5976		Delirious			102.4	98	28
3....	—.585	—2.73	850	1023	3.1	100	100	28
4....	—.594	—2.64	890	1022	3	100	108	24
5....	—.602	—2.67	830	1023	2.9	102	100	28
7....	—.594	—2.57	1020	1021	2.9	100.2	92	28
8....	—.5617	—2.15	1200	1019	2.3	100.4	100	28
9....	—.563	—1.93	1130	1019	2.3	100.4	98	28
12....	—.547	—1.80	1400	1016	1.9	99	84	20

This patient was seen about five days after admission to the hospital. No chill had been noted. The course of the disease was moderate without complication. The temperature receded by lysis. The freezing point of the blood was lower than normal throughout the course of the disease. The freezing point of the blood rose as the temperature fell, not reaching normal until several days after the temperature. The urine followed the same course.

CASE 2.—Y. F., Ward 22, No. 72. Male, 35 years old. Right lower and middle lobes involved. Milk diet; stimulating treatment. The course of the disease was moderate.

Day.	freezing. Blood	freezing. Urine	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.574	....	....	....	..	103	108	36
2....	—.60	—2.36	1020	1019	2.8	103	120	40
3....	—.5897	—2.58	970	1021	2.9	102.6	120	44
4....	—.5976	—2.96	860	1023	3.1	101.8	126	48
5....	—.593	—.287	1300	1021	2.9	99	96	48
7....	—.588	—2.59	1250	1019	2.7	100	88	28
8....	—.563	—2.03	1230	1018	2.4	99.6	92	32
9....	—.557	—1.79	1200	1018	2.2	...	Normal.	..
10....	—.553	—1.77	1330	1019	2	...	Normal.	..
14....	—.559	—1.59	1450	1017	1.7	...	Normal.	..

This patient was seen the second day after admission, about five days after the chill. His temperature was not very high. The freezing point of the blood and of the urine were moderately lower throughout the disease, rising slightly above the normal after the crisis, then receding to normal.

CASE 3.—K. H., Ward 24, No. 3. Male, 32 years old. Upper right lobe involved. Milk diet; stimulating treatment. Moderately severe course.

Day.	Blood Freezing.	Urine Freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.627		Delirious.			102.8	110	34
2....	—.603		Delirious.			103	104	32
3....	—.594		Delirious.			102.8	120	34
4....	—.602		Delirious.			97.9	96	30
5....	—.583		Delirious			98.8	102	28
7....	—.577	—2.98	1050	1022	2.7	98.4	92	24
8....	—.547	—1.51	1230	1018	2	99	88	24
9....	—.548	—1.63	1420	1019	2	Normal.	Normal.	..

This patient was seen the second day after admission. The freezing point of the blood was considerably lower. The patient was delirious throughout until after the crisis, after which the freezing point of the blood rose to normal within a few days, as did also that of the urine. No specimen of urine could be obtained until after the crisis, but when obtained, the freezing point was considerably lower than it was after convalescence.

Case 4.—W. H., Ward 22, No. 34. Male, 27 years old. Right upper and middle lobes consolidated. Milk diet; stimulating treatment. Mild course.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.564	....	....	....	..	103	112	40
2....	—.587	—2.21	850	1020	2.6	100	100	44
3....	—.5628	—1.98	920	1019	2.5	102	100	36
4....	—.574	—2.37	890	1021	2.9	97.2	90	36
5....	—.585	—2.09	980	1019	2.6	98.6	84	28
7....	—.542	—1.76	1150	1018	2.3	98.6	72	24
8....	—.54	—1.71	1080	1018	2.1	Normal.	...	20
9....	—.542	—1.82	1200	1017	2.3	Normal.	...	..
10....	—.541	—1.76	1490	1018	2.2	Normal.	...	..
13....	—.557	....	....	....	..	Normal.	...	..

A very mild case, seen five days after he had the chill. The freezing point of the blood was only slightly lower throughout, coming up to normal, as in the preceding cases.

Case 5.—F. F., Ward 24, No. 40. Male, 24 years old. No definite area of consolidation. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.585	....	....	....	..	103	104	34
2....	—.57	—1.95	1020	1019	2.8	102	100	32
3....	—.563	—2.49	900	1021	2.9	100	90	30
4....	—.558	—2.37	920	1020	2.7	98.2	96	28
5....	—.552	—2.01	1030	1018	2.4	98.4	94	24
7....	—.533	—1.47	1270	1018	2	98.6	82	22
8....	—.536	—1.63	1150	1019	2	Normal.	Normal.	..
9....	—.541	—1.73	1090	1018	2.2	Normal.	Normal.	..
12....	—.55	—1.75	1200	1017	2	Normal.	Normal.	..

This patient was seen the day after admission. The course of the disease was typical, although no definite area of consolidation was found. The temperature fell by crisis the fourth day after coming under observation. The freezing points of the blood and of the urine were lower, but not markedly so.

Case 6.—C. J., Ward 10, No. 8. Male, 37 years old. Upper and middle lobes involved. Light diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.594	....	....	....	..	103.2	104	52
2....	—.584	—3.06	750	1025	3.2	101.2	112	36
3....	—.582	—2.93	890	1023	2.9	100.6	112	32
4....	—.585	—2.87	850	1023	2.9	98.6	104	28
5....	—.582	—2.75	970	1020	2.5	98.4	98	26
6....	—.562	—2.24	1250	1017	2.4	99.6	92	30
8....	—.558	—1.79	1170	1018	2.2	99	96	26
9....	—.557	—1.93	1200	1018	2.3	Normal.	..	Normal
13....	—.562	....	....	....	..	Normal.	..	Normal

This patient had a high temperature, but no definite areas of consolidation were noted. The freezing points of the blood and of the urine were somewhat lower than normal, following the same course as in the foregoing cases.

Case 7.—W. A., Ward 24. No. 73. Male, 29 years old. Both lower lobes consolidated. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.589	....	....	....	..	102.4	100	30
2....	—.596		Delirious.			104	98	40
4....	—.611		Delirious.			103.2	120	42
5....	—.609		Delirious.			103.4	114	36
6....	—.617	—3.25	1100	1015	2.9	102	116	36
7....	—.591	—3.19	1200	1015	3	100	110	28
8....	—.593	—3.18	1250	1016	3	98	84	28
9....	—.559	—2.49	1560	1012	2.4	98.8	94	26
11....	—.541	—1.86	1400	1014	2	Normal.	Normal.	..
15....	—.563	....	....	....	..	Normal.	Normal.	..

(Casts and albumin.)

A typical case of pneumonia, with extensive involvement of both lower lobes of the lungs. The patient was seen early in the course of the disease. The freezing point of the blood gradually fell to reach its lowest point before the crisis, when, as the temperature descended, the freezing point of the blood rose to normal.

Case 8.—K. G., Ward 24, No. 1. Male, 27 years old. No definite area of consolidation. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.573	....	....	....	..	102.6	104	32
2....	—.599	....	....	....	..	102.4	102	30
3....	—.593	—3.06	1020	1023	2.8	101.6	94	30
4....	—.594	—3.07	890	1023	2.9	102.4	110	32
6....	—.589	—3.01	850	1024	3	98	94	24
7....	—.561	—3.00	1000	1019	2.7	98.6	88	22
8....	—.555	—2.37	1350	1015	2	98.8	84	20
9....	—.548	—1.99	1700	1016	2	98.4	80	22
10....	—.551	—1.75	1500	1015	1.8	98.6	82	20
11....	—.56	—1.87	1400	1016	2	Normal.	Normal.	..

This case, although not so severe as Case 7, followed the same course and gave the same results.

Case 9.—N. A., Ward 24, No. 4. Male, aged 19. Right upper lobe extensively involved. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.587	....	....	....	..	104	116	30
2....	—.589		Delirious.			103.2	110	38
3....	—.591		Delirious.			104.4	124	32
5....	—.594		Delirious.			99.2	80	30
6....	—.558	—2.08	700	1021	2.7	99	60	26
7....	—.562	—1.87	900	1020	2.4	99.2	66	28
8....	—.554	—1.83	1050	1018	2.2	Normal.	Normal.	..
9....	—.543	—1.92	1020	1019	2.3	Normal.	Normal.	..
10....	—.541	—2.01	1160	1021	2.5	Normal.	Normal.	..
13....	—.552	....	....	....	..	Normal.	Normal.	..

A very severe case of short duration. The freezing point of the blood and of the urine followed the same course as in the other cases.

Case 10.—L. J., Ward 24, No. 38. Male, 18 years old. No definite area of consolidation. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.602	....	....	....	..	104.8	112	30
2....	—.569	—1.93	950	1022	2.6	104	120	28
3....	—.5827	—2.23	850	1023	2.7	104.2	120	40
5....	—.538	—1.23	1200	1017	2	99	94	30
6....	—.549	..1.39	1100	1017	2	99.2	80	28
7....	—.543	—1.55	1060	1018	2	98.9	80	24
8....	—.547	—1.69	1080	1018	2	Normal.	Normal.	..
9....	—.546	—1.71	1440	1018	2.3	Normal.	Normal.	..
10....	—.549	—1.67	2100	1017	2	Normal.	Normal.	..
11....	—.558	....	....	....	..	Normal.	Normal.	..

This patient had a high temperature, but no definite areas of consolidation were noted. The freezing points of the blood and of the urine were somewhat lower than normal, following the same course as in former instances.

Case 11.—E. J., Ward 24, No. 79. Male, 47 years old. Lower left lobe consolidated; also had pleurisy on left side.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.611	....	....	....	..	104	132	36
2....	—.607		Delirious.			102.4	115	28
3....	—.623	....	....	....	..	102.8	106	28
4....	—.613	—3.59	870	1024	3.1	98.8	82	22
5....	—.617	—3.59	720	1028	3.4	99.4	90	20
6....	—.587	—3.19	820	1018	3.1	98.6	90	20
7....	—.549	—2.05	1250	1014	2.6	98 6	80	24
11....	—.555	—1.96	1400	1015	2	Normal.	Normal.	..

A very severe case; high temperature and rapid respiration. The freezing point of the blood was considerably lower, as was also that of the urine. The same general course was present, however, as in preceding cases, relative to the lowering of the freezing points of the blood and of the urine.

Case 12.—M. A., Ward 22, No. 38. Male, 30 years old. No definite area of consolidation. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.593	....	....	....	..	103.4	120	48
2....	—.597	—3.11	680	1029	2.9	98	96	32
3....	—.591	—3.15	820	1026	2.8	98	86	30
4....	—.576	—2.97	1230	1021	2.4	98.8	70	22
5....	—.535	—1.75	1400	1017	2	98.8	72	22
6....	—.545	....	....	....	..	Normal.	Normal.	..
9....	—.546	....	....	....	..	Normal.	Normal.	..

This patient came into the hospital late in the course of the disease, the crisis occurring on the same day. The same findings obtained as in the other cases.

Case 13.—K. J., Ward 22, No. 28. Male, 46 years old. Right lower lobe consolidated. Stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp
1....	—.591	....	....	....	..	102.4	112	40
2....	—.587	—2.805	820	1021	2.5	101.8	104	36
3....	—.593	—2.96	760	1022	2.8	97.6	100	32
4....	—.591	—3.05	930	1026	2.9	99.6	88	32
5....	—.555	—3.02	1230	1021	2.3	99.4	98	28
7....	—.541	—2.47	1450	1015	2	99	100	30
10....	—.543	....	....	....	..	98.8	96	22

(Anemic and weak.)

This patient was seen the day after admission to the hospital. The freezing points of the blood and of the urine were low. It was noted that immediately after the crisis both were lower than during the disease.

Case 14.—D. J., Ward 24, No. 39. Male, 42 years old. Right lower and middle lobes. Stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.599	....	....	....	..	103.2	100	36
2....	—6.05		Delirious.			104.4	110	44
3....	5.94	—2.14	950	1021	2.7	102.4	90	34
4....	—.583	—2.10	1020	1021	2.8	101	98	30
5....	—.556	—1.78	1300	1017	2.4	99.4	90	26
6....	—.55	—1.60	1500	1015	2	98.6	86	24
7....	—.556	—1.70	1650	1014	2	98.4	80	26
12....	—.557	....	....	....	..	...	...	..

A severe case, the patient being delirious during the first two or three days. The freezing point of the blood was low. The patient made an uneventful recovery. Freezing points of the blood and urine came to normal, as in preceding cases.

Case 15.—D. M., Ward 24, No. 32. Male, 33 years old. Right lower lobe involved; continuous salt irrigation. Stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.583	....	....	....	..	100.2	100	36
2....	—.587	....	....	....	..	101.8	100	28
4....	—.585	—2.25	920	1015	2.6	99.8	84	26
5....	—.571	—2.15	1020	1017	2.7	99.6	88	30
6....	—.555	—1.85	1300	1014	2.2	99.2	76	24
10....	—.560	—1.80	1700	1015	2	98.6	78	22

A mild case. The same course and findings existed as in former cases. This patient also made an uneventful recovery.

Case 16.—H. C. H., Ward 22, No. 68. Male, 42 years old. Right upper lobe consolidated. Evidences of tuberculosis. Milk diet; stimulating treatment. Anemic.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.603	....	...	....	..	102	120	34
2....	—.604	—2.47	900	1018	2.8	103.2	100	36
3....	—.618	—2.13	950	1019	3.1	100.2	98	36
4....	—.59	—2.39	600	1020	3.2	99.8	90	36
5....	—.60	—2.53	250	1019	3	100	84	28
7....	—.554	—2.11	870	1018	2.8	100	88	28
8....	—.532	—2.02	750	1019	2.6	100.5	90	28
9....	—.533	—1.97	830	1020	2.5	100.2	92	28
12....	—.535	....	...	....	..	99.6	86	26

Another typical case of pneumonia. The freezing point of the blood was low, as was that of the urine, following the same course as the preceding, but it is to be noted that evidences of tuberculosis were found, and therefore the higher freezing point of the blood during convalescence (Koranyi[6]).

Case 17.—V. B., Ward 24, No. 36. Male, 27 years old. Right lower lobe consolidated. Evidences of tuberculosis. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.589	—2.93	750	1023	2.7	102	88	32
3....	—.593	—2.97	720	1024	2.8	102.6	102	28
4....	—.591	—2.87	800	1023	2.8	100	96	28
5....	—.616	—3.03	690	1025	2.9	100.6	95	24
6....	—.607	—3.14	870	1029	3.2	102	96	28
7....	—.608	—3.02	1020	1021	3.1	100	80	26
8....	—.572	—2.61	970	1019	3	99	97	24
10....	—.53	—2.47	1200	1015	2.6	99.2	88	28
13....	—.534	....	....	....	..	99.6	92	26

This patient was seen a day after admission with a typical pneumonia history. The freezing points of the blood and of the urine were low. They gradually descended until the temperature began to fall, when they gradually rose to normal. It will again be noted that this patient had evidences of tuberculosis, which will account for the rather high freezing point of the blood after crisis and during convalescence.

Case 18.—B. Z. V., Ward 10, No. 22. Male, 45 years old. Right lower lobe consolidated. Chill several days before admission.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.593	....	....	....	..	104.2	124	30
2....	—.619	—3.29	530	1032	3.3	103.5	132	30
3....	—.601	—3.24	720	1028	3.2	99.2	96	28
4....	—.587	—2.51	1120	1019	2.6	98.8	80	24
5....	—.593	—2.60	1050	1021	2.8	103.8	140	44
7....	—.644	—2.91	870	1023	2.9	103.2	132	38
8....	—.689		Delirious.			103.2	128	40
9....	—.838		Delirious.			104.6	148	48

This patient was seen the day after entrance into the hospital, with the right lower lobe consolidated, high temperature and high pulse. The freezing points of the blood and of the urine were low. On the third day the patient had a crisis and the freezing point of the blood and of the urine began to approach normal. Two days later the patient had a relapse, with high temperature, high pulse, and rapid respiration. Physical examination now showed an extensive consolidation of the right lung, anteriorly and posteriorly from above down to the lower border of the scapula. The patient became considerably worse and delirious. On the seventh day the freezing point of the blood was very low. The patient was cyanotic and oxygen had to be administered. The patient died the night of the ninth day. The freezing point of the blood preceding his death was —0.838; temperature, pulse and respiration were very high.

Case 19.—A. G., Ward 10, No. 25. Male, 50 years old. Upper left lobe extensively consolidated. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.573	....	...	....	..	103	112	48
2....	—.592	—2.87	700	1023	3.1	102.2	96	36
3....	—.603	—3.17	560	1027	3.5	102.8	86	48
4....	—.813	—3.21	430	1032	3.6	102.8	120	46
5....	—.834	....	...	....	..	102.8	140	48
6....			Patient died.			103.6	138	52

The last blood for estimation was taken an hour before death—oxygen was administered for last twenty-four hours following venesection, withdrawing 500 c.c. blood and injecting 850 c.c. normal salt. In this case it was noted that on the fourth day the patient was very cyanotic, and since the pulse was slow a venesection was performed, withdrawing 500 cubic centimeters of blood. Eight hundred and fifty cubic centimeters of salt solution were then injected. It will be noted that this did not alter the results of the freezing of the blood, the same descending nevertheless. Oxygen was administered during the last twenty-four hours. Patient died of heart failure. The freezing point of the blood before death was remarkably low.

Case 20.—J. O., Ward 22, No. 9. Male, 44 years old. Left and right upper lobes involved. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.579	....	...	....	..	102	120	40
2....	—.694	—2.27	830	1023	2.7	103.2	124	44
3....	—.835	—2.31	850	1023	2.8	104.6	136	48

(Patient died next morning.)

While not so severe on entering, the freezing point of the blood was not very low, but it gradually descended so that on the day before his death it was very low.

Case 21.—Ward 24, No. 65. Male, colored, 35 years old. Right lower lobe consolidated. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.588	....	No specimen.		....	102	120	38
2....	—.687		Delirious.			102.6	108	52
3....	—.811		Delirious			103.2	120	48

Became suddenly worse and died. Case very similar to the preceding.

Case 22.—P. C., Ward 10, No. 3. Male, colored, 30 years old. Lower left lobe consolidated. Venesection and injection of salt solution 500 c.c. and 600 c.c. on entrance. Stimulating treatment. Syphilitic history:

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.615		No specimen.			103.6	148	36
2....	—.62	....	...	....	..	102	132	42
3....	—.73	—1.13	500	1012	1.5	104.5	70	50

Another fatal case, very severe, and brief in its course. The patient died on the third day after admission. The freezing point of the blood became very low before death. The patient died of heart failure.

Case 23.—M. J., Ward 10, No. 6. Male, 29 years old. Lower left lobe involved. Spread to upper lobe and right lower lobe third day.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.591	....	...	....	..	101.8	106	28
2....	—.607	—2.95	830	1026	2.8	102.4	122	32
3....	—.608	—3.03	880	1026	2.9	103.4	120	30
4....	—.715	—3.10	720	1030	3.2	103	124	44
5....	—.837		Delirious.			104.3	140	56

Patient died from exhaustion and heart failure. Oxygen was administered before death. Died the night after last record given. A very severe course. Patient died on the fifth day, showing same findings as preceding fatal cases.

Case 24.—O. C., Ward 24, No. 78. Male, 49 years old. Right lower and middle lobes consolidated. Normal salt per rectum every four hours. Milk diet; stimulating treatment.

Day.	Blood freezing.	Urine freezing.	Am't.	Sp. gr.	Urea.	Temp.	Pulse.	Resp.
1....	—.611	....	...	....	..	102.4	136	32
2....	—.623	Involuntaries.		....	..	105.3	140	40
3....	—.702	—3.25	720	1031	3.4	103.8	120	36
5....	—.728	—3.24	350	1030	3.2	106	144	42

(Patient was delirious. Died 3 a. m. next morning.)

This was a very severe case. The patient died on the fifth day after admission to the hospital. It will be noted that the freezing points of the blood and urine in this case were low, the freezing point of the blood being lowest before death. The patient died of heart failure.

The chlorids in the urine were also estimated in the above experiments. The following method (approximate) was used:

Urine, 5 c.c.................... ⎫ Shake, and note amount
HNO_3, 10 gtts.................... ⎬ of precipitate.
$Agno_3$ 10 per cent. sol., 2 c.c.. ⎭

The chlorids were found markedly diminished in amount up to the crisis, when they rapidly increased to above normal quantity, to recede later during convalescence.

In reviewing and summarizing the above data, it is to be noted that all the patients were males between the ages of 18 and 50, and were apparently healthy before taken sick with pneumonia. This excludes, therefore, differences which might be peculiar to the disease as manifested in children and old age. All the patients were on essentially the same diet: Milk, and later broths and plenty of water. As to the treatment, only regular stimulating treatment was given, consisting of strychnia, whisky or digitalis. A few mentioned had salt irrigations. I believe that, in view of the results tabulated above, the following conclusions will be considered logical and proper:

CONCLUSIONS AS TO BLOOD.

1. There is an absolute lowering of the freezing point of blood in pneumonia.
2. The freezing point lowering of the blood depends in some way either on the extent of consolidation of the lung or on the height of the temperature, or both.
3. The lowering of the freezing point of the blood is greater than would be accounted for by the increased venosity of the blood, due to deficient aëration in the lungs.
4. The concentration of the blood increases, as shown by the lowered freezing point, as the disease progresses up to the time of crisis. Some time is necessary for the elimination of the excessive accumulation of products in the blood. Hence, several days elapse before the freezing point of the blood rises again to normal.
5. In those cases where the heart weakens perceptibly, the freezing point of the blood becomes lower. In the fatal cases in which the heart gives out, the freezing point of the blood is extremely low.
6. The lowered freezing point of the blood is apparently not due to deficient kidney function, but may be due to the inability of the kidney to excrete the excessive products of metabolism.

CONCLUSIONS AS TO URINE.

1. The freezing point of urine in pneumonia is considerably lowered.
2. This lowering is greater than would be accounted for by a mere concentration of normal urine.
3. The chlorids excreted are constantly diminished, due to a decrease in amount taken in (Sollmann).
4. The freezing point of the urine times the number of cubic centimeters voided is increased.
5. The quantity of urine is decreased, whereas the freezing point is lower.
6. The lowering of the freezing point of the urine is not due to chlorids, but to metabolic molecules excreted.
7. The freezing point of the urine does not rise to normal until after that of the blood, that is, several days after the crisis.
8. The specific gravity of the urine is not an accurate index to the concentration of the urine.
9. The freezing point of the urine bears no constant relation to that of the blood normally, for in a case with a freezing point of blood at —0.54° C. the freezing point of the urine may normally be lower than in a case in which the freezing point of the blood is —0.57° C. or *vice versa*.

I wish here to express my thanks and gratitude to Prof. F. R. Zeit for suggesting this problem and directing the work; to Dr. W. H. Buhlig for many valuable suggestions, and to the directors of the laboratory and internes of the Cook County Hospital for assisting me to find the material.

PLEURAL EFFUSIONS IN CHILDREN.*

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These affections are probably as old as the creation of man, as the conditions producing them must have obtained ever since man first became sick. Hence, I scarcely think that much that is new can be said on the subject; it is possible, however, that I may say something that will cause some one to search deeper than ever before, and thus enable him to save a life that otherwise would have been sacrificed. But the best motive I have in writing is to provoke some discussion that may throw more light on diagnosis or treatment that may prove of benefit to the practitioner and to the one mostly concerned, the patient.

These pleural effusions, though fairly easily diagnosed by the expert, are too frequently overlooked by the rank and file of the profession, and, secondly, often when diagnosed, are not treated with sufficient vigor, but allowed to drift on expectantly, when only radical measures should be employed and thus give the patient the best chance and the most certain promise of recovery. It may seem strange to some of you whose daily life in large cities is so full of scientific certainty that I should make such observations unless you come in contact, more than I am aware, with that large number of routine physicians who are willing to bear or, rather, let their patients bear what they, either through ignorance or shiftlessness, are not able or willing to take the trouble to help. But some of you are, as I have been, a teacher, and you certainly remember some of the material that came before you as students and who graduated in medicine from your classes, I am sure, with many misgivings on your part. The power to generalize, and from that foundation to specialize, is not given all people; the ability to intelligently make comparisons, as we do in diagnosis, is not easy alike to all, even when they have a large stock of facts on hand. Hence, I want to emphasize this fact that throughout this great country of ours many patients with pleural effusions, both old and young, especially the latter, go to their deaths with the disease unrecognized by the attendant. You know, if these are not properly treated, and it must be surgically, that the vast majority will prove fatal.

First, there is a widespread idea that all pleural effusions must arise from a preceding attack of pleurisy. A little reading in pathology and text-books on diseases and their etiology would soon remind us such is not the case. Most cases in children, perhaps nine-tenths of them, have their origin in pneumonia—especially that form termed pleuropneumonia—yet many cases of effusion are secondary to Bright's disease, scarlet fever, rheumatism, amyloid disease, trauma, heart affections, typhoid fever, syphilis, affection of the spleen, articular inflammations, pertussis, osteomyelitis, appendicitis and others, not the least of which is tuberculosis. For reasons not supported by experience, it has been the routine of fashion to consider nearly all cases of pleural effusions of tuberculous origin, and, while it is not good practice to ignore tuberculosis as a factor in the etiology, yet there is no good reason to over-emphasize it. There are many more of these tuberculous in adults than in children, in the ratio of 4 to 8 times as many. This is as it should be, as we find many more cases of tuberculosis in adults than we do in children, especially in early childhood. It is most reasonable to think of the reverse, namely, that consumptives may be liable to pleural effusions as well as other people.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

There are many other errors not only in etiology and anatomy, but in the pathology, prognosis and treatment of these cases. For instance, we speak of the pleural cavity. Physiologically and anatomically it may be said there is no such cavity. Only when filled with pathologic products do we have such a cavity—when filled with serum, pus, chyle, blood or air. Then the layers of the pleura normally contiguous become separated and a cavity forms, filled with these products. These fluids usually first make their appearance in the costophrenic sinus, then extend laterally and upward. When pleural exudates are examined we find many pathologic micro-organisms in them, often defining the character of the origin of infection. Staphylococci, streptococci, pneumococci, tubercle bacilli, gonococci and others. I am firmly convinced that the presence of any of the pathologic micro-organisms in sufficient numbers may provoke enough irritation to produce a pleurisy with an accompanying effusion.

As far as anatomy of the parts involved is concerned, it will not be necessary to go into detail, for text-books on anatomy and diseases of children will furnish that information more fully than I can, but will only draw your attention to the fact that the anatomy of the respiratory apparatus differs from that of the adult in that the pleural sinuses are deeper in children; hence, in puncturing an effusion it may be well not to wound the diaphragm, which rises comparatively high in the child. Even the stomach or intestines might be wounded if one should forget these relations. The relations of the two sides must be kept in mind. The pleural sinus of the left side is deeper than on the right, owing, perhaps, to size and position of organs on right side. The liver, especially large in the child, pushes the right lung up. The right lung is also smaller or shorter than the left lung. So when aspirating it is well to use the posterior axillary line, as that would lead to the most central point of all effusions—and to use the sixth or seventh interspace on the left side and the fifth or fourth on the right side, of course, combining these anatomic relations with each individual case.

As diagnosis in some cases is difficult, all the more should we use care in not allowing a case to escape us undiagnosed. Ordinary percussion and auscultation carefully made, excluding pulmonary and respiratory affections, and when in doubt coupled with the use of an exploratory aspiration, will, in painstaking hands, usually lead to a correct diagnosis. Pleural sounds, especially in dry pleurisy and serofibrinous pleurisy, by auscultation, imitate the creaking of a compressed snow ball or fine creaking sole leather. The breathing is of the bronchial variety. Percussion yields dullness, but in some cases when the child lies down the effusion may settle to the lowest point and, surmounted by gas or viscera, may give resonance and thus deceive. Diagnostic signs in effusions are rather deceiving, because both percussion and auscultation sounds vary owing to position of the child and number of places of adhesions. Percussion usually reveals flatness; absence of râles, friction sounds and bronchial breathing are found on auscultation. We also notice cough, pain, diminished fremitus, intercostal bulging of affected side, intense dyspnea, paleness and anemia, decubitus on diseased side by preference, and when all these signs do not give a satisfactory diagnosis they may be supplemented, as before mentioned, by exploratory aspirations; even then the latter procedure in careless hands may prove unsatisfactory and appear negative when effusion is present. The needle may be too small and may become occluded with coagula, the precise position of the effusion may not be reached by not going far enough or too far, being placed too high or too low; the aspirating apparatus may be faulty; in short, when effusion is strongly suspected and exploration is at first negative many patient and careful trials should be instituted before failure is to be accepted. It is scarcely necessary to add that all such efforts must be carried out only under most pedantic care as to asepsis, and the old surgical maxim, *"Nil nocere,"* is here paramount.

The character of the effusion can by no means be diagnosed except by the exploratory method. It may be grossly stated as a matter of presumption that in children of 3 and under, the effusion is purulent. The difficulty of diagnosis is increased when an effusion is encapsulated, when it is a subphrenic abscess or when it is an empyema necessitatis, as the latter may be mistaken for superficial abscess, eroded or gangrenous rib or trauma or the outlet of some burrowing abscess, as, for instance, a perinephric or psoas abscess. But in cases of pleuropneumonia the effusion may be masked by the prominent symptomatology of the pneumonia, but this alone should put the attendant on his guard, especially if he have a case of retarded resolution, for an empyema may be mistaken for a case of delayed recovery in pneumonia. Many cases of empyema are often very insidious in onset and behavior, but if you will remember the proneness of children to develop effusion after respiratory diseases, after scarlatina, tuberculosis, pertussis, rheumatism, endocarditis, liver diseases, kidney affections and those of the spleen, especially when coupled with an increased leucocytosis, it is better to suspect empyema and act accordingly. Now, I do not imply that one should go to extremes and diagnose everything as effusions simply because we can not make it out a case of malaria or fits, but let us use caution and not be humiliated and fail in our diagnosis and lose a valuable, promising life that should by all means have been saved, for, while most undiagnosed cases will die *per contra*, nearly all properly treated cases recover in children, and that is my other chief contention in this paper, to which I will refer under treatment.

I wish to emphasize prognosis. This, especially in children, is good, but must materially depend on the treatment, the skill of the attendant and especially the faithfulness with which a positive line of treatment is carried out. It also depends much on the primary disease that gave rise to the effusion and the length of time the patient has been afflicted. It is most unfavorable when the diagnosis has been delayed, where too much stress is placed on expectancy or, what amounts to about the same, medical treatment, when primary disease has seriously invaded or destroyed some of the principal organs, such as the kidney, lung, heart, endocardium or pericardium, in amyloid degeneration of the liver, also when operation is delayed too long. Prognosis is good when early diagnosis is made, when operated on early by proper method, when child's general condition is good, and causative disease has not made too serious inroads on the patient's constitution. But, to repeat, in general it may be stated the prognosis is better than in adults in proportion of two to three times as good. Of course, under 1 year of age the mortality is great, probably 50 per cent. of deaths; however, at that age the disease is rare. Also when the disease is bilateral, a rare condition. Some of my chief reasons for a better prognosis in children is that we have a more active metabolism, a smaller cavity, where in this case real, and not relative size, counts—a greater elasticity of chest wall so the cavity can more readily contract or collapse, a condition much to be desired. It may be well to pause here long enough to remind you that fully nine-tenths of all cases usually follow pneumonia, especially pleuropneumonia; the other one-tenth all the other causes previously mentioned.

I have already said enough to have committed myself to the treatment; that it must in the majority of cases be surgical. From the fact that over one-third of all cases of effusion are purulent, the treatment must be surgical; most of the others are serofibrinous and, while they often absorb under stimulation, poultices, heat and liniments and some other medical treatment, yet they would recover faster under incision, because the large fibrinous clots so frequently present can be mechanically removed instead of leaving them to tardy absorption and a possible prey to infection. The two chief surgical procedures are puncture and aspiration and incision with or without section of a rib or two. True enough, aspiration has cured some cases of effusion, both serous and purulent, yet why trust a doubtful method for one more certain? When we have a purely serous effusion, aspiration once performed, or once or twice repeated, will usually lead to a rapid recovery. The same is true when an incision is done for an empyema. It may be parenthetically stated that while children recover rapidly they also die very rapidly under operation if they succumb to it; so danger signals must be heeded. Aspiration may fail in such cases or it may delay the recovery; it may prolong the infection and thus endanger the recovery, and may also lay the foundation to a possible tuberculosis. As to accidents in operations, they are less liable than in adults.

Now, who should perform these operations? I claim that any physician who is competent to treat diseases at all should be able to aspirate a serous effusion or make an incision for an empyema in a child. Of course, it is self-evident that if a competent surgeon can be had it may be preferable to have him operate. In rare cases, and they are extremely rare, where an Estlænder operation is required or the more serious and extensive Schede procedure, the highest possible surgical skill is none too good.

I shall not worry you as to surgical methods, how to operate, the best methods of drainage and the other details; any modern text-book will supply this information if, indeed, any one is now present that may be in need of such. With a short report of two cases I will conclude.

Case 1.—Girl, 3½ years old, had pneumonia, following measles; was supposed to be suffering from delayed resolution. I was called in consultation about the thirtieth day of disease; found child of naturally fleshy and buxom habit, very emaciated, pale, cadaverous appearance, increased leucocytosis, hectic cough, great dyspnea, left intercostal spaces bulging, heart displaced to right, and other symptoms classical. On inspection found just above left nipple in fourth interspace a red spot ⅝ inch in diameter, appearing like a common boil; I diagnosed an empyema necessitatis, proved by aspiration. I made an incision two inches long, beginning with the external lesion and extending toward the left. Fully 40 ounces of pus of a rich, creamy appearance was removed under cocain anesthesia, double rubber drain introduced and child made a complete, uneventful recovery. This fine little girl would have died under her first attendant, who still treated her for pneumonia and grippe in a very dilatory manner, not even administering supportive measures.

Case 2.—Boy, 31 months old, had some respiratory disease diagnosed by his attendant as pleuro-pneumonia. On the thirty-first day of the disease the physician, a bright country practitioner, observed bulging on left side, heart displacement and other signs which he interpreted either pleural or cardiac effusion, not being certain which, and exploratory aspiration being denied him, he sent for me. Under cocain exploration was painlessly made, pus found at once and operation advised, which was done next day. This child was very thin, restless, cyanosed, pulse high, temperature 104.6, anxious expression of face and, as in other case, leucocytosis marked. Incision under local anesthesia was made in sixth interspace and between anterior and posterior axillary lines two and a half inches long. With each respiratory movement pus spurted out in streams. Child was held by father on lap, left arm raised high and placed around father's neck. After liberating about 50 ounces of pus patient got weak, I desisted further work, placed a double drain, dressed wound, bandaged and put child to bed. He also made a brilliant recovery, notwithstanding large quantities of pus were removed many times at subsequent dressings.

Both these children are now (one 4 years and the other 3 years since operation) in splendid health, whereas both would have helplessly perished without operation timely performed. True, cases of empyema necessitatis have spontaneously recovered, so have cases that ruptured into a bronchus, and pus expectorated, but it would be only proper to say of such that they got well in spite of poor treatment rather than that the attendant deserved any credit for their recovery.

In closing let me once more urge a thorough diagnosis in a painstaking, almost pedantic manner, with all clothing removed as well as bedding, leaving no means unused to confirm your findings. You may not believe me, but experience confirms me, too many auscultations are made with the unaided ear, too many percussions made through their clothes and poultices, and too many diagnoses arrived at by snap judgment processes and smart guesses.

It may not be amiss to remember that the microscope and blood counts may aid when we are in the dark, and that children having effusions usually die if badly treated, and almost always recover when treated correctly, fearlessly and courageously.

DISCUSSION.

Dr. A. C. Cotton, Chicago, agrees with Holt that the apex beat should be located if possible in every case of suspected empyema, even when the needle shows pus. Left-sided effusion, if extensive, ought to displace the apex beat. Otherwise the source of pus may be a pulmonary abscess. Dr. Cotton does not believe that Dr. Wahrer intended to convey the impression that he lost 50 per cent. of his cases. Some people's ears are built pretty well, and we have the authority of the Scriptures to let him who has ears to hear with his ears and not use the stethoscope.

Dr. William J. Butler, Chicago, is inclined to regard with great skepticism any diagnosis of effusion necessitating surgical interference when the dullness is obscured by slight change of the position of the patient.

Dr. D. S. Harnson, Cleveland, Ohio, believes that the diagnosis of pleural effusion can be made without the needle. Were he the child he should like that physician best who would make a careful examination and make the diagnosis without the needle because, simple as it is, it is both painful and unpleasant. A child with pleural effusion will nearly always lie on the back, and the man who carefully examines the back will nearly always make out these exudations very early.

Dr. C. F. Wahrer stated that some of these patients go unrelieved and to their graves for want of proper diagnosis and treatment. In reply to Dr. Cotton's statement that 50 per cent. of cases is too great a mortality, he said that in children one year of age the mortality is great, and that the consensus of opinion of authors in this country and in Europe is that in about 50 per cent. of children under one year the mortality reaches 50 per cent. and over. The different sounds in auscultation and percussion vary as much as the number of authors speaking on them. Dr. Wahrer does not care about putting his ear on everybody's naked chest, and in some patients the intercostal space is so deep that his ear is not deep enough to place it in between. Those who depend on the unaided ear have not availed themselves of the best opportunities of making a diagnosis by the use of the stethoscope. In reference to Dr. Harnson's statement that he would prefer to have a diagnosis made without the needle, Dr. Wahrer said that there is no harm in inserting the needle into the chest if hands and instruments are pedantically clean. It is better to avail ourselves of all the diagnostic means rather than to let pity interfere with our best judgment.

THE MANAGEMENT OF TYPHOID FEVER IN CHILDREN.

A PLEA FOR ENTEROCLYSIS.[*]

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In attempting to give a very brief outline of my methods of managing typhoid fever in children, it is well to preface my remarks by saying that I will confine myself strictly to those methods which my experience has found most satisfactory; it is hoped that by so doing I may invite a free discussion and thus gain some additional knowledge on this perennial subject.

To manage a case of typhoid fever in a child successfully, we must be sure of our diagnosis and fully understand the child. An early diagnosis is not an easy matter, because the disease is frequently ushered in under the guise of some acute disorder which greatly postpones a decision. Usually the child has been ill for six or seven days before the physician is called. At this time we may find a temperature ranging from 101 to 104 degrees. The symptoms may strongly suggest enteritis, meningitis, pneumonia or autointoxication. Indeed, it may be doubted whether we ever manage a case of typhoid as typhoid before the end of the first week. Generally at this period we will arrive at a correct diagnosis, and then only by the process of exclusion.

Typhoid in children may be accompanied by diarrhea or constipation; the latter seems to be as frequent as the former. The spleen is often chronically enlarged, especially in children with rickets. This is a strong factor, however, in the diagnosis. The same is true of the liver. Chronic appendicitis comes in for its share of the blurring of an early diagnosis in typhoid. The general symptoms very frequently do not agree with the temperature, pulse or the physiognomy of the patient. In no other serious disease do we have the patient seemingly so well, in spite of some single, serious symptom. By reason of this conflicting array of early symptoms we frequently encourage relapses.

The Widal test and the diazo reaction are of very little value prior to the beginning of the second week, at this time we have additional symptoms to confirm the diagnosis, thus reducing the value of the Widal test. Undoubtedly most cases of chronic fever in children are diagnosticated by the process of elimination, and not usually before the tenth day, the only exception being where we have an overwhelming toxemia with few complications. Many cases of typhoid fever brought under my notice had been previously treated for pneumonia, and many cases were classified as typhoid which were chronic food poisoning.

Regardless of our pathology, for the sake of clinical study, typhoid may be regarded as a general sepsis, and any treatment that will lessen the toxemia and shorten the leakage in the general circulation may be regarded as a step toward a specific treatment. As yet, however, we have no specific treatment for typhoid fever. It is very interesting to notice, in passing, how frequently specific medication gains recognition for a time, its limitations conceded, and then it is discarded and quickly forgotten. The same may be said of the Brandt system, while tepid bathing has universal application.

It has been my privilege to see a large number of very severe cases of typhoid fever in children ranging between the ages of 6 and 15 years, the most susceptible age as well as the age when tact and care are at a premium.

To me it seems that the two elements necessary to success in combating this troublesome and dangerous disease are to reduce the toxemia and supply food and fluid. The first step is quietude in a large, well-ventilated room with calomel, which has not lost its reputation as an intestinal antiseptic, and a daily colon irrigation. The emphasis of the whole treatment I wish to place on the manipulation of the colon washing; this I order daily unless some grave counter indication obtrudes itself. Enteroclysis will reduce toxemia and necessarily the temperature, and at the same time supplies much needed fluid to the body. If this is carefully performed, it will be acceptable to the child and greatly shorten the period of illness. The temperature of the colon irrigation is always governed by the temperature of the child's body. All text-books give the technic of enteroclysis, yet I fear that the nurses fail to gain the desired results from this mode of treatment, because the attending physician does not impart specific instructions. Frequently I assist the nurse in the first treatment, thus allowing me to discover any abnormalities of the bowel, if any should exist, as I recognize its limitations as a therapeutic agent, and this must be done before valuable time is lost or any mischief occurs. If nurse and physician have gained the confidence of their little patient, the work will be performed pleasantly and profitably.

It must be remembered that the intestinal tract is the seat of many troubles and dangers during a course of fever. Tympanites may be troublesome by reason of some previous enteritis or peritoneal irritation; this is usually combated by colon to relieve this tympany. I frequently substitute bicarbonate of soda for the saline solution, or I may add tincture of asafetida or some aromatic infusion, such as chamomile or a small quantity of turpentine, if tympanites and pain are troublesome. If peristalsis is increased by the intestinal washing, I reduce their frequency; or, if necessary, throw into the bowel one or two ounces of starch or bismuth emulsion. If hemorrhage should occur, I use the cold enema and apply the ice externally in serious hemorrhage; ice suppository may be indicated as well as the ice bag externally. If the heart is weak, I use a small quantity of whisky in the clyster.

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[*] Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

I depend on the ice bag to the head and the hot water bag to the feet, as a routine, with a tepid sponge night and morning. Ice bag to heart, if fever is high. Throughout the illness observe a careful toilet of the nose and mouth. Change of position every two hours will serve to prevent pneumonia. Ice bag to the head need not be watched, except to see that it is not empty, but ice bag to the chest or back should not remain too long on one spot for fear of producing congestion of the kidney. I have found that children will submit more gracefully to the enteroclysis and the use of the ice and hot water bags than to frequent bathing, and on this account I have practically abandoned sponging every two hours if temperature reaches 102.2 degrees, which seems to be the classical treatment.

Diet, throughout the whole course of the fever, I have reduced to peptonized milk and albumin water. Whole milk is out of the question, even with children 15 years of age. As Jacobi says, "It is food for children in health, but food for bacteria in fever."

Even peptonized milk is better appropriated if taken with some charged water. I alternate the milk with the albumin water; the use of lemon and orange water is of inestimable value. If any drug is indicated—and I never give any except to meet a decided want—I administer it in a large glass of water. Last year I compared six cases with and without the free exhibition of water. In the six cases in which I forced a full glass of water with frequent intervals, the temperature reached the normal on an average two days earlier than in the series of patients who were allowed to drink the minimum quantity, thus demonstrating the value of fluid as an eliminator.

Retention in a recumbent position and on liquid diet I have found should continue for ten days after normal temperature has been reached.

In conclusion, let me say that I have no original thought to advance, but simply desire to emphasize the value of enteroclysis in typhoid and to insist on a careful technic of the same by the attending physician. Success in surgery is attained by thorough technic in the respective fields, and if we as physicians are to gain any exactness in our treatment we must carefully eliminate the unnecessary routine and centralize and magnify those means which we have found essential and necessary.

DISCUSSION.

Dr. John C. Cook, Chicago, emphasized the value of water in the treatment of typhoid fever. The value of washing out the toxins is unquestioned, and the water treatment in general has been proved to be valuable. When antitoxin was first introduced and was gaining ground, Baginsky was asked if it were advisable to use it in all cases. His answer was to use a remedy when it was fashionable, that it cured them. There is probably nothing that has marked the different periods of the medical era as much as our views on therapy. Everyone who has used enteroclysis as a routine treatment has undoubtedly found it valuable. In Dr. Hollopeter's experience in hopitals his nurses are trained, but in private practice where nurses are not at hand the details of this treatment should be gone into. Enteroclysis is a valuable remedy, as is calomel, but the best results will not be obtained from it unless detailed directions are given for its employment. The ice bag Dr. Cook considers a valuable remedy, but in private practice the physician can not tell those in attendance to leave the bag on the head indefinitely without some reference to the temperature.

Dr. Kate Lindsay, Boulder, Colo., said that the ice bag can be used very well in private practice if the physician applies warm fomentations for three to five minutes after the ice bag has been on for an hour or two and then gives a brisk rubbing. The ice bag can then be reapplied. This will quiet the nervous system and makes the treatment pleasant to the child. The ice bag can be applied safely by those who are very inexperienced if the details are attended to and the circulation kept up. A pleasant effect will be gained by the intermittent use of short, warm applications, and the effect of the ice bag can be prolonged by this combination of heat and cold.

Dr. A. C. Cotton, Chicago, thinks that physicians are too apt to trust details to the nurse. Many nurses supposed to have been thoroughly trained fail to recognize all the anatomic requirements. When a nurse introduces a thermometer or the nozzle of an irrigator into the rectum with the baby in the dorsal position, she is taking the chances of causing traumatism of the posterior wall of the rectum. The probabilities are that the nurse will have the child lying on its back. In irrigation of the rectum there are many opportunities for traumatizing the mucosa. Of course, the physician knows that the axis of the rectal outlet forms an angle of 40 degrees with the long axis of the body, and that no rigid instrument can be introduced into the rectum from the front with a patient in the dorsal position without forming a right angle with the posterior wall of the rectum. It is easy, therefore, to see how rectal ulcers may develop. Dr. Cotton believes in this care of the child in typhoid fever especially; since frequent invasion of the rectum may have to be kept up for perhaps three weeks, it is an essential point that the nurse be instructed to turn the child over on the side, introducing the tube at an angle of 40 degrees.

Dr. John Lovett Morse, Boston, said that in judging of the results of the treatment of typhoid fever in children it must always be remembered that the tendency of this disease in childhood is to recovery. He cautioned against forming too favorable an opinion of the results of treatment by large amounts of water internally. He does not think that the published results from this form of treatment will bear close investigation and feels sure that when others begin to try the treatment they will not obtain the same results. It should be remembered that in typhoid the vasomotor system is relaxed and that on this account care must be observed in putting large amounts of water into the relaxed vessels, and thus dilating them more and bringing further strain on the heart. In a recent case of scarlet fever treated in this way, so much water was given that dilatation of the stomach resulted, and several months were required for the recovery of the patient. Dr. Morse does not believe it is necessary to keep patients with typhoid fever on so restricted a diet as is usually done. He feels that a diet composed entirely of milk is not the best food. There is no food, in any way reasonable, which will give such a large residue as milk. A caloric value much greater than from milk can be obtained by giving diluted cream. Better than proteids and albuminoids in the diet is some form of starch sugar.

Dr. W. C. Hollopeter said that Dr. Cotton's statement relative to the danger of injury to the bowel seemed rather misleading. Dr. Hollopeter allows the tube to be inserted just beyond the external sphincter when the water is turned on; by this method the water forms a cushion which slowly dilates the bowel, and the tube following causes no injury. It would be a rude method indeed to push the tube into the bowel without first distending it. He emphasizes this point because nurses are prone to employ this valuable therapeutic measure in a slovenly manner. Dr. Hollopeter referred to Dr. Lindsay's remark about the warm application, and said that he believes we can reduce temperature as well with warm water as with cold. He never uses cold unless there is a very high temperature. In answer to a question, he said that before a physician gets a patient with typhoid fever he has his mind made up to use enteroclysis.

THE EXTRACTION OF UNCOMPLICATED IMMATURE SENILE CATARACT.*

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In a discussion of this subject it is appropriate to say that a cataract is designated as senile if the patient has reached the fiftieth year of age; uncomplicated, when not associated with any special disease; and immature, when the opacity does not extend throughout the entire lens substance.

While this designation is in accord with the generally accepted teaching of to-day, technically we probably are not warranted in associating cataract with senility in the sense that the opacity of the lens occurring after middle life is a symptom of senility; or in designating a cataract as uncomplicated simply because we fail to detect the co-existence of any other intraocular pathologic condition.

Numerous observers have asserted that there are good grounds for considering eyes in which cataract develops as otherwise diseased. Thus Becker[1] states that, strictly speaking, there is no such thing as a primary cataract, the expression "primary" simply hiding our ignorance. Foerster[2] evidently recognized the influence of a previous or general disease when he said, "If a cloudiness of the lens is just beginning, very severe bodily ailment may hasten the development of cloudiness," to which Stricker[3] adds, "The constitutional disease manifests itself in its action on the lens in such a manner that it either first causes disease of other portions of the eye, thereby leading to a pathologic changed vitreous, which, in its turn, leads to a disease of the lens and cataract formation, or the lymph of the entire organism becomes changed, thus leading to cataract formation without any other disease of the eye having previously existed." Risley,[4] in calling attention to the importance of choroidal disease as a factor in the production of opacity of the crystalline lens, makes the statement that "while opacity of the lens is a disease of advanced life, it does not in all probability depend on senile change, but is originated in local pathologic states involving the nutrition of the eye itself." It is probable, however, that functional decline of the tissues of the body, which mark the onset of senility, may, by lowering the resisting power of the tissues of the eye, be responsible for the development of pathologic conditions which disturb the normal sclerosing process in the lens and lead to opacity. We may have premature, as well as delayed senility, but that does not account for the cataracts which occur in persons just past middle age who may be prematurely in decline, nor does it explain why persons of great age in whom the signs of senility are exceptionally pronounced, and who have remarkably good vision, are exempt from cataractous change of the lens. It is reasonable to presume, therefore, that cataractous change in the lens is either secondary to some disease, either local in the eye, or to some general disease of the entire organism, and that senility may or may not be a factor in the production of the pathologic state on which the development of the cataract depends.

The existence of marked choroidal and vitreous changes accompanying incipient cataract we are all familiar with, as such cases are frequently presented to us before decided clouding of the lens makes a satisfactory ophthalmoscopic view of the fundus impossible, and at a time when the vision is more impaired by the choroidal and vitreous changes than by the loss of transparency in the lens. But there is a class of cases in which a mild choroidal inflammation precedes the development of cataractous change in the lens, which may be undiagnosed unless the ophthalmoscopic examination is made early in the progress of the case, which frequently is not possible because the opportunity for such examination is not offered, or may be overlooked later, when the patient presents himself on account of failing vision from incipient cataract, unless the history of the case is carefully considered and unusual care is exercised in making the ophthalmoscopic examination with a fully dilated pupil. The fact that we do not find diseases of the eye ground after the extraction of the cataract does not indicate that such diseases did not exist in mild form at the beginning of the cataractous process, and subsequently disappeared as a result of the enforced rest of the eye occasioned by the clouded lens. From the fact that I have been able to detect these mild pathologic changes in the fundus frequently during the stage of incipiency of cataract, I am inclined to believe, as Risley has pointed out, that diseases of the eye ground are the rule rather than the exception in cataract patients.

With a recognition of the diseased processes which constitute the principal factor in the causation of cataract we may hope, by applying the proper treatment at the proper time, to prevent the occurrence of cataract in a fairly large percentage of persons who present themselves to the ophthalmologist before cataractous change in the lens has set in, or at a time when the beginning cloudiness of the lens is so slight as to make its arrest entirely possible. In those cases in which the process of cataract formation has become well established I do not believe it is possible to cause a retrogression, and it is those cases, when unaccompanied by diseased processes which would contraindicate operative procedures, with which this paper deals.

But the very fact that many, and perhaps the majority, of immature cataracts are accompanied by at least a mild disturbance in the uveal tract is sufficient ground for hesitation in attempting extraction, even in the absence of other contraindications, for the reason that enforced rest occasioned by the increasing opacity of the lens is a measure required to produce a subsidence of the uveal disturbance, and the beneficial effects of which would be more or less destroyed by extraction of the protecting lens. As the existence of those mild vitreous and choroidal inflammatory or degenerative changes must necessarily alter the prognosis in extraction of immature cataract, it is of the utmost importance that the history of such cases be given careful consideration and the functional examination of the eye be carried out with utmost care. In many cases, again to quote Risley,[5] to whom we are indebted for extensive study of this subject, a long history of asthenopia, preceding the failure of vision from incipient and immature cataract, a more or less discolored iris, sluggish in its action to light and shade, and to mydriatics, injected conjunctiva and swollen caruncles, associated with headache, furnish a group of symptoms which point to the existence of choroidal disease." These processes do not, in a large proportion of cases, present the gross ophthalmoscopic appearances which characterize the rapidly destructive diseases in which marked retino-choroidal inflammation, fluid and muddy vitreous, and floating opacities are conspicuous features, but they are attended by a characteristic group of objective symptoms which, if not demanding treatment, certainly demand the enforced rest secured by the gradual opacification of the lens. But in those slowly progressing cases in which the clouded lenses, even though semi-transparent, have practically incapacitated the individual for the ordinary pursuits of life, and in which the enforced rest of the eye ground for a greater or less period has resulted in quieting the objective symptoms present with the beginning of the cataractous process, the advisability of extraction becomes a question worthy of attention.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Pathologie und Therapie des Linsen Systems, 1877.

[2] Graefe-Samisch, vii.

[3] The Crystalline Lens System, 1899.

[4] University Medical Magazine, March, 1889.

[5] The Journal A. M. A., Dec. 7, 1901.

In considering the operative features of these cases of cloudiness of the lens in those persons beyond middle age it is essential that we differentiate the immature cataract from the loss of transparency, accompanied by impairment of vision, due to advanced sclerosis. The one is a diseased process, due to an interference with the normal sclerosing process and accompanying alteration in the transparency of the lens (Becker), whereas the other is purely a physiologic process due to a lessening of the transparency on account of the hardening of the lens and consequent greater absorption of light. In the immature cataract, particularly those occurring in persons under 50 years of age, there will generally be found a soft cortex, adding to the difficulties of extraction, whereas in the sclerosed lens the cortex will be found hard, thus making it possible to extract the lens in its entirety.

Until recent years it was the generally accepted teaching that immature cataracts were not favorable for extraction, owing to the difficulties encountered in the removal of soft cortical material, and in consequence nearly all operators followed the practice of waiting until maturity, or until the lens was entirely opaque, before attempting extraction. That policy is still followed by many experienced and competent operators, though not a few attempt, and with a considerable degree of success, to hasten the time when extraction may be performed by practicing artificial ripening of the cataract by one method or another.

Schweigger,[6] in a paper published in 1890, was one of the first to advocate the extraction of unripe cataracts, and has asserted that he does not believe that it is necessary to cause an artificial ripening after the time when physiologic changes in the lens have done away with the act of accommodation; that is, toward the fifties and surely after the sixtieth year. He operates "all patients past the fiftieth year as soon as the senile cataract interferes greatly with the patient's vision, so that life ceases to be a pleasure to him, and he becomes unable to be self-sustaining, and the doctor may hope that by removal of the lens vision may be materially improved. It is immaterial whether a greater or less portion of the lens is still clear." This teaching of Schweigger, while not generally accepted and followed, has had the tendency to give many operators confidence in their ability to secure satisfactory results from the extraction of unripe cataracts, and as a result the practice is growing more and more in favor, with its attending benefits to that large class of unfortunate persons suffering from immature cataracts who otherwise would be compelled to go without useful vision for months and perhaps years while waiting for the cataract to become "ripe," and thus best suited to extraction. (Since writing this paper, Professor Hirschberg informs me that he advocated, prior to the publication of Schweigger's paper, the extraction of immature cataract, and his views on this subject, expressed before the Berlin Medical Society, were published prior to the appearance of Schweigger's paper in 1890.)

The principal objection to the extraction of immature cataract has been that, in the attempt to remove a lens not entirely opaque, more or less of the cortex remains which adheres to the capsule and is difficult, if not impossible, to remove without subjecting the eye to trauma which later gives rise to inflammatory reaction and jeopardizes the function of the eye, and if allowed to remain will either produce secondary cataract, with attending impairment of vision, or inflammatory reaction, with danger of damage to the function of the eye, or both.

Concerning the age at which the lens is sufficiently sclerosed to permit of its complete removal from the capsule, Schweigger[6] makes the following statement: "At sixty years of age the lens is hardened in its entirety, whether cataractous or not, and whether the cataract is complete or not. The cataract and the induration are phenomena absolutely different; the one is pathologic, the other physiologic. Thus, in persons of 60 years who have lost the faculty of accommodation, a cataract even incompletely developed may be removed without the opacities being reproduced, for it is certain that the lens can be removed entirely." To this statement I think we may take exceptions. Under the fiftieth year, or while there is still some accommodation present, the cortex of the lens still consists of a tenacious sticky mass, but I have frequently observed a soft tenacious cortex after the sixtieth year, and occasionally after the seventieth year, in lenses that were the seat of immature cataractous formation. While sclerosis may have progressed to that point where in some cases at sixty years, as Schweigger says, the lens may be easily extracted in its entirety, whether cataractous or not, generally speaking we are not warranted in assuming such a conclusion for every case, and the extraction of any unripe cataract carries with it the possibility of having to contend with soft cortical substance, with the chances of a lessened amount or none with increasing age of the patient.

With a reasonable certainty that an unripe cataract, except in a person of advanced age, is accompanied by more or less soft cortex, the advisability of attempting extraction becomes a question for serious consideration. In making a decision several factors must be taken into consideration. First, what is the state of vision in the fellow eye; second, how rapidly is the cataract progressing; third, how seriously inconvenienced will the patient be if he waits for maturity; and, fourth, what contraindications are there to the extraction of the cataract, even though immature.

Those ophthalmologists who possess an unduly ambitious desire to operate on the slightest provocation, and who favor extraction of immature cataract, may advise operation, no matter if the fellow eye has approximately perfect vision; but such advice is not good and should not be accepted. No extraction of an unripe cataract is warranted when the fellow eye has vision sufficient for the patient's needs, unless the first discernible signs of beginning cataract in the fellow eye warrants the belief that the increasing opacity will soon seriously interfere with vision and it is thought that extraction of the more pronounced cataractous lens will restore good sight before the failing vision in the fellow eye has had time to reach a stage where it will seriously inconvenience the patient. Even in such instances the needs of the patient, so far as earning a living is concerned, the general physical condition, the state of the eye as concerns irritation or swollen lens, and the progress of the opacity must all be taken into account before arriving at a final decision to operate. Particularly contraindicated is the extraction of a lens swollen by imbibition, attended with shallow anterior chamber and sluggish pupil from an irritated iris; for here, in addition to the difficulties of making a proper corneal section, must be considered the probability of the existence of a quantity of particularly tenacious soft cortical substance, the manipulations for the removal of which are almost sure to set up an inflammation of more or less severe character in the already irritated iris; and, furthermore, the swelling of the lens is an indication of rapid progress of maturity which it is unquestionably advisable to await in such case.

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[6] Extraction of Unripe Cataract, Berliner med. Gesselschaft, 1890. Hirschberg's Centralblatt.

With immature cataracts in both eyes, the advisability of operation depends on the rapidity of progress of the more advanced cataract, and the amount of inconvenience to which the patient will be subjected if maturity of the cataract is awaited. At times the ripening process proceeds very slowly, while in other instances it is rapid. The history of the case, giving approximate date of onset of failing vision, will in many cases serve to indicate the rapidity of progression, though in most instances it is advisable for the ophthalmic surgeon to determine the progress of opacification by repeated examinations during a period of from one to four months. If it is determined that the process of opacification is progressing rapidly, it certainly is advisable to await maturity of the cataract before attempting extraction, for it must be admitted that, all things considered, the chances for an easy and complete removal of the lens in its entirety, with a minimum amount of trauma and attainment of the best possible vision, are better if the cataract is mature.

In the rapidly progressing cases it is seldom that a person can not afford to wait for a reasonable amount of maturity before having extraction performed. Such patients should be made acquainted with the fact that in those rapidly progressing cases that are accompanied by swelling of the lens the difficulties of extraction are greater on account of the shallow anterior chamber and impossibility of making a proper corneal section, and the tenacious soft lens substance requires more manipulation to remove it, thus increasing the liability of postoperative inflammation. As a result of all this, with consequent slow recovery, no time is saved by having the operation early, even though the ultimate results are as satisfactory as they would be by waiting for practical maturity of the lens before consenting to extraction.

In those rapidly progressing cases in which there is no swelling of the lens and attending shallowness of the anterior chamber, the recommendation of operative interference should depend on uselessness of the other eye and extraordinary physical or mental conditions which make it advisable to hasten the recovery of vision, and in such instances I consider most persons who are unable to read Jaeger, No. 12, as proper subjects for operation.

In not a small proportion of cases the process of opacification is slow, while in some instances the cloudiness of the lens proceeds until useful vision has been lost, and then becomes practically stationary, with a portion of the lens still more or less transparent. Becker[7] describes a form of premature senile cataract in which "cloudiness develops in the nucleus between the fortieth and fiftieth year after the normal sclerosing process in the lens is far advanced. This cloudiness gradually extends into the transparent cortical substance and has a peculiar white, almost milky, color. This cataract is exceedingly slow in its development, but finally becomes a total cataract. The individuals show in their general appearance that their health has been disturbed for a long time. They are people who have been reduced by disease, excessive bodily exertion, many and difficult labors, material want, grief and care." Becker further states that, without in such cases being able to demonstrate a diseased condition of the nutritive fluids of the body, we may look on the general premature senility of the entire body as a cause of the failure to form the nucleus, which is a feature of a lens which becomes diseased in this manner.

Cortical cataracts are usually progressive, but frequently the progress is so slow that a long period intervenes between the time when cloudiness of the lens interferes with vision and the time when opacification is complete and the cataract may be said to be mature.

In these cases of slowly progressing cataracts of both eyes which may require months or even years to reach maturity, it is an unnecessary hardship to await natural maturity of the lens before adoption of measures for the restoration of vision, and a recognition of this fact led some operators to the adoption of the practice of artificial ripening of the cataract. Several methods have been recommended for hastening the process of ripening, among which may be mentioned simple division of the anterior capsule with a knife needle, iridectomy combined with some form of trituration of the lens, or paracentesis of the cornea combined with external massage.

In my own experience I have found that a preliminary iridectomy alone is usually sufficient to hasten artificial ripening of the cataract, though I doubt the propriety of generally subjecting the eye to the risks of two operations, including the preliminary iridectomy, either with or without trituration of the lens, and the subsequent extraction, when the same end may be secured with equally good results by the single operation of extraction. So far as the value of a ripening operation is concerned, I believe, as has been stated by Weeks,[8] "that the operation for hastening the maturation of the lens does not sufficiently increase the facility of removal of the cataract to warrant the extra risk and trouble to the patient."

The state of vision in slowly progressing senile cataracts of both eyes, which warrants operative interference, will vary in different individuals. In my judgment, when vision has been reduced so that ordinary type can no longer be read, both pleasure and business are suffering from the interference, and the deprivation, if long continued, usually has a more or less detrimental effect on the physical and mental condition of the individual. In such cases I do not hesitate if, aside from the semitransparency of the lenses, there are no contraindications, and the patient has been made acquainted with the possibilities as to secondary cataract requiring discission and mild postoperative inflammation, with delayed recovery. I do not expect to encounter any greater difficulty in extracting a lens that is one-third opaque than one that is two-thirds opaque, for in both instances about the same amount of manipulation of one kind or another is required to free the eye of soft lens material, and no more lens substance is apt to be left in the one case than in the other, all things being equal.

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[7] Zur Anatomie der Gesunden und Kranken Linse, 1883.

[8] The Journal A. M. A., Dec. 15, 1900.

The difficulties attending removal of the lens in its entirety have deterred many operators from attempting extraction of unripe cataracts, for no operator from choice will face certain dangers of iritis and secondary cataract which invariably follow if any considerable amount of soft lens substance is left in the eye; and every operator knows that efforts to tease out the cortical remains alone carry with them the possibilities of trauma, which may provoke irritation or possibly result in rupture of the zonule and loss of vitreous.

Successful results from the extraction of immature cataract must, therefore, come from the adoption of methods which make it possible to remove, at the time of operation, practically all the cortex, with a minimum amount of trauma and subsequent inflammatory reaction, and the employment of such postoperative treatment as will tend to limit the effects of inflammatory reaction and promote resorption of any retained cortical substance. In my judgment the operative essentials to bring about the result are: First, a large corneal section, embracing not less than two-fifths of the corneal circumference; second, an iridectomy with a fairly large coloboma extending to the ciliary border; third, a large opening in the capsule by two incisions at right angles to each other; fourth, gentle irrigation of the anterior chamber with a sterile normal salt solution, after the extraction of the nucleus, if much cortex remains; fifth, the early and free use of atropin, and, sixth, the use of dionin, after the corneal wound has closed, to promote resorption of lens débris.

The advantages of a large corneal section are embraced in the ease with which the hard nucleus is removed without undue manipulation of the eyeball, and the increased certainty with which the irrigating fluid and soft cortical material pass out without provoking irritation from damming up in the anterior chamber.

The coloboma from the iridectomy not only facilitates removal of the soft cortical substance by furnishing a sluice-way for its escape and averts secondary iris prolapse, but tends to prevent the development of postoperative glaucoma.

The reason for the large opening in the capsule is obvious, for, with an insufficient opening, which may not be enlarged by the escaping small hard nucleus, the collapsing capsule may retain within its folds considerable quantities of lens substance which it would be difficult to remove. These enclosed masses of lens substance when cut off from the aqueous by collapse of the capsule are not resorbed, but remain to form a white membranous cloudiness or secondary cataract. If the opening in the capsule is sufficiently large, the cortex remaining after the extraction of the nucleus, even when in considerable amount, will swell up and become resorbed. This swelling of the retained cortical substance, however, with the production of an iritis, which even the liberal use of atropin does not always control, is one of the complications which we should make an attempt to avoid, and indicates the necessity for the adoption of more effective means for the removal of the soft cortical substance at the time of the extraction than is accomplished by stroking and other manipulations ordinarily employed.

The most effective means for removing the cortical remains is irrigation of the anterior chamber. Several methods have been advocated, but the one preferred is that of Lippincott, in which a continuous stream is allowed to flow by gravity through a small specially constructed canula, into the anterior chamber, the force of the stream being properly regulated by the height at which the reservoir is held, and the flow being entirely under the control of the operator, who may stop or start the stream by the use of a suitable lever. To avoid trauma, only the tip of the canula should lie between the lips of the corneal wound, and the stream should have only such force as is given it by elevating the reservoir no higher than is necessary to establish a continuous current by gravity.

Until recently I have also used with great satisfaction the method advocated by Dr. Flemming Carrow, in which the anterior chamber is irrigated with a stream from a wash bottle designed something like an ordinary bulb atomizer and having a specially constructed tip for irrigation purposes. While excellent results may be secured with this apparatus when properly employed, the objections to it are that unless the operator employs unusual delicacy and steady pressure on the rubber bulb, the stream is apt to possess too much force, with consequent trauma to the tissues. Also, unless due care is observed, air is likely to be forced into the anterior chamber, and the bubbling, with its unpleasant sensations, cause the patient to make some unexpected move which may prove disastrous. The originator of the device, who has had a very large and very successful experience in cataract extraction, does not direct the stream directly into the anterior chamber, but allows it to flow across the lips of the corneal wound, thus creating a very gentle but continuous current through the anterior chamber, with the result that the bulk of the soft cortical lens substance is carried out.

Those who practice irrigation of the anterior chamber vary in their preference as to the solution to be used. Sterile water, boric-acid solution and physiologic salt solution are about equally employed. In my own practice physiologic salt solution is preferred as being less likely to produce irritation from its own qualities.

Irrigation, if it is to be accompanied by a minimum amount of irritation and yet be effective, should be carried out with the utmost delicacy. The stream should be continuous, but possess no more force than that obtained by gravity when the reservoir is just high enough to create a current; and less trauma is likely to result if the current is directed into the anterior chamber on a line with the corneal section. Prolonged irrigation should also be avoided, as it is entirely unnecessary and is apt to be attended with increased trauma. If the capsular opening is large, it is seldom that the bulk of the soft cortical substance is not removed, but, if not removed, prolonged irrigation is not warranted, as much of the remaining lens substance will be resorbed by the action of the aqueous, and if not resorbed had better be subsequently divided by a discission operation rather than removed by prolonged irrigation or other manipulations which increase the possibilities of trauma and resulting serious inflammatory reaction.

It must be admitted that, in spite of proper care exercised in the performance of this procedure, in nearly all of the cases more or less iritis is the rule rather than the exception. This is due to the slight trauma necessarily following the irrigation and the irritation produced by the swelling of the remaining soft lens substance. In the majority of instances this iritis produces no serious consequences if atropin is used early and continued until all signs of irritation have disappeared. In many cases the irritation of the iris is no more than accompanies the extraction of mature cataract, but it is well to anticipate it and to adopt the proper medical measures early in the progress of the case. It has become my practice to anticipate such trouble by using atropin at the time of the first dressing, 36 to 48 hours after the extraction.

A remedy that I have found of decided service in promoting resorption of lens débris following cataract extraction is dionin. This drug, as has been pointed out by Darier,[9] possesses decided lymphagogue properties, and further experience in its use to promote resorption of cortical remains warrants me in reiterating a statement which I have previously made[10] that "the remarkable results secured by dionin in clearing the pupillary space following cataract extraction has led to the belief that, with the more or less general employment of this drug, after cataract extraction, secondary operations will be lessened in number." It should be remembered, however, that some persons apparently do not react to dionin, and in such I have not been able to detect any favorable action in promoting resorption of lens débris, but it may be said in its favor that if it produced no favorable action it certainly has produced no unfavorable results.

Until the susceptibility of the patient to dionin has been determined it is best to begin with a 5 per cent. aqueous solution, and, owing to the active smarting produced, it is advisable to precede the application with an installation of cocain. Owing to the smarting, with involuntary tight closing of the eyelids, with attending pressure on the eyeball and the sneezing that is occasionally induced, it is also advisable to use dionin only after the corneal wound has been securely closed for a period of from five to seven days.

In susceptible persons dionin produces marked vascular injection, with edema and extravasation of lymph, and in my experience the more marked the reaction in this respect the more marked is the favorable action in promoting resorption of lens débris; in fact, the strength of the solution is increased to 10 per cent., or the pure powder is used, in an endeavor to produce such reaction in those who do not apparently respond to the usual effect of the drug. Unless there is decided reaction the applications are repeated from two to four times per day for a period of four days, at the end of which time a certain tolerance is established and no further beneficial effects may be expected until an interval of at least a week has elapsed. While there are a few cases in which this remedy seems to have no appreciable effect in promoting resorption of the cortical remains, in a larger number of cases the results secured in effecting a clearing of the pupillary space, even where a considerable quantity of cortical lens substance has remained, have been so strikingly favorable that I feel warranted in unhesitatingly recommending the employment of this measure as a routine practice after all cataract extractions. I am still further influenced in giving this recommendation because of the fact that dionin has a marked favorable action in the treatment of iritis, in promoting the absorption of exudates and increasing the effect of atropin; and, as iritis accompanying swelling cortical lens remains follows cataract extraction, there is double reason for the employment of dionin.

The extraction of immature senile cataract may be attended with more complications and less favorable immediate results than the extraction of mature cataract, but the final results, when the cases are properly handled, should compare favorably with the extraction of cataract in any stage. In the extraction of immature senile cataract in persons of any age I have learned to expect a certain amount of soft lens substance, but with a large opening in the capsule and the employment of irrigation the greater portion of the lens débris is removed, and what is not removed is generally resorbed either with or without the assistance of the action of dionin. Discissions, while necessary in a fair proportion of cases, are not, in my experience, so frequently required as formerly or before dionin came into favor as an agent to promote resorption of lens débris. Iritis, frequently seen, either produced by trauma at the time of the operation or subsequently by the action of the swelling lens substance remaining, is controlled by the early and free use of atropin.

Admitting that the immediate results from the extraction of immature senile cataract are not as good as in the extraction of mature senile cataract, on account of the greater possibility of having to contend with iritis and secondary cataract, it is nevertheless a fact that the ultimate results are equally as good, and this opinion is attested by many of the most prominent operators of the United States, whose views on this subject are appended to this paper. That the complications arising are no greater than those accompanying the extraction of hypermature cataracts, which form a considerable portion of the number of cataracts presented to the average operator for extraction, is also accepted as a fact, for in both classes of cases the development of an iritis and the formation of a secondary cataract are the rule rather than the exception. The slow recovery in a few cases, due to inflammatory reaction directly dependent on the effects of the operative procedures, while seemingly indicating that the operation has not been to the best interests of the patient, are not generally detrimental to the extent usually supposed; for under such measures as herein advocated the iritis usually completely subsides in from two to six weeks, soon after which, if required, the discission operation may be performed. Even with more protracted recovery the patient is usually favored with the restoration of vision much sooner than could possibly be expected had maturity of the cataract been awaited, and this at a time when the general health has not been impaired by the enforced inactivity and the mental disquietude occasioned by a prolonged period of waiting for complete opacification of the lens before extraction.

My personal experience in the extraction of immature senile cataract, while not large, has been very satisfactory. During the past four years, or the period during which I have followed the practice, I have extracted twenty-five more or less unripe senile lenses, and ten of the number have been operated on within the past fourteen months. In all the cases the ultimate vision has compared favorably with the vision obtained in the cases of mature cataract operated on either during the same period or before. In eight cases the vision was 20/20; in ten, 20/30; in two, 20/40; in three, 20/70, and in two, 20/200. Nine of the cases required secondary operations, and six should have had secondary operations, but for one reason or another did not have them. In all but two of the cases in which vision was under 20/20, there was secondary cataract, and, as some of those were lost sight of soon after the operation, it is possible that vision improved in course of time as a result of resorption of a greater amount of the lens débris. A striking feature of the eight cases having 20/20 vision was the fact that but three had a secondary operation, and the remaining five, which soon after the extraction gave evidence of requiring a secondary operation, obtained excellent results under the effect of dionin. Three of the latter cases were under 60, and one but a little over 50 years of age. Practically all of the cases had irrigation of the anterior chamber and few escaped at least a mild iritis, though the inflammatory action had nothing to do with the failure to secure good vision in any of the cases. All of the cases had the combined operation. In only three cases was preliminary iridectomy performed, and in all three, following the extraction, a subsequent operation for secondary cataract was required. All of the cases were what would be called uncomplicated, in that they had no marked choroidal or vitreous changes, swelling of the lens, or external evidences of disease. In all of the cases vision had been reduced below the patient's requirements.

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[9] Ocular Therapeutics, 1903.

[10] Ophthalmic Record, August, 1904.

With a view of obtaining information from other operators as to the practice of extracting immature senile cataract, the following inquiry was sent to a large number of prominent ophthalmologists: (A) Do you extract uncomplicated immature senile cataracts? If so, what is your rule as to (1) Age of patient? (2) State of vision of eye to be operated on? (3) State of vision of fellow eye? (4) Form of operation to be performed, simple or combined, or preliminary iridectomy and extraction later? (5) Irrigation of anterior chamber, and, if employed, what solution used? (6) Use of dionin to promote resorption of débris? (B) Generally speaking, what have been your results in extracting uncomplicated immature senile cataracts as compared to extraction of uncomplicated mature senile cataracts: (1) As to vision obtained? (2) As to development of secondary cataract requiring operation? (3) As to inflammatory reaction from operation? (C) What difficulties have you encountered in extracting immature senile cataracts? (D) What objection, if any, have you to extraction of immature senile cataracts?

While some of the questions were not answered even in a general way and others were answered in such manner as to admit of no definite interpretation, I find by analyzing the reports containing specific answers that out of 65 who responded, 25 have no hesitation in attempting extraction of uncomplicated immature senile cataract, 22 perform the operation with some hesitancy but apparently not from choice, 9 have serious objections to the practice, but in certain apparently urgent conditions take what they term the "risk" of the operation, and 8 do not extract immature senile cataracts at all, because they consider the final results bad in the majority of instances.

All who operate have as a condition of the operation that the eye to be operated shall have sufficient failure of vision to interfere seriously with the pleasures and pursuits of the patient, and an equal failure or complete loss of vision in the fellow-eye. In no instance is an operation advocated when there is vision in the better eye sufficient for the patient's needs.

In considering the advisability of operating, 32 do not consider the age, 3 place the age limit at 40 years, 3 at 50 years, 6 at 55 years, and 7 at 60 years. In nearly all instances, the form of operation selected is reported as varying with conditions presented, but the first choice is given as preliminary iridectomy by 27, combined operation by 18, and simple extraction by 10. Some say, and presumably all intend to convey the idea, that preliminary iridectomy is performed with the idea of artificially hastening the opacification of the lens before extraction. In a few instances mention is made of trituration of the lens at the time the preliminary iridectomy is performed.

Thirty practice irrigation as a routine measure or reserve it for those cases in which the soft lens substance does not come away easily by usual manipulations, and with four exceptions physiologic salt solution is the solution preferred.

Nineteen use dionin to promote resorption of lens débris, and out of this number nine report good results, the others reporting doubtful results or not referring to effect.

While nearly all report that secondary cataracts and mild postoperative inflammations, with slow recovery, are more frequent than in extraction of mature cataracts, they almost without exception report as favorable ultimate visual results as in mature cases.

It is quite possible that with an improved technic, including many if not all of the essentials herein advocated, that the development of secondary cataracts and postoperative inflammations will be reduced to the point where they will not occur more often than after extraction of mature cataracts. But even if this were so, the results obtained by the operators herein reported, as well as by myself, warrant me in recommending the extraction of uncomplicated immature senile cataract, irrespective of age, in all those persons who, on account of the clouding of the lens, have vision reduced to such a degree that the individual can not follow the ordinary vocations of life.

OPINIONS OF PROMINENT OPERATORS ON EXTRACTION OF UNCOMPLICATED IMMATURE SENILE CATARACT.

Herman Knapp, New York City: Yes. Uncomplicated, unripe cataracts can be operated on with a good prospect of success when the general and ocular conditions are favorable and a large corneal section can be made.

F. C. Hotz, Chicago: The question of extraction of unripe cataract can arise only if the vision of both eyes is so much impaired that the patient can not attend to his business any longer. As long as he enjoys fair vision in one eye, the operation is not warranted. If both eyes are affected I am guided by the condition of the lens whether to operate immediately. If the cataract presents an opaque nucleus enveloped in a cortex which, though not completely opaque, is sufficiently so that the pupil shows only a faint red reflex, I operate, and I find these cases yield generally as good results as the perfectly mature cataracts. But if the cortex shows sections of almost perfect transparency, I do not regard extraction advisable, because the transparent substance can not be gotten out cleanly, even by irrigation. and its subsequent swelling causes complications in the healing, iritis and dense secondary cataract. As in these lenses, the opacification usually progresses rapidly, I think it is wiser to let the patient wait a few months than to take any chances. But should the patient insist on having something done at once, I perform a preliminary iridectomy, and massage the lens to hasten the process of opacification. On the other hand, there is a kind of immature cataract, and I see them often, which I extract without hesitation, though the vision may be 20/100 or better and the ophthalmoscope shows good red reflex. These lenses show a rather uniform diffuse haziness without distinct nucleus, vary little in the course of a year, and never become completely opaque. When extracted, they come out as one semi-translucent yellow cake; there is no cleansing necessary; the pupil appears perfectly clear and black; and the results are excellent; in fact. I am almost inclined to say better than after extraction of the ordinary mature cataract.

John E. Weeks, New York City: Yes, in persons more than 55 years as a rule, who are unable to read ordinary primer type with the eye to be operated on and vision in fellow eye is lost or reduced so that the patient is unable to follow vocation. Preliminary iridectomy performed in many cases, combined operation in some, simple operation in a few. Irrigation with normal saline solution if any cortical lens substance remains. Results as compared with mature cases, very little difference. Degree of vision, taking all cases, perhaps a little less. Maximum vision not reached so soon. Vision 20/20 in about 50 per cent. of the cases. Secondary cataracts more freqeunt than in extraction of uncomplicated mature cataracts. Seldom have subsequent inflammatory reaction. Cortex more adherent to capsule than in mature, but not more so than in hypermature. If lens is shrunken, nucleus amber colored, anterior chamber as deep or deeper than normal, I do not hesitate to operate. If lens is large, asbestos striped and anterior chamber shallow, I hesitate to operate. Maturity does not always mean complete opacification of the lens substance. I have abandoned the ripening operation for the reason that the facility of removal is not sufficiently increased to warrant the extra risk and trouble to the patient. Whenever in the development of cataract the vision is reduced to such a degree that the individual can not follow the ordinary vocation of life, provided there is any reason for not waiting until the cataract is matured, I do not hesitate to advise operation.

G. E. de Schweinitz, Philadelphia: I may say in general terms that I very frequently extract immature cataract, but that I do not extract it if the lens is in the stage of swelling, which I believe to be distinctly a contraindication, especially if associated with the swelling there is much shallowing of the anterior chamber. I do not believe that it is at all necessary to watch for what we used to call full maturity, especially if the patient is past the age of 55 or 60. I always make an iridectomy if I extract an unripe cataract, and preferably a preliminary iridectomy, which I believe to be far the safest way of dealing with these cases. I do not know how many unripe cataracts I have extracted, but the number is large. I have never had a serious disaster, although I have been obliged on some occasions to make more than one discission subsequently to get rid of cortical remnants. My experience with washing out the anterior chamber is a very limited one, as at one time I was very positive that it was a bad procedure. I have begun to change my views, however, since seeing some very excellent results in the hands of some of my friends, and I think that hereafter, should I meet with cases in which it was difficult to remove remnants in extractions of unripe cataracts, I would certainly use irrigation. In general terms, I would say that my operations for extracting unripe cataracts have been quite as good as those which I obtained after extracting ripe cataract, although the procedure has been more trouble in some instances. I believe it is better to extract an unripe cataract than it is to do a ripening operation.

Charles H. May, New York City: Yes, in persons of any age if the vision in each eye is sufficiently reduced to interfere with the patient's usual occupation. The combined operation is generally preferred, but if the cataract occurs in an individual in whom the other eye is blind, preliminary iridectomy is performed. Irrigation with physiologic saline solution is employed if cortex is left. Dionin not used. Results compare very favorably in the end with results in extraction of mature cataracts. Secondary cataract relatively more frequent, and as a rule rather more inflammatory reaction. No special difficulties encountered in extraction of immature cataract and no objections to the practice.

Edward Jackson, Denver: Yes, in persons of any age if the case presents the visual need, i. e., vision in each eye reduced so as to interfere with patient's usual occupation. The simple operation preferred, but in certain cases the combined. Irrigation rarely employed, but when used, physiologic salt or boric-acid solutions preferred. Have not tried dionin. Results as satisfactory as in extraction of mature cataract and equally good vision ultimately. Secondary cataract more frequent, but by no means constant. No greater inflammatory reaction. Difficulties encountered are those connected with removal of cortex. My only objection to extraction of immature senile cataract is that the immediate result is not so good. This does not deter me from operating in suitable cases.

Charles H. Williams, Boston: Yes, in persons of any age having good or fair general health when vision in eye to be operated on is less than 1/10, and vision of fellow eye is reduced so that the patient can not do necessary work. Simple extraction preferred. Employ irrigation with one-half of 1 per cent. salt solution if much cortex is left. Do not use dionin. Results about the same as in extraction of mature cataract. Results sometime depend more on the general health and disposition of the patient than on the question of maturity of the cataract. Secondary cataract occurs more frequently than in mature cataract. Inflammatory reaction perhaps a little more frequent. Ultimate results as good as in extraction of mature cataracts.

H. D. Bruns, New Orleans: I sometimes extract immature cataracts in persons of any age if there are no contraindications in the general health of the patient or the condition of the eye to be operated on. State of vision must be inability to read ordinary print with eye to be operated on and an equal disability in fellow eye. Operation preferred depends on circumstances. Unless there is some reason in the disposition of the patient, or unfavorable local conditions (rigidity of pupil, elevated tension, corneal opacities, etc., etc.), I always do simple extraction. If the section has been too small, iris does not reduce well, and is bruised by manipulation, much cortex is left behind, or much opaque capsule, patient restless and causing prolapse after one or two successful reductions, I at once proceed to do iridectomy. If at end of forty to forty-eight hours, when dressing is removed for first time, there is prolapse, I do iridectomy then. All these reasons, circumstances and conditions incline me to iridectomy much more in case of immature than mature cataracts. I use irrigation sometimes, but prefer to do without it, and without anything that increases the amount of trauma and the number of instruments introduced into the eye. I do not use dionin. Results are practically the same as in mature cases. Have seen no striking difference in the ultimate vision. Nearly always there is denser secondary cataract, and usually more inflammatory reaction, owing to greater traumatism in getting away cortex and denser contracting secondary cataract. Difficulties encountered are those connected with removal of cortical lens substance left behind when nucleus delivered. I have no objection to the practice if indicated, i. e., patient so blind in both eyes as to be unable to read or amuse himself with near-work. So long as the patient can read and write and pursue ordinary vocation with one eye I decline to do any extraction in senile cataract. Patient often dies before operation is necessary. Cataract extraction is surely a major operation. The shock is more than it seems the patient or we anticipate. I am convinced that it often hastens the breakdown and death of old people. Slight immaturity I totally disregard. When patient has but one eye I always do preliminary iridectomy, whether cataract is mature or not. In such cases I would wait for a greater degree of maturity than where the patient had both eyes operable, as the patient should have the best possible chances for the restoration of vision in his only eye.

Vard H. Hulen, San Francisco: Yes, in persons of any age. No rule, but prefer older patients. Vision of patient must be so poor in each eye as to interfere with ordinary pursuits, and cataracts of very slow maturation. Prefer the combined operation, but sometimes do simple extraction. Practice irrigation of the anterior chamber with normal saline solution if much lens matter remains. I have not tried dionin. Results about the same as in extraction of mature cataract and equally good vision. Secondary operations more often necessary than following extraction of mature cataracts, and expect inflammatory reaction more often. No special difficulties encountered, but more manipulation required in removing soft lens substance. Have no objections to the practice when patient's sight is so reduced as to incapacitate individual.

Frank C. Todd, Minneapolis: I frequently extract immature cataracts, and am not governed so much by the age of the patient as by other conditions; i. e., the slow progress, with poor vision in the fellow eye. When the vision interferes with going about, or in a younger patient who would otherwise be able to follow some vocation, I extract immature cataracts or do a trituration, providing the vision in the fellow eye is poor enough to interfere with going about or with occupation. I prefer, as a rule, the combined operation, or preliminary iridectomy with trituration, and extraction later. I have had no experience with either irrigation of the anterior chamber or the use of dionin. As compared to the extraction of mature cataract, my results have been equally as good. There are a large percentage of secondary cataracts, except when trituration has been performed. The inflammatory reaction is not more than after the extraction of mature cataracts, though atropin should be used for a longer period or until the soft matter has had time for absorption. In general, I would say where a cataract has made good progress in ripening, I wait until it is mature or nearly mature; but when progress is slow and the patient is incapacitated by poor vision in both eyes, I extract the one that is most mature, and in case it is very immature and very slow in maturing I do a trituration. I am aware of the fact that this operation of trituration is frowned on by many, but I am convinced that it has its place, and I am further convinced that it makes a difference as to how the operation is done. When properly done it is better than to extract a very immature cataract, and after extracting an artificially ripened cataract I have never had to do a needling or secondary cataract operation.

J. A. White, Richmond, Va.: Yes, but only in cases of very slow development. No rule as to age of patient. I never operate as long as patient has good vision in one eye, but when vision is no longer useful in either eye, and the cataracts have been long developing, I operate whether they are mature or immature. Prefer preliminary iridectomy, or iridectomy at the time of extraction. Sometimes use irrigation with normal salt solution. Have never tried dionin. Results nearly the same as in extraction of a mature cataract, and vision secured practically the same. Secondary cataract or cloudy capsule is more frequent, and iritis more common. No difficulties encountered, except that the cortex is more sticky, especially under 60 years of age, and is harder to remove. Do not object to extraction of immature cataract if the other eye is failing rapidly, otherwise prefer to wait. I sometimes, however, under 60 years of age, hasten maturity by triturating the lens. I have removed about 600 senile cataracts, and among them a number of immature ones, but can not say exactly how many.

William Zentmayer, Philadelphia: Yes. Age not a factor. Am guided by circumstances of the patient as to vision at time of operation. If necessary to earn a livelihood, would operate as soon as the patient is incapacitated for that work. If independent, would advise him to await maturity. Prefer either combined operation, or preliminary iridectomy and extraction later, depending on the amount of unripe cortex. Irrigation of the anterior chamber with physiologic salt solution employed occasionally, but not invariably. Dionin used to promote absorption of débris. Results, so far as vision is concerned, about as good as in mature cataract. Secondary cataracts more frequent and inflammatory reaction more marked. The difficulties encountered are principally those connected with removal of the soft cortical matter. The objection to extraction of immature cataract is that it does not afford the patient the best condition for a successful result, for the reason that the eye is usually subjected to a larger number of operations with attending risks.

Swan M. Burnett, Washington: I prefer not to operate on an immature cataract, as I think the risk is greater, but if both eyes are affected and total blindness in both eyes is near, I take the chances to gain one eye for use. I seldom do an iridectomy for any kind of extraction, and have not tried irrigation of the anterior chamber. I have had some experience with the use of dionin to promote resorption of débris following cataract extraction and am pleased with the results. As compared to extraction of mature cataract, the chances for success are not so great, and the healing process is longer, with greater liability to complicating inflammation. My objection to the extraction of immature senile cataract is, therefore, the greater danger from postoperative complications.

Leartus Connor, Detroit: Yes. Age is not considered a factor, only the reparative power. Vision must be useless for any work. Prefer preliminary iridectomy and extraction later, though sometimes do the combined operation. Irrigation with weak boracic-acid solution sometimes employed, and dionin used to promote resorption of any lens débris remaining. Results not greatly different than in mature cataract. Secondary cataract not much more frequent, but slightly more inflammatory reaction. There is nearly always greater difficulty in removal of all clear lens. The objection to extraction of immature senile cataract is that it is impossible to know when all of the cortical matter has been removed, and unless removed there is apt to be greater reaction and perhaps the development of secondary cataract requiring further operative attention. This does not deter me from operating in suitable cases.

F. B. Eaton, San Francisco: I have records of the extraction of a number of traumatic cataracts in patients 40 and above, in which the conditions were about the same as in an immature senile cataract, and the principle of treatment essentially the same. The combined operation was performed, with irrigation of the anterior chamber with normal salt solution for the removal of soft cortical material. For irrigation, I have used a device of my own, consisting of a piece of small glass tubing with soft rubber bulb at the end, the nozzle being appropriately tapered. I irrigate the anterior chamber freely, or until the pupil is perfectly black. I have never had a bad result which I thought could be attributed to the irrigation, and this is probably because the nozzle is so large that it produces a gaping of the wound, thus preventing the pressure of the fluid in the anterior chamber. I have not tried the use of dionin, but believe it indicated in certain cases. My objection to the extraction of immature cataract is that there is increased risk from inflammatory reaction and secondary cataract.

William H. Wilder, Chicago: Yes. Age is not a consideration. Vision must be so low as to prevent following occupation. Usually perform preliminary iridectomy, but sometimes the combined operation. Rarely use irrigation of the anterior chamber. Have used dionin to promote absorption of débris, and consider it entirely proper. Results not quite so satisfactory as in mature cases, for not so good vision recovered and usually a secondary operation is necessary. Iritis is also more common as a result of swelling cortical remains. The cortex comes away with difficulty, and what is left is not always readily absorbed. I would not hesitate to operate on immature cataract if the sight of both eyes is affected to the degree of helplessness. If the patient has one good eye I should advise waiting for the cataract to mature, or become nearly mature, and would content myself with a preliminary iridectomy.

C. R. Holmes, Cincinnati: Yes, in persons over 40, having vision 50 per cent. or less in both eyes, or 50 per cent. in the one eye, the other being blind or at least useless. Prefer combined operation, or preliminary iridectomy and extraction later in certain cases. I do not use irrigation, and have not tried dionin. Final results as satisfactory and vision as good as in extraction of mature cataract, though secondary cataracts requiring operation are more frequent, and there is usually slightly more postoperative inflammatory reaction. Have encountered no particular difficulties, but there is more soft cortical substance to be removed than in a mature cataract. Do not object to performing the operation in proper cases.

W. C. Posey, Philadelphia: I believe that immaturity of a lens is no contraindication for its extraction, my rule being to remove the ripest lens in all cases of cataract, irrespective of age, as soon as vision is so low in the best eye that the patient is unable to get about or perform the ordinary duties of life—in other words, when the test-cards show the vision in the best eye to be reduced to about 3/60. Under such circumstances I do one of three things, according to the circumstances of each case: First, a ripening operation; second, a preliminary iridectomy; third, extraction with iridectomy. If the most affected lens is very unripe, I open the anterior chamber and triturate the anterior capsule of the lens directly, removing the lens at the expiration of a few days or several weeks, according to the effect of the operation in ripening the lens. If there is no need for haste, preliminary iridectomy is done, it being found that the performance of this operation frequently aids in the ripening process as well as facilitating in the removal of the lens later. If a ripening operation or a preliminary iridectomy is not indicated, the lens is removed by the combined operation, the simple operation being reserved for mature cases only. After the removal of an immature lens the anterior chamber is frequently irrigated with a McKeown irrigator. Dionin in the strength of 4 to 8 per cent. has been found of value in promoting absorption of the débris, and has been used in many cases during the past year. I am convinced that my results in operating on immature cataracts in the manner described have been fully as good as those on mature lenses. I should say that fully 80 per cent. of the cases obtained practically full visual acuity, but I think a discission for secondary cataract was required in at least 70 per cent. of the cases. Inflammatory reaction has followed the operation in many instances, but not oftener I should say than after the removal of a mature lens. I know of no difficulties or objections to the removal of an immature lens. If possible, I think it best to avoid operating in the stage of greatest swelling, as in such cases the cortex shows a greater tendency to adhere to the capsule than when the cataract has proceeded further toward maturity.

E. E. Holt, Portland, Maine: Yes, in persons above 50 years whose vision has been so reduced that they are unable to count fingers. Formerly I did a preliminary iridectomy or the combined operation, but now do simple extraction. Irrigation used when thought necessary for the removal of soft cortical material, and dionin also used to promote resorption of any lens substance remaining. Final results good and vision not different than following extraction of mature cataracts. Do not believe that there have been any more secondary cataracts, or that I have had more secondary reaction than occurs with mature cases. In some instances the lens was more difficult to start out of the capsule. I have no serious objections to the extraction of immature senile cataract, and am willing to abide by the decision of the patient when it is made after due consideration of the facts. I do not remember of a single instance in which the patient or I regret that the operation was performed.

Robert L. Randolph, Baltimore: Yes, in persons over 60 who have loss of reading power. Perform combined operation always, and some of my best results followed preliminary iridectomy. Do not use irrigation or dionin. Ultimate results satisfactory; in fact, I do not recall a failure. Final vision about the same as in extraction of mature cataract. In nearly every case there was secondary cataract requiring discission, and a mild iritis in every case. I do not object to performing the operation in such cases as mentioned.

S. D. Risley, Philadelphia: I believe that while opacity of the lens is a disease of advanced life, it does not in all probability depend on senile change, but is originated in local pathologic states involving the nutrition of the eye itself; that hence in the stage of incipiency it is amenable to treatment by such measures as are calculated to remove the choroidal disease on which it depends; that if treatment fails to arrest the progressive degeneration in the lens, by virtue of the treatment adopted, the eye will be in a better condition to submit to the trials of operative interference. I never attempt extraction by the simple method in a dark gray or amber-colored homogenic lens that has ripened slowly, or on one that is translucent. In such cases secondary capsulotomies are almost invariably required, and there is a tendency to an inflammatory reaction from the slight traumatism. In these cases a preliminary iridectomy is performed, and from four to six weeks later the extraction. If after delivery masses of gray cortex remain, either free or adhering to the capsule, their removal by irrigation by a sufficiently free employment of a warm salt solution is preferable to the introduction of a spoon or considerable rough manipulation for its extrusion. Secondary capsulotomies are almost without exception required in these cases. If inflammatory reaction follow without evidence of infection, the great liability to local manifestations in those of rheumatic or gouty diathesis should be borne in mind as indicating the general therapeutic measures to be adopted. The value of salicylic acid in these cases I have many times seen demonstrated.

Flemming Carrow, Detroit: Yes, in persons of any age when reduction in vision prevents transaction of ordinary business. Do the combined operation in nearly every case. I always irrigate with a device of my own, using saturated solution of boracic acid, whenever any lens substance is left in the anterior chamber. I do not use dionin. Results as satisfactory and vision secured is as good as in extraction of mature cataract. About 50 per cent. of the cases require a discission of secondary cataract, and the same percentage of cases have postoperative inflammation. I do not object in the least to extraction of immature cataract under conditions mentioned. I am forced to express the opinion that any method of irrigating the anterior chamber after cataract extraction is productive of iritis unless used in the most delicate manner. This I state with great positiveness; but with a lot of lens débris left in the anterior chamber which can not be removed by spoon, stroking the cornea or any other maniplation, irrigation seems the best procedure for accomplishing the desired result. This applies to cases of hypermature cataract as well as those which are immature. I know that I am stating it properly when I say that the results are just as good if the senile cataract is removed while the patient is still able to read Jaeger No. 14 or Snellin 20/200. A man with this vision is practically put out of business, and there is no use waiting. This is not stated on the experience of ten or twenty cases, but on hundreds. I not only operate on these cases now and then, but it is my rule. I have operated on fourteen cases recently, eleven of which were immature, and the results were better in the immature cases than in the three which were mature. I do, however, expect a little postoperative iritis, which is probably due to irrigation of the anterior chamber. This, however, does not interfere with good results if atropin is early and persistently used.

M. H. Post, St. Louis: Yes, in persons of any age when cataracts reduce vision so that magazine type can not be read. Combined operation preferred. I do not irrigate the anterior chamber, and have not tried dionin. Ultimate results as good as in extraction of mature cataract. In my experience secondary cataracts are no more frequent than in mature cases, though there is possibly a little more inflammatory reaction. No objections to the operation if state of vision warrants interference.

J. M. Ray, Louisville: Yes. Age not considered if patient is in good general health. Would operate as soon as the patient is unable to follow vocation. Combined operation performed, but sometimes a preliminary iridectomy. Irrigation with normal saline solution when necessary for the removal of soft lens substance. Dionin not used in this class of cases. No greater reaction than in mature. No difficulties beyond leaving too much soft lens substance in the anterior chamber which takes a long time to absorb, but which does absorb without trouble in time. Prefer to have an opaque lens, but have no great objection, in suitable cases, to removal of a semitransparent lens.

Alvin A. Hubbell, Buffalo: Yes, in persons over 55, with vision in eye to be operated on 10/60 and vision in fellow eye nearly as poor. Usually perform preliminary iridectomy, followed by extraction later. Employ irrigation when there is much soft cortex, using sterile normal salt solution and Lippincott irrigator. Do not use dionin. Results much the same as in mature cases with vision good in fellow eye never operate on the cataract. Prefer more frequent, and a little more reaction in a small proportion of cases. No particular objection to the practice. There is a little more danger of iritis.

G. C. Savage, Nashville: Yes, and regardless of age, other conditions being favorable, when vision is too low to be useful. When vision good in fellow eye never operate on the cataract. Prefer combined operation. I never irrigate and I never use dionin in this class of cases. Results just as good as in mature cases with vision from 20/50 to 20/20, greater number about 20/30 finally. In nearly all cases I do a secondary operation in from one to twelve months. Only occasionally is there any reaction. Have lost only one eye from secondary operation. Have no objection whatever to practice of extraction of immature cataract.

J. H. Claiborne, New York City: Yes, age not considered, provided patient in good condition. Vision in eye to be operated on, fingers at 1 foot to 20 feet. Vision in other eye not useful. Combined operation performed. As a rule, do not use irrigation, but when employed use boric acid or normal saline. Do not use dionin. Results not quite so good as in mature cases. Useful vision, but not so good as in mature cases. Secondary cataracts in nearly all cases, but no more reaction than usual in any extraction. More difficulty in removal of the cortex that remains. Prefer to wait unless the patient is impatient or the conditions of his life demand extraction. Best results are obtained in sclerosed immature cataracts.

C. A. Veasey, Philadelphia: Yes, in persons over 55 years of age approximately, if patient is in good health, and when vision in eye to be operated is reduced so as to make it difficult for patient to get around, and there is advancing opacity of lens in fellow eye. Combined operation performed. If one eye has been lost, always a preliminary iridectomy. I seldom irrigate; if I do I use normal saline solution. Had little experience with dionin, but in three cases it certainly seemed to assist. Results as good as in mature cases, with equally good vision. A large percentage of my cases required discission of capsule, but so do mature cases. Postoperative inflammation not frequent if lens matter is removed by gentle manipulation. Practically no more difficulties attending extraction than in mature cases, providing cortex is removed by stroking cornea through closed lid or in rare cases removed by irrigation. Have no objections to operation. Have been doing it for ten years.

H. F. Hansell, Philadelphia: Yes, in patients 55 and over who have lost vision in both eyes for pleasure and business. The order of preference in the form of operation to be performed is: First, preliminary iridectomy, with extraction later; second, extraction with the combined operation; and third, simple extraction. Various circumstances and conditions guide me in the selection of the operation. Irrigation when employed is with normal salt solution. Dionin is not used. Generally speaking, the results in extracting immature senile cataracts have been equally as good in every respect as the results in extraction of mature senile cataracts. Secondary cataracts requiring operation are present in perhaps 90 to 95 per cent. of the cases. There is also a greater tendency to iritis unless preliminary iridectomy has been done. The difficulties in extracting an immature cataract are those concerned in the removal of all of the lens. I have no objection to the extraction of immature senile cataracts if loss of vision warrants the operation.

Würdemann & Black, Milwaukee: Yes, in patients over 45 whose vision in both eyes is below 6/60. Preliminary iridectomy and secondary extraction is preferred, and the anterior chamber is irrigated with normal salt solution. Dionin to promote absorption of débris is used in powder form. Results as satisfactory as in the extraction of mature cataracts. About 50 per cent. of our cases require secondary operations, and about the same number exhibit inflammatory reaction. Extraction of immature lenses usually requires larger corneal incision, and it is more difficult to complete the toilet properly. There is also a seeming greater predisposition to glaucoma following these operations. We have no objection to the extraction of immature cataracts when the vision is reduced as stated.

J. E. Colburn, Chicago: Yes, in patients over 60 with vision reduced below the patient's needs in both eyes. Have operated successfully at 48, 51 and 54. The form of operation to be performed depends on conditions presented. Sometimes preliminary iridectomy, sometimes the combined operation, and occasionally simple extraction. Irrigation of the anterior chamber is not employed, but dionin has been used in some of the later cases. The results in the extraction of immature cataracts have been as good as in the mature cataracts, other conditions being the same. Secondary cataracts are frequent, though inflammatory reaction from the operation is no more frequent than in the mature cases. No particular difficulties have been encountered, but it is important that the opening in the capsule be carefully and freely made. I have no objections to the operation other than those that would hold in any other form of extraction at any time.

J. T. Carpenter, Philadelphia: Yes, in persons past 50 years of age, whose vision in both eyes has been reduced so as to interfere with vocation. Preliminary iridectomy is always performed, usually with trituration of the lens. Irrigation never used except such as occurs with the use of the ordinary dropper and normal saline solution. Believe that dionin is useful in promoting absorption of the débris. Results are rather less favorable in extraction of immature cataracts than in the mature. Operations for secondary cataracts are almost invariably necessary, while iritis is much more frequent than in the mature cases. The difficulties encountered in the operation are the failure to get rid of the transparent sticky cortex. Objections to the operation are that there are greater difficulties connected with the operation, and a greater risk of inflammatory sequelæ. These, however, should not deter one from operating when vision has become so poor as to prevent the patient from getting around easily.

J. L. Thompson, Indianapolis: I do not like to operate on immature cataract if I can possibly put the patient off, but have been compelled to do so in a number of cases on account of the impatience of many of my patients who have become tired of waiting from year to year. In the cases of nuclear cataract in elderly persons, I extract without an iridectomy if the pupil dilates nicely, but in those which do not, I make a small iridectomy. I find that I can press out more of the cortical substance when an iridectomy is made than I can in simple extraction. The pupils look clear immediately after the operation, and moderately so at the first dressing, but soon begin to look hazy, and in most instances months elapse before the pupil clears up. I never now resort to any ripening process except in complicated and doubtful ones, when I make a preliminary iridectomy at least two months beforehand. In these cases the lens generally ripens of itself in a very few weeks without any further interference. Occasionally in these cases I have seen an acuity of vision of 20/20, but that is rare, even though a beautiful clear central pupil was obtained. My experience teaches me that a preliminary iridectomy is the safest of all procedures for ripening the lens, even though the capsule has not been touched. I used to irrigate the anterior chamber, but have abandoned the practice, as I did not find much benefit therefrom. I have had no experience with dionin. I have not found inflammatory reaction after the extraction of immature cataracts more than in cases of ripe cataract. The only objection I have found to operations of this kind is the great length of time it takes for the eye to clear up. I have had cases last nine months, supposing that the operation on the capsule would have to be made, but as the patient could see to go about with the other eye I put the operation off from time to time, dreading as I do secondary operations after extraction, when to my surprise the patient would later come in smiling and with the exclamation "I can see," and on examination I have found a perfectly clear pupil.

A. R. Baker, Cleveland: Yes, in those of any age when useful vision in both eyes has been lost, and the operation is not otherwise contraindicated. Preliminary iridectomy is always preferred. Neither irrigation nor dionin have been used. Results have been almost as good as in mature cases, but secondary operations are more frequent. Inflammatory reaction is no greater than in the mature cases. No special difficulties have been encountered, and I have no objection to the operation.

Robert Sattler, Cincinnati: I make it a rule from which I rarely deviate not to extract immature cataract so long as the fellow eye has a fair degree of vision. I do not hesitate, however, if the fellow eye is defective, and there is an advance of the amblyopia, to do the operation with a preliminary iridectomy. Irrigation is not used, and I have had no experience with dionin. As compared to extraction of mature cataracts, the results are equally favorable, though ultimate good vision requires discission of secondary cataracts. I have no objection to the operation if the other eye is lost and functional examination and health of patient offers no contraindications.

Eugene Smith, Detroit: Yes, in persons 65 and upward whose vision in the eye to be operated has been reduced to counting of fingers, and vision in the fellow eye is useless or rapidly becoming so. The combined operation is preferred, though in suitable cases the simple operation is performed. Irrigation is not practiced, and experience in the use of dionin is too limited to pass an opinion as to its efficacy. Results as compared to mature cases are about the same, though secondary cataracts requiring operation are more frequent, as also inflammatory reaction from the operation. Some cortex usually remains, but this is usually absorbed in the course of time. I have no objection to extraction of immature lenses in suitable cases.

Oscar Dodd, Chicago: Yes, in persons of any age when the vision in both eyes gets so low that business is interfered with. Preliminary iridectomy is preferred, but in many the combined operation is performed. Occasionally in selected cases simple extraction is done. Irrigation of the anterior chamber is not practiced, and while dionin has been used, its effects in my practice have been questionable. Results as compared to mature cataracts are equally good, though secondary cataract requiring operation is more frequent, and inflammatory reaction is also usually greater. Operation in these cases is more difficult, because it is hard to remove all of the soft cortex. I have no particular objections to the operation, but expect a longer time in obtaining satisfactory results.

Charles W. Kollock, Charleston, S. C.: Yes, in patients of any age in whom vision in both eyes has been sufficiently impaired so as to prevent going about, attention to business, or to seriously affect the nervous system. Preliminary iridectomy and extraction later is preferred, but the form of operation selected is the one that in each individual case seems best for obtaining good results. Irrigation of the anterior chamber is not practiced. Have had no experience with dionin. Results as compared to extraction of mature cataracts are satisfactory. Secondary cataracts requiring operation are not more frequent in my experience, though inflammatory reaction is probably a little greater. I have no particular objection to the operation.

Mark D. Stevenson, Akron, Ohio: Yes, in patients of any age, and particularly those over 55 when there is need of the operation to restore useful vision. In those over 55 the vision in each eye should be reduced below 6/60. The combined operation is preferred, although occasionally a preliminary iridectomy is done. Irrigation of the anterior chamber is seldom practiced, but if so sterile water or physiologic salt solutions are employed. Have had no experience in the use of dionin. Results have been just as good as in extraction of mature cataracts, though secondary cataracts requiring operation are more frequent, and inflammatory reaction from the operation somewhat greater. The difficulties encountered are those concerned in the removal of the lens in its entirety. My objection to the operation is that secondary cataracts are more frequent, with attending risks of the secondary operations. I advocate the operation in those in whom the vision of both eyes is poor. If the vision of the other eye is good I do not operate unless the cataract has remained in the same state of maturity for a long time, and there is special reason for doing the operation.

C. D. Wescott, Chicago: Yes, in persons over 60, and have even operated on persons but little over 50 when vision in the eye to be operated on is no longer useful and vision in the fellow eye is failing rapidly. Preliminary iridectomy and extraction later is practiced in all cases of immature cataract. Irrigation is not employed, and two experiences with dionin have given doubtful results. As compared to extraction of mature cataract, results have been equally good, though discission has to be performed a little more frequently, and inflammatory reaction is also a little more frequent. I have no objection to the operation if the patient's necessities make it desirable.

F. T. Rogers, Providence, R. I.: Yes, in patients of any age if the general health is good, and when the vision in both eyes is so poor that the person can not go about easily or safely. Preliminary iridectomy is preferred and irrigation with normal saline solution is employed when indicated. Have had no experience with dionin. Results are quite as good as in the extraction of mature cataracts, though secondary operations are more frequent, as also inflammatory reaction. The difficulties encountered are those concerned in the removal of the soft lens material. Do not object to extraction of immature senile cataracts under conditions named.

George F. Suker, Chicago: Yes, in persons beyond 50 who count fingers faintly at 4 feet with the eye to be operated, and have about the same vision or a trifle better in the fellow eye. Preliminary iridectomy is preferred, though other forms of operation are sometimes selected, depending on circumstances. Irrigation of the anterior chamber with normal saline solution is employed, as also the use of dionin to promote absorption of débris. Results are as good as in extraction of mature cataract, though there is a greater tendency to the development of secondary cataract, and a tendency to greater inflammatory reaction, though this is not to be feared. The soft cortex is somewhat more difficult to remove. From a purely surgical standpoint I have no objection to the operation; it all depends on whether the patient is willing to wait for maturity or not, or on the time it takes the cataract to mature, even though the patient be willing to wait. Social environment is also a determining factor.

E. A. Shumway, Philadelphia: I prefer to wait until the cataract is mature unless social conditions are such as to make speedy restoration of vision a prime necessity. In such cases preliminary iridectomy is of great importance. Where much cortex remains, irrigation of the anterior chamber with boracic acid solution should be used, with the precaution, especially in case of deeply set eyes, that the wound does not remain submerged in the fluid, as it collects in the conjunctival cul-de-sac. I have seen one case at least in which I thought infection took place in this way. I believe that dionin has a very decided influence in the absorption of lens débris, just as in the absorption of exudates, and that its action depends largely on the local reaction which it produces.

W. A. Fisher, Chicago: Yes, in patients of any age when the vision in both eyes is too poor for ordinary pursuits. The simple operation is invariably performed. Irrigation is not employed, and experience in the use of dionin for the resorption of lens débris has been limited. Results are just as good as in extraction of mature cataract, though secondary operations are slightly more frequent, as also inflammatory reaction. No particular difficulties have been encountered, and I have no objection to the operation.

Wendell Reber, Philadelphia: Yes, in patients over 60 who have less than 5/25 vision in each eye. Preliminary iridectomy is invariably performed. Irrigation of the anterior chamber is not employed. The use of 10 per cent. solution of dionin is invariably a rule. As compared to mature cases, my results show a trifling advantage in favor of the mature cases. Secondary cataracts are probably a little more frequent, and low iritis is the rule in almost all cases after extraction of immature cataracts. The presence of large quantities of cortex after the removal of the nucleus forms the element of difficulty in the operation. I have no objection to the extraction of immature senile cataracts that would not apply to any other cataracts.

E. C. Ellett, Memphis, Tenn.: I am much in favor of operating on unripe cataracts in one-eyed people, and people with double cataract when the vision of the best eye is so reduced as to interfere with safe locomotion and keeping the patient from working generally. I always do the combined operation in all cases, and in immature cataracts, if there is no objection to operating twice, I prefer to do a preliminary iridectomy. I do not find vision much of a guide as to maturity, as some eyes with a small central opacity see very little, while others with considerable peripheral opacities see very well. I operate when the patient is seriously inconvenienced by the cataract, no matter what the age. I irrigate the anterior chamber with normal salt solution, and by the practice have usually succeeded in removing practically all the cortex, thus making it unnecessary to use dionin. I have never had any trouble arising from the extraction of immature cataracts, and unhesitatingly recommend the practice. My views on this subject have already been briefly stated in an editorial which appeared in the *Ophthalmic Record* about one year ago.

Peter A. Callan, New York City: Yes, in persons over 40 whose vision in the eye to be operated on has been reduced below 20/70, and whose vision in the fellow eye is reduced to 20/40. Preliminary iridectomy and extraction later is invariably preferred. Irrigation of the anterior chamber with normal salt solution is performed when indicated, and dionin to promote resorption of débris is employed two weeks after the operation. Results have been as good as in the extraction of mature cataracts, though it is longer until the eye is free from irritation. Secondary cataracts are more frequent. I have no hesitation in operating on any immature lens, providing the needs of the patient require interference.

Allen Greenwood, Boston: Yes, in persons of any age when the vision in both eyes has been so reduced that coarse print can not be easily read. The combined operation is preferred, though the simple is preferred in suitable cases. Irrigation with normal salt solution is practiced, but I have had no experience in the use of dionin. Results have been equally as good as in extraction of mature cataracts, though secondary operations were required in about 50 per cent. of the cases. There is usually somewhat more inflammatory reaction, probably due to irrigation, but this promptly subsides under proper treatment. I have no objection to the operation in suitable cases.

Melville Black, Denver: Yes, in those cases in which the progress of the lenticular opacity in each eye is such as to cause lowering of vision beyond the useful point. If the patient has no occupation and is much inconvenienced by not being able to read, I should consider operation warranted. If a man with an occupation is no longer able to follow it because of poor vision, then his condition would warrant operation. I do not believe we are justified in requiring old people to wait for cataracts to mature if the opacification is advancing equally in each eye, because such persons may have wasted the only remaining months or years in which they might have been able to enjoy the fruits of vision obtained by operation. I prefer the simple operation, and employ irrigation of the anterior chamber with physiologic salt solution. Dionin is used a few days after the extraction to promote resorption of the débris. Results have been as good as in the extraction of mature cataracts, with about the same number of secondary cataracts requiring discission. Have not had inflammatory reaction, as a rule.

C. J. Kipp, Newark, N. J.: Yes, but not from choice, in persons of any age who as a result of lowered vision are unable to pursue occupation. The combined operation is generally preferred, though preliminary iridectomy is occasionally performed. Irrigation is not practiced and dionin has not been used. Results have been less satisfactory than in the extraction of mature cataracts, for secondary cataracts requiring operation are nearly always to be expected, and the imperfect results as to vision form a decided objection to the practice.

J. S. Kirkendall, Ithaca, N. Y.: Yes, in those persons whose vision has been so seriously reduced as to inconvenience them in ordinary pursuits. The combined operation is performed, with large corneal section. Irrigation is not employed, and I have had no experience in the use of dionin. In all my cases of immature senile cataract I have had good results. Have had no inflammatory reaction of any consequence, but have always been obliged to do a discission. I do not hesitate to remove an immature cataract, all things being equal, but I prefer a mature cataract if patient will wait.

H. B. Young, Burlington, Iowa: Yes. in persons whose vision has been reduced so that it is difficult to get about safely. The simple operation is preferred, but combined operation sometimes accepted, depending on the nature of the case. Irrigation with physiologic salt solution is employed, but have had no experience in the use of dionin. Ultimate results compare favorably with results secured in mature cataracts. Discissions are generally required, for I prefer peripheric capsulotomy. The inflammatory reaction is no more serious than in the extraction of immature senile cataracts if conditions are otherwise good.

L. D. Brose, Evansville, Ind.: Yes, in persons of any age when the vision in both eyes is insufficient for the patient's needs. Preliminary iridectomy is preferred, otherwise the combined operation. Irrigation is not employed, and experience with dionin is limited. Results have not been quite as satisfactory as in the extraction of mature cataracts. Secondary operations are more often required, and inflammatory reaction is more frequently encountered. The objections are that such operations not infrequently require a secondary cataract operation; are more liable to be followed by inflammatory reaction, and hence apt to have a more prolonged recovery period: and the shallow anterior chamber requires greater care in making corneal sections.

Charles S. Bull, New York City: Sometimes operate immature cataracts in patients over 40 years of age in whom the vision of the eye to be operated on has been reduced two-thirds or more, and vision in the fellow eye lost or practically so. Preliminary iridectomy and extraction later is preferred, and irrigation with normal salt solution is employed. Dionin is not used. Results are not quite as satisfactory as in mature cases, owing to less acute vision. Secondary cataracts develop in about 40 per cent. of the cases, though inflammatory reaction has seldom occurred. In these extractions the difficulties are in removing all of the soft lens matter, and the manipulations increase the danger of loss of vitreous. I never extract aan immature senile cataract except to help the patient's physical or mental condition, as, for instance, when the other eye is blind or useless.

Harrold Gifford, Omaha: I extract immature senile cataracts only when I have to do it, i. e., when the patient needs sight and the cataract fails to mature after discission of the capsule. Age is not regarded. If the vision of the best eye gets so poor as to make life a burden, I urge a preliminary iridectomy, and in from two to eight weeks make a discission of the capsule, followed by extraction in from two to ten days. I seldom irrigate, but believe it worth while in some cases. I have not used dionin in this class of cases, but believe the indication is clear and shall try it. Results as compared to the extraction of mature cataract are not quite so good, as the vision is less acute, development of secondary cataract requiring operation, as also inflammatory reaction after the operation, are more common. My objection to the operation is the difficulty of expelling the cortex, or at least telling when all of the cortex has been expelled; hence the uncertainty as to when attempt at expulsion should cease. The cortex remaining favors infection and secondary cataract.

Lucien Howe, Buffalo: I very seldom extract immature senile cataracts, as the risk is usually unnecessary, and the results from any standpoint are not very satisfactory. When I do operate on these cases I prefer preliminary iridectomy when possible to get consent for it, with irrigation with 1 to 10,000 sublimate solution if indicated. Dionin is not used. The development of secondary cataract and inflammatory reaction from the swelling of the clear lens fibers are sequelæ which form a contraindication to the operation.

Myles Standish, Boston: I have had comparatively little experience in extracting immature senile cataracts, as I never operate under such conditions unless the case imperatively demands it.

George C. Harlan, Philadelphia: I do not operate on immature senile cataracts by choice, as in these cases there is an increased liability to the development of secondary cataract, inflammatory reaction from the operation, and occlusion of the pupil. I am more inclined to do the operation in those of advanced age in whom the vision in both eyes has been reduced so that the individual is unable to read. In these cases preliminary iridectomy is preferred. Have had but little experience with irrigation, but consider physiologic salt solution the best for the purpose. Have had no experience with dionin. General results as compared to the extraction of mature cataracts are not as good.

Charles A. Oliver, Philadelphia: No, for the reason that the final results are nearly always sooner or later more or less bad. In a very limited number of cases, for peculiar sociologic reasons, I sometimes operate these cases at any age, when the vision in the eye to be operated on has been reduced to finger counting, and in the fellow eye has been practically lost. In these cases combined operation is usually performed, though occasionally preliminary iridectomy followed by extraction. Irrigation, with normal salt solution through a McKeown irrigator is employed, as also the use of dionin to promote resorption of lens débris. These extractions are nearly always followed by the development of secondary cataract requiring operation, as also inflammatory reaction from the operation. The permanent ultimate vision is always better after the extraction of mature cataract.

L. Webster Fox, Philadelphia: No, I do not extract immature senile cataracts, for I do not believe in taking the risk of serious secondary complications which nearly always take place and render the ultimate results unfavorable.

D. E. Welch, Grand Rapids, Mich.: No, as there is a greater liability for secondary conditions necessitating operative work and the ultimate results are poor.

S. C. Ayers, Cincinnati: I do not extract immature cataracts if I know it. In cases where the lenses are both about equal I triturate and then extract. In cases where I have extracted lenses slightly immature I have had trouble with the cortex. I avoid this either by waiting or by triturating one of the affected eyes.

George H. Keiper, Lafayette, Ind.: Have had no experience in the extraction of immature cataracts.

DISCUSSION.

Prof. J. Hirschberg, Berlin, said that uveitis, a complication of cataract not mentioned by Dr. Bulson, is very difficult to diagnose, not only in the affected eye, but in the other as well. The views regarding operation on unripe cataract, Professor Hirschberg stated, are poetical but wrong. Physicians are told that the mature cataract is like a pea in a pod, and that when opened it pops out entire, but Professor Hirschberg's experience is that some of the cortex will remain. In unripe cataract he always advises a large opening. If the patient is more than 50 years of age cataract comes out easily. In lamellar cataract in individuals of 30 or 40 he operates without any preparation.

Dr. S. D. Risley, Philadelphia, asked Professor Hirschberg if he would consider it justifiable to operate on a ripe cataract, traumatic or otherwise, with the other eye good, if the patient had to work among machinery, for example, where his life might be endangered because of the blind side, to which Professor Hirschberg replied in the affirmative.

Dr. J. A. Bach, Milwaukee, stated that in his experience in unripe cataracts the removal of the anterior capsule is much to be preferred to the simple tearing or large section. With a good capsular forceps it is a simple matter to remove most of the anterior capsule, and by so doing we are assured of a cleaner result than can be obtained by simple section. The curling up of the anterior capsule is not always so ideal as one could wish, and then again, lens substance often adheres with great tenacity to these curled up portions of the capsule. A gentle washing out of the anterior chamber after removal of the lens is often of great advantage and dislodges particles that otherwise would remain.

Dr. William Campbell Posey, Philadelphia, declared that ever since he has had patients to operate on he has followed Dr. Hirschberg's teachings and removed cataracts as soon as the vision in the good eye fell so low that the patient could not perform the ordinary duties of life, for he could not convince himself from what he had seen in his practice and in that of others, that it was desirable to wait until the lens had become thoroughly ripe before attempting its removal. His results have been equally as good in the removal of immature cataracts as in the removal of mature ones; indeed, he believes that if by waiting until the lens is thoroughly ripe, the cortical substance is more apt to adhere to the capsule and to occasion secondary cataracts and iritis than when the operation is performed in the immature stage. The corneal section must be large and iridectomy should be performed.

Dr. Eugene Smith, Detroit, said in regard to operating on immature cataracts that he believes that there is altogether too much fear on the part of the operators derived from textbook teaching. When the exigencies of the case require it, there is no more objection to operating on a cataract three-fourths ripe than on one fully ripe, and not as much on those overripe. He has been in the habit for years of doing it. The question of removal of the capsule, he said, is interesting, because he always removes the anterior capsule, and for fifteen years he has advocated that procedure. There is less danger from cortical matter and better chance for absorption when the anterior capsule is removed.

Dr. C. R. Holmes, Cincinnati, substantiated what has been said with regard to removal of unripe cataracts. It has been his practice for twelve to thirteen years to remove cataracts when the exigencies of the case demanded it, even if they were only one-half ripe. He has yet to find a single case where he regrets having operated on a partially ripe cataract.

Dr. Albert E. Bulson, Jr., declared his regret that he did not have time to complete the reading of his paper, so that the part dealing with the technic of the operation, including irrigation of the anterior chamber, use of dionin, etc., could enter into the discussion by members of the Section. There is a difference of opinion as to the advisability of operating for immature senile cataract, and the manner in which the operation shall be performed when indicated. Generally speaking, the majority of the ophthalmologists whose opinions were solicited, do not hesitate to operate in these cases, and they report satisfactory results. A few prominent ophthalmologists refuse to operate for immature cataract of any description. Dr. Bulson agreed with Professor Hirschberg that it is difficult to recognize mild uveal disturbance when the lens is clouded sufficiently to make an ophthalmoscopic examination unsatisfactory, and for that reason some poor results are due to the existence of mild pre-existing intraocular disturbances rather than to any ill effects directly associated with the operative procedures. Dr. Bulson confessed that he has learned to expect a certain amount of iritis following the extraction of immature cataract. The inflammatory reaction is undoubtedly due to trauma, more especially that accompanying irrigation of the anterior chamber, but with early and continued use of atropin and dionin he has not had any difficulty in controlling the inflammation. He considers dionin a valuable remedy in the postoperative treatment of cataracts. While the effect of the drug is questionable in some cases, in the majority it has a remarkable effect in promoting resorption of the cortical remains, thus reducing the possibility of necessity of secondary operations.

Educate.—All government by the people is made better when the people come to know and feel its deficiencies. No abuse can survive long when the people have located it. When the masses know what hurts them, that particular wrong must cease.—David Starr Jordan.

A PRELIMINARY REPORT ON CELLS FOUND IN YELLOW FEVER BLOOD, WITH REFERENCE TO THEIR ETIOLOGIC AND DIAGNOSTIC SIGNIFICANCE.

DRS. O. L. POTHIER, JOSEPH HUME, F. H. WATSON AND M. COURET.
NEW ORLEANS.

A careful study of yellow fever blood has shown the regular occurrence of certain cells hitherto either unnoticed or not described, which seem to be undergoing developmental changes and which can be demonstrated in the stomach of a recently infected stegomyia. These cells are entirely extracellular, though occasionally some are seen lying on the red cells; on one occasion one was distinctly seen lying within the protoplasm of a polymorpho-neutrophilic leucocyte. They occur, as a rule, alone, though two or more may sometimes be noticed lying indefinitely grouped. They vary in size from twice the diameter of a pneumococcus to one-fourth the diameter of a red cell, and vary in shape from an ovoid to a sphere, and oft times come to a focus in a higher plane than the surrounding red cells. When stained they show, as a class, a highly granular neutrophilic protoplasm surrounding a nucleus which contains one or more deeply staining chromatine granules; the protoplasm is limited by a capsule which is of considerable thickness in the older forms.

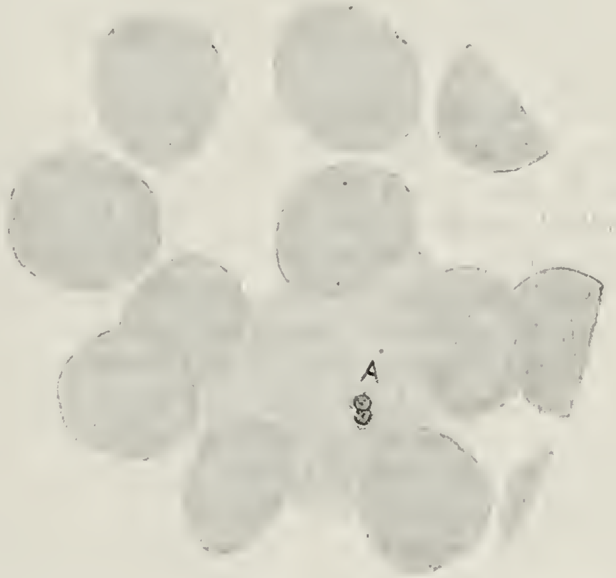

Fig. 1.—Type A, young form, surrounded by a pseudocapsule (1,300 diameters).

The following forms, with minor variations, have been observed:

A. Small, deeply staining neutrophilic bodies about twice the diameter of a pneumococcus and often lying in pairs; sometimes fine chromatin granules can be made out within these; again none can be seen. This form is found chiefly and in greater abundance within the first twelve hours of the disease, and is difficult to detect, as they can be easily confused with various artifacts (Fig. 1).

B. An ovoid or pear-shaped form, with a diameter about one-sixth to one-fourth the diameter of a red cell and a width of about one-third its own length. This has a well-marked nucleus, containing chromatin granules and a narrow rim of neutrophilic protoplasm. This form has been seen in what is taken to be a budding process; again it has been seen in dumb-bell form (Figs. 2 and 3).

C. This has been found in blood taken at any time in the first three days. This form is circular or sphere-shaped and approaches in size that of a microcyte; it has a neutrophilic protoplasm, a definite nucleus always containing several chromatin granules; the whole surrounded by a well-defined capsule (Figs. 4 and 5). It may be mistaken for blood platelets, which it resembles in size, especially when the platelets show much differentiation in staining. But the periphery of the platelets is always slightly wrinkled and irregular—never the case with the cell under description, and in the platelets any granulation which may exist is always found exactly on the periphery and never within the protoplasm.

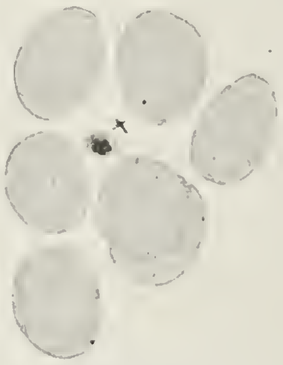

Fig. 2.—Type B. well marked nucleus, chromatin granules. narrow rim of plotoplasm (850 diameters).

D. A large cell which has a definite central nucleus surrounded by a finely granular protoplasm, which at its periphery is indefinitely limited and shows no marked capsule. This form is rare as compared with the previous ones, and is found chiefly on the second and third day (Fig. 6).

The blood has been taken from various parts of the body during the day and night, and from six hours after the onset to the eighth day of the disease. The described cells have only been found after the third day, that is on the fourth, and no relationship could be traced between their frequency and the severity of the disease. Fresh blood, by slide and hanging-drop methods, gave negative results, though on several occasions it was thought that the cells were seen; but there are so many objects in fresh blood which may be mistaken for them that at present this method is very uncertain. The examination of the spinal fluid likewise proved negative. In specimens taken from the same patient at the same time one slide may often be negative, while all the others are positive; this is probably due to the scarcity of the cells in the peripheral blood, for it is unusual to find more than four or five cells to a whole slide even after a three- or four-hour search, and it is exceptional to find as many as twelve in a single slide. It is easy to overlook them and much time has to be given to each specimen before it can be called positive or negative.

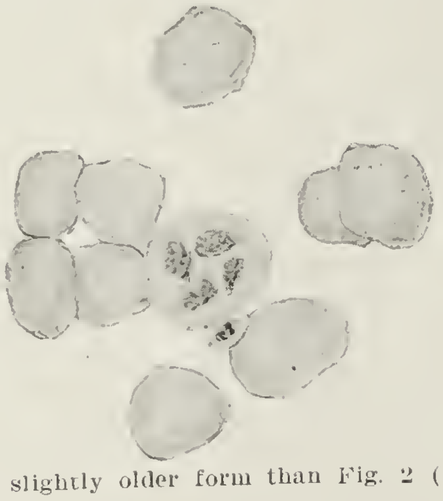

Fig. 3.—Type B, slightly older form than Fig. 2 (900 diameters).

Fifty-two slides of yellow fever blood taken in the first three days were examined, representing thirty-five separate cases. The described bodies were found in all of these save three. Two of these negative slides were duplicates of positive ones, and in the third malarial organisms were found, and clinically the case was indefinite. Many other slides taken on the fourth to the eighth day of the disease, inclusive, were examined with negative results, except once, when the cells were found on the fourth day.

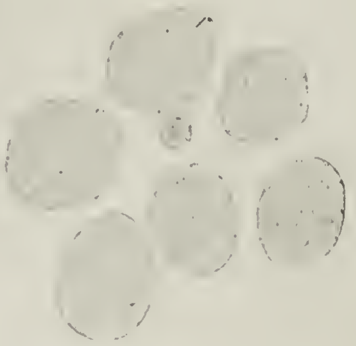

Fig. 4.—Type C, deep staining nucleus, narrow rim of protoplasm surrounded by a definite capsule (850 diameters).

These cells are very poorly and indifferently stained by the usual methods. With Wright's, Erhlich's triacid, eosin and methylene blue, etc., they are but feebly stained and their detection difficult. After trying many stains, the following was found to give almost perfect results: The blood was fixed by immersing the slide in methylic alcohol for two minutes, after which it is air dried. It is next stained with Delafield's hematoxylin for three minutes, acid alcohol till reddish-brown, am-

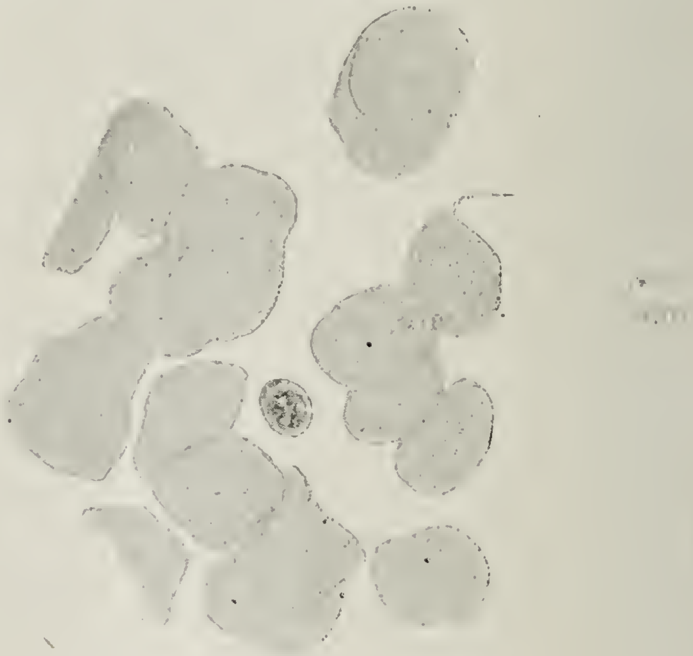

Fig. 5.—Type C (1,300 diameters).

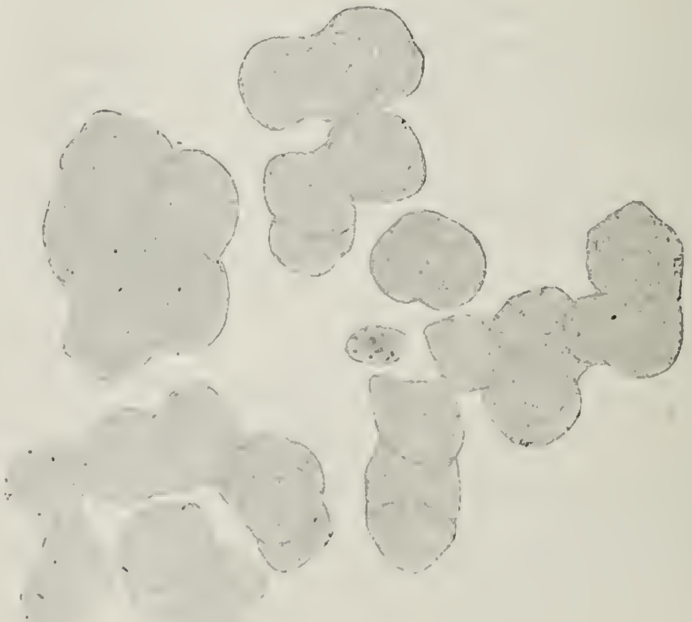

Fig. 6.—Type D (850 diameters).

monia water till blue, wash with water and stain for fifteen minutes with an aqueous solution of eosin. 1/1000, wash and dry and clear with oil of cloves and mount. A quicker method gives almost as good results, viz., after fixing stain with 0.5 per cent. eosin in 50 per cent. alcohol for one minute, wash and stain with Delafield's hematoxylin for three minutes, clear, dry and mount.

With this method the nucleus stains deeply and shows two to four chromatin granules; the protoplasm stains a light bluish-pink and is surrounded by a definite membrane which is more deeply stained. In this well-defined limiting membrane a rather large, deeply stained spot, situated in one pole, can often be made out, often accompanied by several smaller ones.

Every effort has been made in this work to avoid sources of error. The stains have been filtered, sterilized and examined with negative results for similar bodies. The slides and the skin of the patients have been likewise carefully cleaned, and as control 100 specimens of blood have been examined, taken at random from patients in the Charity Hospital. Thirty-five of these were stained by the same technic as that employed for yellow fever blood and most carefully examined with absolutely negative results. The others were stained by all the methods in vogue and with negative results. Four slides from yellow fever cases which were taken in Vera Cruz, Mexico, during the epidemic of 1902, showed the same bodies. Again, seven numbered slides which were submitted to us for examination were correctly diagnosed; four were from yellow fever cases on the second or third day, two from each case and three from other diseases. One yellow fever slide was alone miscalled as negative, but its duplicate was correctly stated to be positive. In several instances plasmodia malaria were found in the blood of patients ill with yellow fever, controverting the opinion that the two infections can not occur together.

Stegomyia raised from the egg and fed on normal humans or bananas and some which were not fed at all, but allowed to bite patients a few days after birth, showed in smears made from blood obtained from the stomach, the same bodies which we have previously described as occurring in the blood of yellow fever patients. In mosquitoes examined later than nine hours after feeding we could not demonstrate these bodies owing to the partial digestion of the blood. Mosquitoes raised at the same time, fed only on normal individuals and examined at the same interval of time showed no such bodies. Results of studies on mosquitoes at later periods of infection will be reported later.

We wish to thank the officers of the Isolation Hospital for the facilities they have given us; also the house surgeon and internes of the Charity Hospital for their interest and aid in following the cases.

Medical Group in Parliament.—The numerous physicians who are members of the French senate or house of deputies, for ten years have been in the habit of meeting apart to discuss measures affecting the public health, etc., before legislating on them. Italy has also a large proportion of medical men in its parliament, and they have recently organized in the same way. In order to become better posted on certain subjects they have issued an appeal for the holding of a special congress of physicians in the state employ, sanitary officials, pharmacists and veterinarians, to confer with the physicians in the legislature in regard to legislative matters. The physicians in the senate style their group the "*fascio medico parliamentare.*"

Special Article

IMMUNITY.

CHAPTER XXVI.

PLAGUE.

Plague was known in the second and third centuries. In the sixth century it ravaged the Roman empire and destroyed half the population in the eastern provinces. Under the name of the "black death" it swept over Europe in 1347-50 with a sacrifice of one-fourth of the inhabitants—about 25,000,000. During the fifteenth and sixteenth centuries many epidemics prevailed in various parts of Europe, and the disease seemed to have fastened itself on that part of the world. It seems, however, that the pneumonic form, the most contagious, gradually became less common, or the virulence of the infection diminished, and this, with the institution of quarantine regulations, decreased the prevalence of the disease during and following the seventeenth century. Nevertheless, there have been occasional outbreaks in Eastern Europe since that time. Since the recrudescence of plague in Hongkong in 1893 and in other places later, the disease has been subjected to modern methods of scientific study, its cause has been discovered, and the importance of rigid quarantine measures at seaports in preventing universal extension of the disease has had practical tests.

In the Hongkong epidemic of 1893-4 Kitasato and Yersin, working independently, discovered the bacillus of plague, *Bacillus pestis.*

Characteristics of the Organism.

The organism measures from 1.5 to 1.75 microns in length, 0.5 to 0.7 in breadth, is of long oval shape, typically, but presents many variations in form both in the body and in cultures. It may appear as a short oval (coccus form), or as a longer rod; and distorted and swollen, vacuole-like cells (involution or degeneration forms) are commonly met. The longer the disease has lasted, or, on the other hand, the older the culture, the more numerous are the atypical forms. In bouillon long chains develop. A knowledge of this pleomorphism is important from the standpoint of diagnosis. It is placed with a number of other organisms which cause hemorrhagic septicemias in animals, the members of which comprise the "group of hemorrhagic septicemia."

Polar Staining.

Like some of them, the two ends of the bacillus stain more densely than the central portion with methylene blue, dilute carbol fuchsin and other dyes (polar staining). It does not stain by Gram's method. A capsule may be demonstrated by appropriate technic. The organism has no independent motility and probably possesses no flagellæ. Spores are not formed. It may be cultivated from the blood, organs, bubos, sputum, stools and urine of patients (or animals), on agar, gelatin, bouillon or blood serum which are of neutral or slightly alkaline reaction. On agar in certain respects it resembles the influenza bacillus, and confusion with this organism is possible in cultures made from the sputum. Its appearance on gelatin and bouillon are more or less characteristic. In the latter medium the so-called "stalactite" growth occurs, in which visible processes extend from the surface toward the bottom, where they meet other processes which extend toward the surface ("stalagmites"). These formations utilize as their starting points the sides of a flask or drops of butter or oil which are placed on the surface. Certain other organisms grow in a similar manner.

Involution Forms.

It is said to be a characteristic feature of the plague bacillus that many involution forms appear on agar which contains 3 per cent. of sodium chlorid. The optimum temperature for growth is from 25 to 30 C., which is somewhat lower than that for most pathogenic organisms. It grows rather slowly even under the best conditions. In mixed cultures it is overgrown by more rapidly growing saprophytic organisms (e. g., colon bacillus), although little antagonism exists between them. It may live for from four to seven days in the putrefying organs of man or animals. Its virulence may be retained in the cadaver of a rat for two months (Bandi and Stagnitta-Balistreri). During this time the organisms penetrate all the tissues of the body, even growing through the skin. It may live in the pus of a bubo for twenty days when unmixed with other organisms (Albrecht and Gohn); in the sputum from plague pneumonia for ten days; in various foods, as milk, potatoes, for one to three weeks; in water from five to twenty days, depending on the number of saprophytes which are present; in earth from two weeks to three months, depending on the quantity of organic matter and other organisms. In all these instances the higher the temperature, i. e., above 30 C., and the more numerous the saprophytic organisms, the shorter is the life of the plague bacillus. In winter, when contaminating saprophytes grow less rapidly, the plague bacillus lives longer.

Resistance.

The resistance of the organism to desiccation, sunlight and disinfecting agents is rather low, particularly when the surrounding temperature is above 30 C. In temperatures of from 29 to 31 C., when thoroughly dried, it rarely lives longer than from six to seven days, whereas at lower temperatures, 16 to 20 C., cultures may be obtained after from one to several weeks, depending on the material which contains the organisms. It lives longer in woolen and cotton threads (clothing) than when isolated as in dust; hence, dust infection is improbable (Dieudonné). In sputum (plague pneumonia) and purulent exudates in which the bacilli become incrusted to a degree, life may persist for from three to four weeks. Sunlight kills them in from two to six hours, depending on the temperature and the proximity of the organisms to the surface. Although cultures for the purpose of vaccination have been killed at a temperature of 65 C. for one hour, precautions to insure an even distribution of the heat are necessary to render certain the death of all organisms. 100 C. kills them at once, and 80 C. in from five to ten minutes (moist heat). It is very resistant to cold, remaining alive at a temperature of —20 C. for several weeks, even when repeatedly thawed out during this time. It even proliferates slowly at from 4 to 7 degrees C.

Virulence and Toxins.

Cultures of the plague bacillus retain their virulence over a long period when kept in a cool dark place, and when not allowed to dry. However, they often lose in virulence unaccountably. The nature of the toxic substance is as yet obscure. A concentrated soluble toxin has never been obtained in cultures. Filtrates of young cultures show little or no toxicity, whereas in older cultures the fluid becomes more or less toxic (liberation of endotoxin?). Lustig and Galeotti extract cultures with 0.75 to 1 per cent. potassium hydroxid, from which they precipitate a toxic substance with acetic or hydrochloric acid. Markl found the cell bodies to be very toxic after eight weeks' growth at room temperature, provided the organisms were killed by chloroform rather than by heat; killing by heat destroys the toxic substance largely. He believes some metabolic product of the organs is the chief toxic constituent, claiming at the same time the presence of a certain amount of soluble toxin.

Virulence for Animals.

The plague bacillus is exceedingly virulent for rats, guinea-pigs and monkeys; somewhat less virulent for mice; other animals, cats, dogs, swine, cows, horses, sheep, goats, may be infected artificially, although they commonly recover even after large doses. Rats and guinea-pigs may be infected by subcutaneous, intraperitoneal and intravascular injections, by the feeding of infected material or by placing it on the nasal mucous membrane or in the conjunctival sac, and by inhalation experiments, the last method commonly resulting in plague pneumonia. Guinea-pigs die of plague septicemia in from four to five days when cultures or material containing the organisms (sputum, feces, organs from plague cases), are rubbed into the shaven or even unshaven skin (Albrecht and Gohn). This experiment is of value for the detection of virulent plague bacilli and is a convenient means of separating them from contaminating organisms. Following inoculation into a cutaneous or mucous surface a local reaction of varying intensity develops in which the subcutaneous tissue becomes edematous or even hemorrhagic, in a number of hours the regional lymph glands become swollen and hemorrhagic, and in from two to five days the animals die in a condition of plague septicemia. Cultures of low virulence not infrequently cause a chronic infection which is characterized by the formation of large granulomatous nodules on the surface of the liver and spleen, and in the omentum. Such foci contain many plague bacilli, and the death of the animal results in a few weeks from intoxication or from general infection. Although rabbits are much less susceptible than rats or guinea-pigs, young animals succumb to cutaneous inoculation.

Endemic Plague.

Dieudonné cites four foci in which plague is known to be endemic at the present time: One is in China (province of Yünnan), from which the Hongkong epidemic originated; a second in the Himalayas, which led to the outbreak in Bombay; a third in a mountainous region south of Mecca, and a fourth was found by Koch and Zupitza in British East Africa near the source of the White Nile.

Plague in Rats.

The opinion is held by many that plague is primarily a disease of the rat and that certain regions remain pest-infected over a long period because of this fact. It is known that rats often suffer from a chronic form of the disease, and it is possible that the organism at times acquires increased virulence, as a consequence of which the infection becomes widespread and rapidly fatal among these animals. It is probable that the chief method of transmission from rat to rat is through the eating of plague cadavers by healthy animals. The possibility of transmission from one animal to another by means of fleas is upheld by some. It has been shown that the blood which they ingest from an infected animal may contain bacilli, but transmission to other animals by this means is still disputed.

Plague Houses.

The means by which the disease extends from rat to man are not definitely determined. This much is known, however: First, that the bacilli are excreted in the urine and feces of infected animals; and, second, that the disease attacks those especially who live in dark, damp, filthy quarters in which rats are numerous. A great mortality among the rats not uncommonly precedes an outbreak of plague in man. Europeans who live under hygienic conditions in plague infected districts do not often contract the disease. It is suspected that the existence of "plague houses" may depend on the prevalence of the disease among the rats which infest the houses. On the other hand, the organisms excreted by a plague patient through the sputum, urine or feces, find in the conditions described above, surroundings which favor their prolonged life; hence, the occurrence of subsequent infection in the same house in many instances may be traceable to a previous case.

Fleas.

The theory has been advanced also that fleas may be an important means of transferring plague from rats to man. This is objected to on the ground that every animal has its own peculiar flea and that the flea of the rat will not bite man. Nevertheless, it may alight on the skin of man temporarily and there discharge bacillus-laden excretions. Flies in a like manner may distribute the bacilli from rats or the infected excretions of man.

Epidemics.

Epidemics of plague lack the explosive-like suddenness in their development which characterizes cholera and to a certain extent typhoid and dysentery. The cases occur in groups and in particular houses in such a manner that direct and indirect contact seems to be largely responsible for its extension. Every epidemic of plague may be divided into three stages: a slow progression from small centers, an acme of widespread death, and a slow recession (Dieudonné). It seems probable that the disease spreads rapidly and extensively only when the pneumonic form prevails. In this instance infection by direct contact may occur through the inhalation of dried sputum or of infected drops of sputum or saliva directly from the patient. Even in ordinary speaking minute drops of saliva are thrown into the air. In the pneumonic and septicemic forms, the infected urine and feces contribute to the dissemination of the organisms. Transmission by indirect contact, as by infected clothing and linen, has been noted in many instances. Compared with pneumonic and septicemic plague the bubonic form is much less dangerous to a community.

When plague invades a new country it commonly makes its first appearance in coast cities. Presumably this is accomplished through infected rats which may board a ship during its stay in a pest-ridden harbor, and which subsequently escape at the new port.

Infection Atria.

In man infection takes place through the skin most frequently, although the mucous membrane of the mouth, nose, pharynx, tonsils or the conjunctiva are possible infection atria. Often no local reaction is produced, and the point of entrance may be indicated only in a general way by the swollen lymph glands of the region. Infrequently a pustule or small carbuncle marks the point of entrance. Primary plague pneumonia is caused by the inhalation of pest-laden material, particularly fine particles of sputum from a pneumonic case, and perhaps also by the inhalation of infected dust; the latter is probably of less importance because of the short life of the organism in dust. Infection is thought not to occur through the stomach or intestines.

The incubation period is commonly from three to five, and not longer than ten days.

Following cutaneous infection the regional lymph glands become swollen and hemorrhagic, and undergo more or less extensive necrosis. When the infection extends beyond the lymph gland the blood may contain enormous quantities of bacilli (plague septicemia), and the same condition follows plague pneumonia; in the event of general infection death follows in a few hours. "Secondary pneumonia" and also "secondary buboes" develop as a consequence of blood infection. Hemorrhages into the mucous membrane (especially the stomach or cecum), endothelial surfaces (pericardium), and various parenchymatous organs, with extreme degeneration of the latter (liver, kidneys and heart), are characteristic anatomic changes. The spleen is usually swollen. The toxic substance evidently has affinities for many tissues.

Mixed infection with the streptococcus is not uncommon and is a serious complication.

Prophylaxis.

The principles of prophylaxis rest: 1, In an early bacteriologic diagnosis by microscopic and cultural examination of blood, sputum and fluid taken from a bubo either by a syringe or after incision; 2, in the thorough isolation of patients and of those who have been exposed to infection; 3, in the disinfection of excretions, of clothing and of infected houses, which in some instances may mean the destruction of the latter; 4, in the destruction of rats; 5, prophylactic injections. Up to the present time the most effective measure of getting rid of rats is to offer a bounty for each animal caught.

Vaccines.

The vaccine of Haffkine has been used extensively in India. The Indian plague commission found that the incidence of disease and mortality were lower among the inoculated than the uninoculated, although many of the inoculated contracted the disease in a comparatively benign form. The vaccine consists of bouillon cultures which have grown for six weeks with stalactite formation (see above), then killed by exposure to a temperature of 65 C. for one hour; from 0.5 to 3.5 c.c. are injected, according to the age and size of the individual. One or more subsequent injections may be given. The local and general reactions are of moderate severity. Protection becomes manifest only several days after the inoculation and may persist for many weeks or months. The vaccine recommended by the German commission consists of two days' old agar cultures which have been killed by heat (65 C. for one hour). Lustig and Galeotti utilize the toxic precipitate described above as a vaccine. Terni and Bandi inoculate rabbits or guinea-pigs intraperitoneally with the plague bacillus and after or just preceding death collect the peritoneal exudate, in which the organisms are allowed to proliferate still further for twelve hours. The bacilli are then killed at a low temperature, and this fluid, after an addition of a preservative, constitutes their vaccine. Although the last three vaccines have proved of value in animal experiments, they have not as yet been used extensively in man.

Besredka, also Shiga, recommend the use of mixed active and passive immunization, already referred to under typhoid and cholera, in this instance naturally using plague bacilli (killed) and anti-plague serum. Shiga reported good results by the use of the combined method in the epidemic in Kobe.

Immunity.

The immunity which is produced by protective inoculation, like that which follows natural infection, is considered to be antibacterial inasmuch as the serum acquires increased bactericidal power for the bacillus, but shows no ability to neutralize its toxic constituents. As in relation to many other infections, however, we are not in position to ignore the possibility of an increased phagocytic power on the part of the leucocytes. The immunity which follows infection is of long duration.

Serumtherapy and Prophylaxis.

Prophylactic injections of antiplague serum produce a temporary immunity of about two weeks' duration. The Pasteur Institute prepares the serum of Yersin by immunizing horses first with killed and then with living cultures. The immunization is difficult and from several months to a year and a half are required for the production of a strong serum. When the blood is drawn eventually its freedom from living plague bacilli and from toxic substances must be assured. The immunizing value of the serum is determined by that quantity which will save a mouse from a fatal dose of living plague bacilli, the serum being given twenty-four hours in advance of the culture. This is accomplished by 0.1 to 0.02 c.c., depending on the strength of the serum. Its curative power is estimated from that quantity, 0.5 to 0.1 c.c., which saves a mouse when administered sixteen hours after the injection of an otherwise fatal dose of culture. For protective inoculation in man from 10 to 20 c.c. are recommended, and for curative purposes from 30 to 50 c.c. Concerning the value of this serum Diendonné concludes as follows: "On the basis of the results obtained in man and in animal experiments we can attribute no positive curative value to the Parisian serum, although a certain influence on the course of the disease can not be denied. On the other hand, the serum is suitable for protective inoculation when immediate immunity is necessary, as for those who are caring for cases of plague pneumonia. Since, however, the protection afforded by this means persists only for a few days, subsequent active immunization with killed cultures is indicated as soon as possible for those persons who are exposed to infection for some time." The favorable results noted by a number of observers would seem to justify further use of the serum for curative purposes.

The serum of Tavel, prepared at the Institute of Bern, is, like that of Yersin, bactericidal and agglutinating. Antitoxic as well as bactericidal properties are claimed for the serum of Lustig, which is prepared by immunization with the toxic precipitate mentioned above. It has been used extensively in the treatment of plague and in a number of small epidemics favorable though not thoroughly convincing results were reported. The serum of Markl, which is supposed to be antitoxic, has had no practical trial. It is prepared by immunization with old cultures which have been killed by chloroform.

Agglutination.

Although the serum of patients acquires a certain agglutinating power, it is rather low (1/3 or 1/5), and does not become manifest until during the second week of the disease. Before this time diagnosis by clinical or bacteriologic means can be made with certainty, hence for clinical diagnosis the reaction has little value. On the other hand, a strong artificial agglutinating serum obtained by the specific immunization of animals is of great value for the identification of the plague bacillus when cultures have been obtained from suspected cases. Artificial serums may agglutinate in dilutions of from 1/1000 to 1/6000.

The protective power of vaccination was strikingly shown in the case of a nursing mother who contracted confluent smallpox; she was taken to the hospital with her seven months' baby. The infant had been successfully vaccinated fourteen days previously; it was not weaned, but was nursed by the mother throughout her illness, and was handled daily by about fifty other patients in various stages of smallpox; it left the hospital in perfect health.—H. J. Neilson, in *Brit. Med. Jour.*

Clinical Notes

AN UNUSUAL GONORRHEAL COMPLICATION.

JAMES A. NYDEGGER, M.D.
United States Public Health and Marine-Hospital Service,

Patient.—A young Swede, aged 21, of fair habits, who could not recall having ever before been ill, was admitted to the Marine Hospital, New York, June 14, 1905, with the following history:

History.—Having arrived in port after a somewhat prolonged voyage, he, in company with a number of his shipmates, visited numerous sailors' brothels in lower New York. The result was that a few days later he developed gonorrhea. There was a discharge from the meatus, and a short time after the discharge appeared he noticed a soreness in the right groin, on account of which he applied for relief.

Examination.—This showed, in addition to the discharge, a slight enlargement and tenderness of one or two of the superficial inguinal glands on the right side. Temperature and pulse were normal.

Treatment.—Rest in bed, a restricted diet, alkalines administered internally, an ice bag applied over the tender glands and a 1 to 4,000 solution of permanganate of potassium for irrigation of the anterior urethra were prescribed.

Result.—His discharge ceased in about a week, and the pain and swelling of the lymphatic glands almost subsided. The patient was able to be about in the ward. The urethral irrigation was continued.

Subsequent History.—On June 25, following a feeling of chilliness, there was elevation of temperature, and on June 26 the temperature went up to 39.8 c.; pulse was 84. He complained of chilly sensations at intervals. Irrigations were discontinued, and cold sponges were ordered to reduce temperature. The temperature took a downward course for three days, but did not reach normal.

On June 29 a tumor mass the size of a small hen's egg was made out above Poupart's ligament almost at the ilium. The tumor was painful on pressure, and it continued to increase in size. The mass could be fairly well palpated on deep pressure. There was doubt as to its nature and more doubt as to its exact location, whether it was intraperitoneal or extraperitoneal.

Blood Examination: This showed a leucocytosis of 16,300, and a differential count (500 cells) gave 75.5 per cent. polymorphonuclear cells.. The temperature curve indicated also a rather severe infection.

Operation.—Under ether, an incision was made about an inch above and parallel to Poupart's ligament. It was about four inches in length, and extended well out over the anterior superior spine of the ilium. The peritoneum was reached, and being adherent to the mass, was pushed upward and backward with some difficulty. Following back between the mass and the peritoneum carefully, the mass was found to consist of a number of lymphatic glands closely surrounding the external iliac vein and artery, and bound together by their surrounding inflammatory tissues. The glands contained many foci of suppuration.

Owing to the depth of the involved glands and to their close connection with the large blood vessels, they were not wholly removed, for fear of wounding the vessels. A blunt-pointed probe was pushed into the glands in many directions, and subsequently they were broken down by the fingers and partially removed. The wound was packed with plain sterile gauze and left open. The portion of the glands left behind at the time of the operation and adherent to the vessels, subsequently sloughed away gradually, and the wound healed by granulation. The patient was discharged in early August.

Remarks.—The case is reported because of the apparent great rarity of such complication occurring in the course of an attack of gonorrhea. There was reasonable doubt before the operation as to the nature of the mass; there was also more doubt as to its location. It was difficult to say whether it was inside the abdominal cavity or outside the peritoneum, owing to its close proximity to that membrane. In its growth the mass had pushed that part of the peritoneum extending over it, upward. The necessity for the operation was indicated by the septic pulse curve, the degree of leucocytosis and the high percentage of polymorphonuclear cells in the blood. With a suppuration due to a highly virulent organism in the lymph glands surrounding the iliac vessels, there is considerable danger of rupture of the glands through the peritoneum into the general abdominal cavity, with a resulting peritonitis.

Dr. C. H. Lavinder of the Public Health and Marine-Hospital Service, in whose ward the case developed, first called my attention to it in consultation. The case was seen together a number of times and the opinions were divergent. Of course, there was always borne in mind the probable cause for the occurrence of the tumor.

In a rather extensive search of the literature of gonorrhea and its complications, I have been unable to find a single reference to a complication of this nature occurring in this location. I assume, therefore, that it is of rare occurrence. A glandular involvement of lymphatics of any nature in the course of a gonorrhea in the male is of rather infrequent occurrence, and then the superficial inguinal glands are the ones involved. Doubtless in the course of a gonorrhea other pus-producing organisms than the gonococci gain access to the lymph glands supplied from the genitalia, although these latter are capable of exciting violent inflammation. No other organisms were looked for in this case.

A CLINICAL CHART FOR THE RECORDS OF PATIENTS IN SMALL HOSPITALS.*

GEORGE F. WILSON, M.D.,
PORTLAND, OREGON.

In very many of the smaller hospitals throughout our country, a great deal of good work is done, and there is no question but that a careful record of this would prove useful, instructive and of benefit to science if it could only be observed in an accessible form.

Aside from the strictly scientific aspect of the matter, reference to the progress of a patient during a sojourn in a hospital becomes frequently important in a legal way, as a means of substantiating or refuting claims for damages, and as a groundwork on which an expert witness may base an opinion. Witness for instance the case of an individual with marked asymmetry of the chest wall, who claimed that his existing disability was largely due to his having his ribs crushed in a railroad train wreck. His hospital record showed no variations in pulse, respiration or temperature during the nineteen days immediately following the accident, yet had the case not been settled out of court, there were witnesses ready to swear that the deformity was not present before, and therefore must have been caused by the accident. In many such ways can the value of a careful record be shown.

Owing, however, to the small clerical force and the manifold duties of the resident staff in our smaller hospitals, but little time can be found for copying histories, even though they are taken carefully. The work is not instructive, or interesting to a student of medicine, and as I know, from my own personal experience, will be neglected if there is any possible way to do so. Excuses will always be found, or made, to shirk the work, consequently, unless such records can first of all be made in the simplest possible shape and afterward be preserved in the original form, they will be lost forever. A hospital, like any business, must keep a system of books, making a certain amount of clerical work a necessity, and after the admission of a patient, as a part of the business of the institution, there must be a method of showing what changes of rates are brought about by a transfer from ward to room, or vice versa, and what expense has been incurred in the way of operation, etc.

With the view of avoiding any repetition and simplifying the work as far as possible, to each patient, on admission, is allotted both a card and this chart on which are blank spaces for his number, name, date of admission, address, age, civil condition and occupation, religion and nativity, also the number of his room or ward, with the additional information on the card as to page of ledger, address of nearest relative, name of his physician, name of order or fraternity of which he is a member, and name of individual or corporation responsible for him. The card is kept at the office for the business part of the transaction, becoming, if deemed proper, an index to his chart when filed away, and an index to his ledger account. The chart is given to the nurse in charge of the patient. On the obverse of the sheet, immediately beneath the so-called pedigree, is a space for the diagnosis and name of attending physician or surgeon. Beneath this is recorded, under separate headings, any operation performed, with its date, the name of operator and assistant, the kind of anesthetic, total time, amount for narcosis, and total amount, and name of anesthetist, the kind of sutures, both deep and superficial, date of their removal, use of drainage and results as to infection. Below this, under the headlines, "Family History," "Previous History," "Present History," and "Examination," are spaces for recording these facts. Sufficient space to the right of this is reserved, under separate headings, for the results of blood examination and urinalysis. Near the lower margin are the results as to cure, improvement or not, with date of discharge or death. On the reverse side, under the caption "Bedside Notes," the sheet is so ruled as to give a space for a morning and evening record of pulse, respiration and temperature, a daily record of bowel and bladder function, diet, treatment, and remarks on the progress of the case. A sufficient margin is preserved on both sides for binding in book form, or with perforations to form a portfolio. Under bedside notes, one sheet will accommodate a stay in hospital of about one month; should, however, the sojourn be prolonged, additional sheets of these notes, with both sides alike, are provided for a continuation of the history, all being bound together when finished.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

GOOD SAMARITAN HOSPITAL.

CLINICAL HISTORY.

No. . . . . . Name . . . . Admitted . . . .

Address . . . . Age . . . . Civil Condition . . . .

Occupation . . . . Religion . . . . Nativity . . . .

Room No. . . Ward No. . . Transferred to . . . . Date . . . . .

Diagnosis . . . . Dr. . . . .

Operations . . . .

Date . . . . Operator . . . . Assistant . . . .

Anesthetic . . . (Total time) . . Amount (for Narcosis) . . . (Total) . . .

Anesthetizer . . . . . . Sutures (deep) . . . . . . (Superficial) . . . . . .

Drainage . . . . Sutures removed . . . . Infection . . . .

Family History

Previous History

Blood Examination
- Hemoglob %
- Whites No.
- Reds No.
- Stained Prep.

Present History

Urinalysis
- Reaction.
- Spec. Grav.
- Albumin
- Sugar
- Phosphates
- Urates
- Crystals
- Blood
- Pus
- Casts

Examination

Results: . . . . Cured. . . . Improved. . . . Unimproved. . . . Died. . .

Discharged. . . . .

[The top of the reverse side is as follows:]

BEDSIDE NOTES.

Name	Room No.	Ward No.

Date	Hour	Temp.	Pulse	Resp.	Urine	Stools	Treatment	Diet	Rem'ks.

[The remainder of this page of the chart is ruled off in columns under the above headings.]

It becomes the duty of the nurse in charge to fill in the bedside notes, to copy, from slips furnished by a member of the house staff, the results of the urine and blood examinations, to fill in the space recording any operation and its results; furnishing to the office, on a slip provided for the purpose, the nature of the operation that proper charge be made, also the record of any transfer from ward to room, etc. To a member of the house staff is allotted the duty of taking the history of the individual directly on the chart.

When the case is finished, the chart is returned to the office and the attending physician or surgeon is asked to enter the diagnosis and append his signature.

The chart is put away and the card which was furnished the clerk, filed in card form, as an index of the patient's name and number, or an index may be kept in a book provided for the purpose, together with another of the disease, so that either may readily be referred to.

The accompanying reproduction of the chart shows the wording, but not the space. The chart itself is 11 by 15 inches. While not claiming that either the chart or the methods employed are in any manner perfect, they are offered as a means of bringing some order out of chaos, and for suggestions as to improvements.

DISCUSSION.

Dr. E. S. Wright, Salt Lake City, said that the size of the chart is a matter of some importance in handling and one to which he would find some objection. If only that part of the sheet were used below the lower line it seems to him that it would be better. He has used a form of chart similar in width and length for recording in a private hospital. The space for diet needs to be enlarged while that for remarks may be lessened. It is a very essential matter to specialize in the dietary. These are the objections he would offer to the use of such a large sheet. He prefers to take the material on the side giving clinical history, and an independent piece of paper, say a blue print containing the clinical history, having the two uniform in size.

Dr. Harry M. Sherman, San Francisco, said that the principal objection in his mind is the fact that in these records one has to write on both sides of the sheet, and he thinks this will prove to be a very decided drawback, as it is customary when papers have to be filed together that only one side should be used. Apparently the history is not kept by the chief, but by an assistant. Dr. Shernan finds it useful to have kept with the records of each case a special sheet which is his and on which he can jot down observations himself. This always stays with the history and is bound up with it, so that when he goes back over the records of cases he can find his own individual expressions of opinion, which are much more intelligible to him than those put down by others. This sheet is of a separate color and he considers this a practical point. Another objection is having the space so ruled as to allow only a certain amount of space under each heading. Some things can not be kept in a given space, and a patient's condition may call for space which should be limited only by its own needs. He considers that in this respect the chart is a little too mechanical.

Dr. G. A. Wilson declared that Dr. Wright's objections are good. These charts are not kept at the patient's bedside, but in a separate room, and the top of the chart is grasped by a clip. The difficulty of writing on either side is important, and a great objection is that the house surgeon, when taking the history of the case, often soils the sheet. Dr. Wilson said that Dr. Sherman evidently must have reformed, as they were in Bellevue Hospital together and he used to have an old convalescent take his histories for him, but now, apparently, he takes them himself. Dr. Wilson said that he did not present the chart as a perfect specimen, but only to get suggestions. He has often been annoyed and embarrassed when he wanted a history and it could not be found.

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THE INDIVIDUAL AS A FACTOR IN INFECTIOUS DISEASES.

One of the characteristics of medical opinion which can be traced through the literature of all ages is its tendency to run to extremes. From a period of excessive bleeding and purging we react to a period of practically no bleeding and mild purging, and instances of a similar character could be multiplied indefinitely. Sometimes the complete abandonment of an old method or idea is due to discoveries which indicate its fallacies; more often the change is due to the influence of some one man or group of men who change the fashion, for there are fashions in medicine as well as in spring bonnets. Again, a medical theory may be so attractive and so plausible from certain points of view that, for the time being, it hypnotizes us into forgetting or minimizing the other points of view. A recent article of Ewing[1] suggests that we have been so hypnotizing ourselves with certain aspects of the bacterial theory of infectious diseases.

In bacterial infections, what we call the disease is the expression in symptoms and signs of a struggle which is taking place between the invading bacterium and the invaded individual. The general tendency of the profession, ever since bacterial diseases came into prominence in the last quarter of the preceding century, has been to lay too much stress on the rôle of the parasite, and too little on the rôle of the host; in analyzing the factors producing the disease. This tendency, though widespread, has not been universal, for there have always been those who championed the cause of the individual. We remember, for example, that Maurice Letulle, in his classical work on inflammation, suggested that we should speak of pyogenic individuals rather than pyogenic cocci.

It is in the class of infections represented by typhoid fever that we find the greatest difficulty in explaining all the changes from the point of view of bacterial action alone. The typhoid bacillus typifies a class of bacteria to which most pathogens belong, and in which the disease-producing toxins are not excreted as in diphtheria, but are set free only when the enclosing cell is damaged. Thus in typhoid fever we see at an early stage of the disease a bacteriemia, but as the disease progresses, even in unfavorable cases, the bacteria gradually disappear from the blood, and in favorable cases the disappearance is complete. In the production of immunity from diseases of this class this destruction of the causal bacteria is all-important, for it is found that immunity can not be produced by the injection of filtrates of the cultures, but that the bacterial cells must be introduced also. During the destruction of the bacteria, certain poisonous products are set free, and, though we know but little of their composition in many instances, enough has been discovered to lead one to surmise their nature and effects. Vaughan has expressed the opinion that the bacterial cell is a chemical compound of definite composition. From the colon bacillus he has isolated a variety of chemical groups, among which nuclein, amido and carbohydrate groups are most important. These substances exert an intensely irritating local reaction, and evidently produce a cumulative poisonous effect on the body cells, as apparently no real immunity to them is developed. It seems probable that, like other poisonous proteids which do not cause immunity, they must be disposed of by oxidation. During this process, and before they are completely destroyed, they may seriously injure certain organs engaged in their destruction, especially the liver, in which histologic evidence of severe damage is generally to be made out. In typhoid fever, then, taking this as an example, the bacilli not only produce toxins which can be immunized by antitoxins, but also other poisons which have a cumulative action, and which must be destroyed by oxidation more or less at the expense of certain internal organs. There is evidence that the changes excited in the body cells by the cumulative toxins result in serious disturbances in the metabolism of typhoid patients which lead to a condition closely resembling at times acute yellow atrophy of the liver. Once started, these degenerative processes seem, to a certain extent, to be self-perpetuating. According to this conception typhoid fever does not represent merely a specific bacterial intoxication, but shows in addition to this the effects of a peculiar, self-perpetuating autointoxication. The bacterial toxemia is the predominating factor early in the disease, while the autointoxication plays the leading part in the later stages. It is possible, by accepting this hypothesis, to understand why it is that different individuals with apparently the same degree of typhoid infection react in the end so differently. It shows us that in this and many other bacterial diseases we must reckon much more with the rôle played by the individual than we have in the past.

PHYSICAL CHEMISTRY APPLIED TO THE PHENOMENON OF AGGLUTINATION.

Every one is familiar with the phenomenon of agglutination from the point of view of a diagnostician. When blood or serum from a typhoid patient, for instance, is added in the proportion of 1:50 to a uniform suspension of typhoid bacilli, the bacteria clump together and fall to the bottom of the vessel. The explanation of this clumping has been made the subject of a large number of investigations and many interesting results have recently been presented. In the light of these studies, the phenomenon may be divided into two phases: (1) The union of agglutinin with the bacteria, and (2) the clumping and precipitation of the bacteria thus treated, which may be called "agglutinin-bacteria." Agglutinin-bacteria which have been washed in sterile distilled water and resuspended in distilled water do not undergo spontaneous agglutination as long as no salts of any kind are present in the suspension. The addition of salts, as, for example, NaCl or $CaCl_2$, even in small quantities, produces agglutination.

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[1] Proc. of the Pathol. Soc. of Philadelphia, vol. viii, No. 3.

The first phase of the phenomenon of agglutination, i. e., the union of agglutinin with bacteria, is probably represented by a chemical reaction which results in the formation of a more or less stable compound, agglutinin-bacteria. Very little, however, is as yet known about the nature of this reaction. The second stage, that is, the clumping of the bacteria, has been likened by Bordet to the precipitation of colloidal solutions (as of $As_2 S_3$) and emulsions of unorganized substances (as of mastic or kaolin) by salts and acids. The particles in a colloidal solution and in an emulsion, and also the bacteria in a suspension of such, are charged with electricity which is shown by the fact that they migrate toward one of the poles of the battery when a current of electricity is passed through the colloid or emulsion. Bacteria in suspension, and also many colloids and emulsions, usually have a negative charge and hence migrate toward the positive pole (anode). It has been found, now, that such colloids and suspensions of bacteria are precipitated, or agglutinated, very similarly by the same salts, and that the laws governing the precipitation of colloids also govern the agglutination of bacteria.[1] Thus the power of a salt to produce precipitation of colloids, or agglutination of bacteria, is dependent on (1) the degree of its electrolytic dissociation, (2) the valency of the cation (the basic radical of the dissociated salt), (3) the speed of migration of the cation, and (4) its decomposition tension.[2] The higher the valency of the cation and the lower its decomposition tension the greater, in general, is its power to precipitate colloids and bacterial suspensions. H ions form a striking exception to this rule, presumably on account of their high speed of migration. Sodium, for instance, has a high decomposition tension and its valency is low, and in agreement with this it has been found that its salt, NaCl, precipitates colloids only when used in high concentrations, and does not agglutinate bacteria at all, unless they have previously been acted on by agglutinin. That is, agglutinin-bacteria are more susceptible to the action of NaCl than untreated bacteria. On the other hand, salts of metals with a high valency and a low decomposition tension, as $Al_2 (SO_4)_3$, precipitate untreated bacteria when only small quantities of the salt are added. The greater susceptibility of agglutinin-bacteria to the influence of the salt is a general law. All salts clump agglutinin-bacteria more readily than the untreated organisms. This fact necessitates a revision of the old conception of the rôle of agglutinin. Apparently, agglutination of bacteria is always produced by the salts in solution and not by the agglutinin. The latter serves only to render the bacteria more susceptible to the influence of the salts. In agreement with this it has been found that agglutinin-bacteria have a smaller charge of negative electricity than untreated bacteria. This is an important fact, because the agglutination by salts seems to be due to the fact that they discharge the electricity resting on the bacteria. Just how that discharge is brought about is still an open question. Billitzer[3] is of the opinion that the cation of the salt, being positively charged, attracts many bacteria, or particles of a colloid, which results in a neutralization of their charges of electricity with the simultaneous formation of a clump which falls out of suspension.

This view explains the facts very beautifully, although it would be premature to say whether or not it is the correct explanation. We can now understand, however, why a trivalent cation is more effective in producing agglutination than a bivalent one. The former has a greater charge of positive electricity than the latter and hence can neutralize the electricity of opposite sign on a larger number of bacteria. Similarly the greater ease with which agglutinin-bacteria are clumped by salts than untreated bacteria is due to the smallness of their electrical charge which is readily neutralized by the cations of even traces of salts.

AMERICAN SANITARY ACHIEVEMENTS.

In the discussions on papers on tropical diseases before the Section on Practice of Medicine, at the recent session of the Association, particular attention was called to the amount of work which has been accomplished by American sanitarians in the various tropical countries that came under the domination of our government at the time of the Spanish-American war. Cuba has been entirely freed from the scourge of yellow fever, which had existed there for four centuries and was considered to be so firmly rooted in the country that its eradication was thought to be hopeless. In Porto Rico, the characteristic anemia, which for at least a century has been sapping the life and energy of the people, has been studied as never before, its true cause recognized, and the proper treatment for it evolved, so that now there is a prospect that before many years have passed this evil, too, will be eradicated. Particular attention was called to the work of Drs. Ashford and King,[1] who have been engaged in a field campaign against uncinariasis in Porto Rico for several years and who have the best hope of success in wiping it out. This will be the first time in the history of medicine that a disease affecting practically a whole people and easily transmissible has been successfully combated.

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[1] Neisser and Wechsberg, Münch. med. Wochft., 1904; Bechhold, Zeitschr. f. phys. Chemie, vol. 48.

[2] The term "decomposition tension" refers to the electrical tension which must exist on the electrodes to deposit the metal from aqueous solutions of its salts. It is a measure of the affinity of the metal for its electrical charge.

[3] Sitzungsber, d. Kais. Akad d. Wiss. in Wien, vol. cxlii, p. 1159.

[1] THE JOURNAL A. M. A., Feb. 11, 1905, p. 478.

The straightforward, enterprising methods of American medical investigators recall so typically what has been accomplished in all lines of work by our countrymen that we can scarcely fail to be especially proud of their success. If the Spanish-American war brought no other benefits in its train than those of the saving of life and suffering from yellow fever in Cuba and from uncinariasis in Porto Rico, it would have been well worth the cost of men and money it occasioned. As a matter of fact, however, the benefits conferred on acquired territory have been reflected in the sanitation of our own states. The compensation that always comes to the charity worker in benefit to himself has not been lacking in this national charity. While the anemia of Porto Rico was considered to be specific to the island, the discovery of its intestinal parasitic cause has led to more careful observations with regard to the etiology of obscure anemic conditions, especially among children in our southern states and the consequent discovery of the same parasite there.

What has been accomplished in advance in knowledge with regard to the distribution of this parasite and the mode of infection in the South shows the same enterprising spirit present among the medical investigators in that part of the country and makes an encouraging prospect for the future of medical progress all over the United States. Dr. Claude Smith's[2] investigations apparently confirm the assumption that these intestinal parasites gain an entrance into the body through the skin, and that it is the habit of going barefoot that causes infection and reinfection until large numbers of parasites may gather on the intestinal mucous membrane.

The work which has been accomplished in Cuba and in Porto Rico is only an introduction to the success of American sanitation in the Philippine Islands. Dr. Musgrave's paper,[3] presented to the Section on Practice of Medicine at this session of the American Medical Association, shows that the mysterious problems of amebic dysentery which have been so long under discussion are gradually nearing their solution as the result of careful investigation. Not only have the doubts about the etiology been cleared up, but the fact that a long latent period at the beginning of the disease frequently occurs, and that this may be followed by severe and even fatal infection, with fulminant symptoms lasting only a few days, shows the danger of the disease and the necessity for microscopic investigation for its diagnosis. There is, perhaps, no original work on intestinal parasites of recent years of more value than these studies of amebic dysentery.

Recently the lay press of the country has indulged in frequent expressions of discouragement with regard to the possibility of American medical science managing successfully the inevitable sanitary problems in the construction of the Panama canal. If those who are distrustfully pessimistic will but recall what has been accomplished in the last few years, apparently in the face of insuperable difficulties, a more hopeful spirit will very soon result.

If, with the comparatively inadequate resources and men of the Marine-Hospital Service and other sanitary bureaus so much has been accomplished in the recent past, it is easy to understand how much might be done if abundant opportunities were afforded and resources were only limited by the judgment, not of politicians, but of expert sanitarians.

MASTICATION AND CHILDREN'S HEALTH.

Two pathologic conditions are observed with increasing frequency among the children of this generation after the age of 2 years. They are an enlargement of the cervical glands, as well as of the adenoid tissue within the pharynx, and the occurrence of carious teeth. Among the school children of our large cities, according to medical school inspectors, about one in five, at least, will be found to have glandular enlargements in the cervical region, either anteriorly or posteriorly. Something more than one in ten will be found to be a mouth-breather, because of overgrowth of the adenoid tissue at the back of the mouth. Nearly one in four will be found to be suffering from marked deterioration of the teeth that causes interference with mastication and at the same time proves a fruitful culture medium for micro-organisms of various kinds which are sure to do harm in the lower digestive tract. Recent discussions among dentists call attention to the fact that to a noteworthy extent all of these pathologic conditions in and around the mouths of children may be traced to certain bad habits in the matter of feeding that have been introduced in recent years.

It is the present custom to advise that children shall be fed almost entirely during the second and third years on soft food that is practically liquid in character. Eggs are especially recommended, though milk still constitutes the basis of the diet. Breadstuffs are taken usually after having been soaked or, if not, care is exercised in furnishing the children only with the softer portions of bread. Very few children fail to like crusts if they are tempted to eat them when first allowed starchy materials, but after a time it is rather a difficult matter to tempt them to eat the harder portions of bread at all. Puddings that are given to children are, of course, all soft, and, as meat is practically tabooed, the children's teeth have no proper exercise of the function for which they exist, and without function no organ in the body develops properly or remains long in a normal healthy condition.

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[2] The Journal A. M. A., Aug. 27, 1904, p. 592.

[3] The Journal A. M. A., Sept. 16, 1905.

It was very evidently Nature's intention that some chewing should be done almost as soon as the teeth begin to appear. The child erupts its incisor teeth just about the time that the decreasing milk supply in the mother suggests the necessity for additions of some kind to its diet. After the appearance of upper and lower incisor teeth, suckling usually becomes increasingly difficult, because the child's tendency to chew at something makes the operation uncomfortable for the mother. As pointed out by Dr. J. Sim Wallace,[1] this used to be the signal in past generations for the provision of various materials that needed to be masticated before they could be swallowed. After all, the habit of keeping cows is comparatively modern, and the children of the generations before that of the cow-keeping time had to be supplied with food without this precious adjunct to the child's dietary, which now, it would seem, is likely to be abused because of the readiness with which it can be obtained.

The child's gastrointestinal organs have accommodated themselves very well to the change of diet that has come with advancing civilization. In and around the mouth, however, most pathologic conditions can be traced to the lack of mastication. The lower jaw particularly loses in development because of the failure to exercise its function of crushing food, and as a consequence there is not room enough for the teeth. The crowding of the teeth leads to their decay sooner than would otherwise be the case, and, besides, the best possible cleansing of the teeth comes from the thorough mastication of the food. In the country districts of the poorer countries especially the teeth are excellent all during life as the result of Nature's care for them under the simpler conditions of life. When children are fed entirely on liquid diet, there is, as can easily be understood, none of that cleansing friction that comes from mastication. Once decomposing food has succeeded in bringing decomposition to the teeth themselves, there is the likelihood of infectious agents finding their way into the tissues and causing enlargements of the cervical glands. Nearly always anterior cervical glandular swelling is associated with bad teeth.

The lack of exercise of the jaws leading to deficient development affects also the posterior portion of the mouth and the pharynx. Instead of the effort needed to swallow a material that has been chewed, liquid material flows easily down the throat, and as a consequence there is likely to be an overgrowth of the succulent tissues that would ordinarily be kept in healthy tone by the exercise of the swallowing function and the stimulating friction of the passing bolus. To some extent at least this explains the enlargement of the pharyngeal adenoid tissue, and occasionally too of the tonsils, though probably in the latter case the accessory action of infective agents from decaying teeth is of importance. In a word, a vicious circle of pathologic conditions is formed as a consequence of the lack of proper exercise of the function of mastication. Now that the heated term, with its danger for children in their second summer, is past, it seems wise to recall attention to the benefit likely to accrue from the careful following of Nature in this matter of mastication rather than the too artificial standards of the dietary of an overcivilized period.

A CREDIT TO NEWSPAPERS.

Having in mind the entire dependence of the quacks and nostrum makers for their success on their alliance with the newspapers, and the ready acceptance by most papers of money received from those who murder the unborn as well as from those who plunder the invalid, the medical profession universally feels that the press, in the main, is by no means eager to stop those particular and vicious forms of graft that it finds profitable. Now that genuine effort is at last being made to expose to the world this newspaper graft, the profession will do all it can to support the effort to break up that alliance with the press that alone enables the nostrum vender to become rich by palming off whisky as medicine and morphin as a harmless remedy. In so doing, however, we must not lose sight of the good deeds of journalism. Our quarrel is not with the press, but with one of its actions. Much to the credit of American newspapers of all degrees, whether the metropolitan daily or the hamlet weekly, is their attitude toward the new etiology of yellow fever. Looking over the editorial comments on the New Orleans epidemic made by dozens of newspapers, one is struck by the well nigh universal acceptance of the mosquito theory. A well-established advance in medical knowledge has never been more readily received, nor its teaching more heartily supported. This has resulted in large part from the wise action of the United States Public Health and Marine-Hospital Service in sending out to the press a bulletin recounting in detail the work and experiments of Major Walter Reed in Cuba. Nevertheless, the frank confidence and ready receptivity of the press are most noteworthy and pleasing. It is true that here and there is found a discordant note of unprogressive conservatism, but the proportion is no greater than exists within our own medically trained ranks. The beneficial result to the public health of this hearty support of the press being so very great, the medical profession extends to the newspapers its profound gratitude.

THE CAUSATION OF ARTERIOSCLEROSIS.

The continuance of life depends primarily on the provision, through the blood, of sufficient nutriment of proper character for all of the tissues and organs of the body. Deficiency in either quantity or quality will result at first in derangement of function and ultimately, if maintained, in alterations in structure. Tissues of highest organization will naturally suffer earliest and in greatest degree. The blood vessels are likely to be involved in the morbid process, in part directly from the irritating effects of circulating noxious matters, in part indirectly through the imperfect nutrient supply conveyed by the vasa vasorum. The result will be some form of vascular degeneration, namely, atheroma followed by calcification, or sclerosis, or hypermyotrophy, or a combination of several or all. Arteriosclerosis is a common association of chronic nephritis, of which, it appears, it may be cause or effect or concomitant. Old age, excessive muscular activity and various infectious and toxic processes are also to be considered among the etiologic factors. From a review of current theories regarding the causation of arteriosclerosis, Dr. John M. Cowan[1] concludes that arterial damage may result from many and varied causes. Continued high blood pressure in time invariably affects the vessels, and this is one of the most important causes of widespread disease of the blood vessels. High blood pressure may be secondary to renal lesions or it may originate without any disturbance on the part of the kidneys. Under the latter circumstances it is to be attributed to some derangement of the alimentary tract. Excess, relative or absolute, of food stuffs or of alcohol, intestinal fermentation or putrefaction, hepatic, pancreatic or gastrointestinal insufficiency may thus all be the initial fault. The arteries may be damaged as the result of various intoxications. Metallic poisons—lead, mercury, etc.—comprise one group; bacterial toxins—rheumatism, enteric fever, etc.—another. Bacteria themselves may be present in early lesions. Syphilis is a common cause of local lesions. Severe continued physical activity, however it may act, is probably also a causal factor.

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[1] "The Rôle of Modern Dietetics in the Causation of Disease," London, Baillere, Tindal & Cox, 1905.

PUBLIC INTEREST IN RESEARCH.

The public interest in research and in scientific knowledge of various kinds has a deep significance that augurs well for the future. Mutual understanding between the lay public and scientific men is a highly important and desirable condition. Prof. John M. Coulter,[2] in discussing this subject, makes the following statements: Matter describing scientific research that is now published in popular magazines and in newspapers is scant in amount, sensational in form and usually wide of the mark. There is an increasing desire on the part of the public for information on these subjects. The usual method of presentation is through a middleman, a reporter, who presents the matter in a "popular way," and in so doing makes misleading statements and almost entirely removes the scientific atmosphere. The important need in the situation is for the scientific men themselves to study the popular method of presentation and to provide matter which is at once scientifically correct and interesting to the public. Professor Coulter appears to us to have summarized the situation very well. He calls attention very pointedly to the common misconception of the practical nature of research. When a scientific man brings out a discovery which is of marked commercial value, the laity is apt to comment on the commendable transferal of the investigator's energy from some useless laboratory experiments to a field of practical value. In this there is disregard of the fact that the so-called practical discovery is based on and is the result of, in many cases, years of laborious and patient study, which had been considered by the average layman pure waste of time. Professor Coulter urges that interesting scientific articles by competent men will show research to be practical, will secure endowment for further research, and will secure harmonious co-operation between the various persons interested.

REFORM IN CHARITABLE INSTITUTIONS.

Events in many parts of the country indicate the increasing interest of the medical profession in the conduct of charitable institutions. As organization becomes steadily more complete we are certain to exercise an increasing influence in this direction. A few months ago The Journal[1] suggested that each State Medical Association create a committee whose duty it should be to keep close and conscientious watch over the eleemosynary institutions of the state, having an eye particularly to securing scientific medical care for the inmates and graft-free administration. In more than one state this suggestion has been well received. President Halderman of the Ohio State Medical Association in his annual address strongly recommended the appointment of such a committee. Of course the "machine" politicians everywhere have medical friends through whom may be expected subtle efforts to keep the attention of physicians away from these "sores." The interest of the profession in this matter, however, is so direct and so great that its progress will not be stayed. In Illinois, reform from another source has just dawned in the appointment by Governor Deneen of the new Civil Service Commission. The character and past record of the appointees ensures genuine civil service among the employes of the charitable institutions of the state. The commission at its first meeting outlined a program of careful investigation and of practical execution of the new law. Their efforts to bring the Illinois institutions up to a high level of honesty and efficiency will be closely observed and heartily supported by the medical profession.

ANOTHER SETBACK FOR THE ALCOHOLIC NOSTRUMS.

These are busy times for the manufacturers of the alcoholic nostrums. Two powerful lay publications are conducting a steady and winning campaign against the use of these "hypocritical cocktails," and now the United States government has taken a hand. The Commissioner of Internal Revenue, John W. Yerkes, on September 12, officially notified collectors of internal revenue that, after Dec. 1, 1905, the manufacturers of these compounds will be called on to pay the special tax for rectifiers and liquor dealers, while the retailer must pay the special tax for liquor dealers. The ruling holds that the tax must be paid by manufacturers of every compound in which any added drugs are in such small quantity as to have no appreciable effect on the alcoholic liquor of which the preparation is largely composed. It is further held that the tax applies to "remedies" in which the added drugs, no matter what their quantity, are not of a nature to impart any medicinal character to the alcoholic liquor. When the contained drugs really are medicinal no tax will be demanded. In deciding individual cases under this ruling the manufacturer's formula will not be accepted as final. There will be a chemical examination of samples bought in the open market and analyzed in the Washington laboratories. It will thus be seen that each nostrum will come up for interpretation of its character and that discretion will be observed in the classification of any particular compound. It is earnestly to be hoped that publicity will be given to the analyses and decisions in each case, for the workings of this new ruling will be very interesting both to the profession and to the general public. If this interpretation of the statute is strictly enforced it will be a decided help in the effort to protect people from one of the most dangerous classes of popular nostrums. If it results in drawing on druggists the attention of state revenue officers and anti-saloon league workers more than heretofore has been the case, great good will come. In spite of all this assistance, however, we must not abandon the agitation to have Congress, by statute, require, under severe penalty, that every nostrum label shall state truthfully the contents of the bottle.

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[2] Popular Science Monthly, August, 1905.

[1] Practitioner, August, 1905, p. 203.

[1] The Journal, March 11, 1905, p. 796.

Medical News

ILLINOIS.

Personal.—Dr. John G. Franken, Chandlerville, is slowly recovering from injuries recently sustained in a runaway accident.——Dr. Roy F. Rogers, Shelbyville, has returned from his trip to Europe.

Hospital Under Way.—The Taylorville Hospital Association has already raised $6,218 toward its building fund, and by October 1 the entire amount required of $10,000 is expected to be raised. Bids for construction of the hospital were opened September 20.

Case Against Physicians Failed.—In the damage suit brought by George Gillogly of Mount Carroll against Drs. Firestone, Karcher and Bushnell, Freeport, for alleged malpractice, the plaintiff did not make out his case and the judges entered an order to dismiss the suit.

Municipal Control of Milk Supply.—At a receent meeting of the Sangamon County Medical Society resolutions were adopted favoring the municipal control of the milk supply of Springfield, which, it was stated, is absolutely necessary in order to preserve the life and health of all, especially children and invalids.

County Hospital Examination.—Examinations of candidates for positions on the resident staff of Cook County Hospital will begin in Chicago September 28. Those who pass will be placed on the civil service eligible list and will be assigned places on the staff when vacancies occur. Dr. Fernand Henrotin is chairman of the examining board.

Endowment Conditions Changed.—A permanent hospital building for Canton is assured as the Misses Graham have agreed to purchase a site and erect a building to cost about $15,000 and to accept as an endowment fund the amount already raised by public susbscription (about $10,000), instead of $20,000, as provided in the original agreement.

Chicago.

Cocain Seller Fined.—Paul Zito, proprietor of two drug stores, and Joseph Moell, a clerk employed in one of these stores, were each fined $100 and costs for selling cocain; both have appealed.

Health Laboratory at Last at Rest.—After having received seven orders to vacate its quarters in the City Hall, after having six times succeeded in getting the order revoked, and after having secured locations in at least two other buildings, the laboratory of the health department has finally moved from the fourth floor of the City Hall to the Galbraith building, Madison and Franklin streets.

Unlicensed Practitioners in Trouble.—On September 13 Fred L. Orsinger was fined $200 and costs, and Anna Brickler $100 and costs for practicing medicine without license. The prosecution was undertaken by the State Board of Health.——Mrs. Barbara Bolle, who was accused of practicing medicine without a license and who failed to appear when the case was called, was sent to the county jail September 15, where she will be held for 90 days unless the judgment of $200 entered against her is paid.

Deaths of the Week.—During the week ended September 16. 514 deaths were reported, equivalent to an annual death rate of 13.46 per 1,000; 14 more deaths occurred than in the previous week, and 71 more deaths than in the corresponding week of 1904. Among the principal causes of death were: Acute intestinal disease, 113; consumption, 55; heart diseases, 48; violence, including suicide, 39; pneumonia and nephritis, each 34, and cancer, 26. The increase in mortality as compared with last year is 7.8 per cent., is due almost entirely to the increased prevalence of acute intestinal diseases among children under 5 years of age, caused by the frequent heavy rainfalls, followed by relatively high temperature for this season.

Personal.—Dr. O. P. Johnstone, fellow in pathology at Rush Medical College, has been appointed to the chair of pathology in the University of Colorado, Boulder.——Dr. Robert H. Babcock has returned from his summer home in Green Lake.——Dr. Henry Carey, late interne at Wesley Hospital, has been appointed a member of the staff of the Michigan State Hospital, Kalamazoo.——Dr. George F. Butler, professor of materia medica, therapeutics and clinical medicine in the College of Physicians and Surgeons, has resigned.——Dr. and Mrs. Julien E. Hequembourg have returned from the Pacific coast.——Dr. Nicholas Senn has been reappointed surgeon-general of Illinois, with the rank of colonel.——Dr. and Mrs. Oscar J. Price have returned from Europe.——Dr. and Mrs. E. C. Dudley have returned after a summer in Wyoming.——Dr. Edmund J. Doering spent the summer in the Catskill Mountains

INDIANA.

Dr. Thomas Acquitted.—Dr. William T. Thomas, Marion, who was arrested August 25, charged with a criminal operation on Ida Gaston, who died in Indianapolis the day before, was acquitted August 31, the judge stating that no evidence against Dr. Thomas existed.

Medical Society Library.—The Vigo County Medical Society has appointed a committee consisting of Drs. Knowlton, Julius R. Young and Bennet V. Caffee, to consider the advisability of establishing a medical library, space for which is expected to be obtained in the Emeline Fairbanks Library, Terre Haute.

Old Physicians.—Dr. William H. Wishard, Indianapolis, thought to be the oldest practicing physician in Indiana, is now nearly 90 years old and still answers professional calls.——Dr. Hubbard M. Smith, Vincennes, poet, historian and physician, celebrated his eighty-fifth birthday anniversary September 6.

Personal.—Dr. George D. Kahlo, Indianapolis, has returned from Europe.——Dr. Austin Funk, New Albany, sailed September 6 on the *Oceanic* for England.——Dr. B. H. B. Grayston and family, Huntington, have returned from an extensive western trip.——Dr. William H. Smith, Rushville, underwent an operation at the Ricketts Hospital, Cincinnati, and is reported to be making favorable progress toward recovery.

Knox County Hospital.—At a meeting of the Knox County Council at Vincennes September 5, an appropriation of $25,000 was made for the erection of the county hospital. A site has been secured in South Vincennes, which has been deeded to the county on the condition that it should appropriate enough money for the erection of the building. The Clark-Gibault Hospital Association will turn over about $5,000 to the fund. It is probable that work on the building will begin at once. It is expected to cost $50,000.

Madison Gets Hospital.—Madison has been selected as the location for the new Southeastern Hospital for the Insane. A tract of land has been accepted comprising about 393 acres on a site 346 feet above the level of the Ohio River. The provisions under which the site was accepted are as follows: That good water will be furnished the institution in sufficient quantity; that the commission will be given provilege of selecting whatever portion of the land offered it desires; that the price for the land be less than was originally specified; that the Pennsylvania Railroad construct switches to connect wit hthe institution; that the title of the land shall be approved by the attorney-general; that streets leading to the proposed site of the hospital be improved by the city, and that the site shall be given to the commission within a specified time.

KANSAS.

Hospital Dedicated.—St. Mary's Hospital, Winfield, was formally dedicated September 3 by Bishop Hennessy of Wichita. The hospital has thirty rooms and is equipped with modern conveniences and appliances.

Personal.—Dr. D. W. Manson, Burlington, left on August 28 for Central America.——Dr. G. H. Hoxie, dean of the Kansas University School of Medicine, has removed to Kansas City.——Dr. W. F. Kuhn, El Dorado, has been appointed superintendent of State Hospital No. 4, Nevada, Mo.

Fever in State Hospital.—Typhoid fever has developed at the Topeka State Hospital for the Insane. Five employes and one inmate are ill with the disease. The superintendent believes that the ice supply of the institution, which is obtained from the Kansas River, is responsible for the epidemic.

Kansas University Hospital.—A contract has been awarded for the erection of the medical pavilion, which is to be the first building of the Eleanor Taylor Bell Memorial Hospital at Rosedale. It is proposed to build the other four buildings, one each year. The next building to be constructed will be the surgical pavilion; the third an isolation ward, and the other two will be ward buildings for general patients, all buildings being grouped around the central medical pavilion. The latter will accommodate forty patients.

LOUISIANA.

Personal.—Dr. Clarence Pierson, Alexandria, has been appointed superintendent of the Insane Asylum of the State of Louisiana, Jackson.

Physicians Take Outing.—Through the courtesy of the board of park commissioners, Dr. Rudolph Matas entertained on September 10, on board the tug *Samson*, Dr. White, United States Public Health and Marine-Hospital Service; Professor Boyce, the English scientist, and others.

Presentation to Dr. Hays.—On August 31 the employés of the Insane Hospital of the State of Louisiana, Jackson, presented Dr. George A. B. Hays, late superintendent of the institution, with a handsome silver loving-cup. Dr. Hays left September 1 for Alexandria to take charge of the new state hospital near Pineville.

MAINE.

Personal.—Dr. Eben Alden and wife, Rockland, are spending the summer in Europe.——Dr. John T. Dilling, Sprague's Mills. was seriously scalded about the face, hand and arm, and also inhaled steam, in a railway accident at Gardiner.

Hospital Notes.—A gift of $4,000 has been received for the Maine Sanitarium, Portland.——The Bar Harbor Medical and Surgical Hospital has been enlarged to twice its former size, at a cost of about $10,000.——The Japanese envoys have endowed two beds in the York Hospital.

Promises to Reform.—Theophilus Neilson of New York City, who owns a summer cottage in York Harbor. and has been practicing osteopathy there. was arrested August 24 on a warrant sworn out by Dr. William J. Maybury, Saco, secretary of the Maine Medical Registration Board, charged with violating the medical registration law. On his agreeing to discontinue the use of the prefix "Dr." he was allowed to go on his own recognizances.

Maine's Vital Statistics.—During 1904 the state registrar of vital statistics reports 11,009 deaths, 336 more than for the previous year, and 15,130 births, or 36 less than for the preceding year. The death causes which show an increase for the year are: Influenza, 74; nervous diseases, 70; diarrheal diseases, 68; typhoid fever, 63; nephritis, 62; whooping cough, 59; heart diseases, 56; rheumatism, 13; pneumonia, 12; diabetes, 9; measles, 8, and scarlet fever, 5. A decrease in deaths was noted in: Tuberculosis, 89; bronchitis, 32; peritonitis, 26, and cancer, 17.

MARYLAND.

Union of Schools.—A movement has been set on foot for a union of the schools of the University of Maryland, St. John's College, Annapolis, and the Maryland Agricultural College into a state university. A committee has been appointed to draw up a plan, of which Dr. Randolph Winslow is the representative from the School of Medicine of the University of Maryland.

Hospital Work Begins.—The Washington County Hospital Association has begun operations at Hagerstown on a moderate scale under Miss M. Grace Matthew, a trained nurse. At a meeting of the county medical society September 14 Mr. Edward W. Mealey, its benefactor, explained its plans and scope. At present only accidents, acute and subacute cases are admitted.

Faculty Meeting.—The one hundred and seventh semi-annual meeting of the Medical and Chirurgical Faculty of Maryland will be held at Deer Park, September 21 and 22. Matters to be brought before the next legislature, which convenes in January, will be brought before the house of delegates, especially a new medical practice act, new laws governing medical inspection in the counties, and a law regulating the practice of midwifery. The annual address will be delivered September 22 by Dr. Charles A. L. Reed of Cincinnati on "The American Family." Dr. W. S. Thayer, Baltimore, will also deliver an address on "Some Public Duties of the Physician." There will be a series of brief reviews of recent medical progress by Drs. Thomas B. Futcher, Frank Martin, Guy LeR. Hunner, and Frank D. Sanger, all of Baltimore; Dr. Harvey W. Cushing, Baltimore, will speak of palliative operations in intracerebral tumors; Dr. Frank J. Kirby, Baltimore, on thyroid tumors; Dr. Henry O. Reik, Baltimore, on eight cases of lateral sinus thrombosis and the advisability of ligating the internal jugular vein before opening the sinus, and Dr. James M. H. Rowland, Baltimore, on artificial interruption of pregnancy in toxemia, time and methods. The Allegany and Garrett county medical societies will entertain the members of the Faculty on the afternoon of September 22 with drives over the mountains.

Baltimore.

Typhoid.—The number of reported cases of typhoid fever for the week ended September 16 was 34, a decided decrease: deaths from the same disease, 9.

Library to Be Made Useful.—The library of the College of Physicians is to be put on a working basis. A librarian has been appointed and several hundred volumes have been collected.

Personal.—Dr. William Hewson Baltzell, now in Paris, will spend the winter in India.——Dr. Edwin Geer, commander of the Maryland Naval Reserves and surgeon of the fire department, while attempting to board a car on September 6 fell and was severely injured about the nose and face.——Dr. Edward J. Bernstein has removed to Kalamazoo, Mich., and Dr. Milton R. Walter to Chicago. Both have been connected heretofore with the University of Maryland Medical School.

MASSACHUSETTS.

Embalmers' Board Established.—Under the new state law a board of embalming has been established. Henceforth every undertaker who practices embalming must have a license, for which he must pay $5. Those in practice three years are passed, while future applicants must pass an examination by this board.

Boston Death and Disease.—For the ten weeks ended September 9 there were reported to the Boston Board of Health 2,216 deaths, as against 1,962 during the same period in 1904, and an average annual death rate of 18.50 per 1,000. Of these deaths 645 were of infants under one year, 836 of children under 5, and 406 of individuals over 60 years. There were 222 cases of diphtheria, with 15 deaths: 81 of scarlet fever, with 2 deaths; 219 of typhoid fever, with 28 deaths; 148 of measles, with 6 deaths; 403 of tuberculosis, and 215 deaths: 114 deaths from pneumonia, 11 from whooping cough, 186 from heart disease, 30 from bronchitis, and 77 from marasmus.

Good Work of Floating Hospital.—The Boston Floating Hospital's season of ten weeks ended September 13. During this time 279 patients were cared for in the four permanent wards, with 90 deaths: 90 were discharged well, 71 relieved and 28 not relieved. Of the 90 deaths 26 occurred within forty-eight hours after admission. On the last day 11 patients were transferred to the New England Hospital for Women and Children and 5 to the Children's Hospital. In the open ward, upper deck, 686 patients were cared for from 9 a. m. to 4 p. m. They made 2,374 trips, an average of 47 per day. Diplomas were given to the graduate house officers, Drs. Alpha R. Sawyer and Alexander O. Fasser, to the externe in charge of day patients, Dr. W. A. Dutcher, and to 23 nurses who successfully completed the postgraduate course in the hospital.

MICHIGAN.

Large Endowment for Hospital.—By the will of the late Mrs. Julia E. Hackley, Muskegon, $300,000 is devised to the Hackley Hospital, Muskegon.

Hospital Note.—The Northern Michigan Hospital, Calumet, will be reopened about the end of September, on the return of

Dr. Charles J. Sorsen from Germany.——Dr. Peter J. Noer, formerly of Menominee, has completed a hospital building at Wabeno at a cost of $15,000.

May Be "Read Out" in Meeting.—The secretary of the Pontiac Medical Society has been ordered to keep a scrapbook in which he will paste all press notices regarding members of the society. These notices are to be read at the monthly meetings and explanations from the advertised members will then be in order.

Settlement of Contagious Disease Expenses.—Judge Perkins, Grand Rapids, rendered a decision September 7 in the Circuit Court, which defines what portion of the expense incurred from dangerous contagious diseases shall be borne by the county and what by the immediate community in which the infection exists. He holds that the expense of investigation preliminary to determining the nature of the disease, isolation, quarantine, disinfection, fumigation, or any service performed for the good of the general public, must be paid by the board of health, while expenses for medical attendance and nursing are chargeable to the county.

July and August Mortality.—During July the number of deaths reported was 2,482, an increase of 88 over June, and during August, 2,797, an increase of 315 over the preceding month. The respective death rates for July and August were 11.5 and 12.9 per 1,000. The deaths of infants under one year numbered 506 in July and 687 in August; of children from 1 to 4 years, 166 in July and 236 in August, and of individuals over 65, 678 in July and 702 in August. Almost the entire increase in mortality in August was due to the high mortality among children under 5 years of age. The more important causes of death were as follows: Tuberculosis, 196 in July and 203 in August; typhoid fever, 45 in July and 59 in August; diphtheria, 32 in July and 22 in August; measles, 10 in July and 4 in August; whooping cough, 15 in July and 19 in August; pneumonia, 65 in July and 51 in August; diarrheal diseases of infants, 204 in July and 422 in August; accidents and violence, 214 in July and 231 in August; cancer, 143 in July and 141 in August, and smallpox, 4 in July and 6 in August. Eight deaths were reported from tetanus in July, and seven of these were ascribed to the toy pistol. Two deaths from tetanus were reported in August.

Personal.—Dr. Francis H. Callow, Mount Morris, returned from England August 12.——Dr. Henry J. Hartz, Detroit, has been appointed a member of the board of trustees of the State Sanitarium for Tuberculosis.——Dr. John V. Frazier, Lapeer, has been appointed first lieutenant and assistant surgeon, M. N. G., and assigned to the Third Infantry.——Dr. Joseph B. Whinery, Grand Rapids, has been appointed a member of the Board of Health.——Dr. Thomas M. Koon, Grand Rapids, has been re-elected health officer at a salary of $1,800.——Dr. Ralph C. Apted has been appointed city physician of Grand Rapids at a salary of $1,800.——Dr. Frank B. Gray, Clare, has been appointed a member of the board of establishment and control of the state sanitarium for consumptives.——Dr. William L. Bishop, Bay City, has moved to Salt Lake City, Utah.——Dr. Alexander McK. Campbell, Grand Rapids, has been elected president of the Board of Health and Poor Commissioners.——Dr. Clarence L. Gorsline, Battle Creek, was operated on for appendicitis September 13.——Dr. Alexander Magill, Midland, who is moving to Bay City, was presented by the Midland County Medical Society, of which he is president, with a gold-headed cane, suitably engraved, at a banquet given in his honor September 7.

MISSISSIPPI.

Appropriation for Hospital.—The city council of Greenville has appropriated $3,000, to be paid in December to the King's Daughters' Hospital.

Illegal Sale of Cocain.—A druggist in Greenville was recently fined the maximum amount of $500 and six months in jail for selling cocain regardless of the statute, which forbids its sale except on prescription of a licensed druggist. This particular individual was said to have sold from $10 to $12 worth of cocain a day.

Amendment to Charter.—The Jackson Hospital Company, a corporation with its domicile in Jackson, has petitioned that its name be changed to the Jackson Sanitarium and Training School for Nurses, and that its charter shall be so amended as to give the corporation the additional power and authority to conduct the training school for nurses.

Personal.—Dr. John R. Tackett, Meridian, a member of the executive committee of the State Board of Health, is assisting Dr. John F. Hunter, secretary of the board, with the executive work of his office.——Dr, Percy W. Toombs has been appointed health officer of Greenville.——Dr. Walter Merritt, Jackson, has been elected third assistant physician of the State Insane Hospital, Jackson.——Dr. Harry H. Harrison, Jackson, has been appointed a member of the State Board of Health; Dr. Osborn M. Turner, president of the Jackson Sanatorium, and Dr. Ethelbert H. Galloway, city physician of Jackson, all vice Dr. John H. Rhodes, deceased.——Dr. Samuel H. McLean has been elected vice-president and Dr. Ethelbert H. Galloway, secretary, of the Jackson Sanatorium.

MISSOURI.

Personal.—Dr. Claude C. Crowley has been elected president, and Dr. Robert Sevier, clerk, of the Richmond Board of Health. Drs. Charles B. Shotwell and Elmer T. McGaugh are the other members of the board.

Typhoid at State University.—Typhoid fever is reported as epidemic at the State University, Columbia. Since the beginning of the epidemic seventy-one cases have been reported, with one death.

Doctor Released.—In the case of Dr. Elizabeth Short, Kansas City, charged by the coroner with having performed a criminal operation on Mrs. Louise O'Leary from the effects of which she died, the defendant was discharged August 19 because of lack of sufficient evidence.

Mount Vernon Gets Sanatorium.—At the meeting of the board of commissioners in St. Louis September 4, Mount Vernon was selected as the location of the new Missouri State Sanatorium for the Treatment of Incipient Pulmonary Tuberculosis. Mount Vernon's offer included a site of 165 acres, valued at $8,500, a bonus of $7,000 in cash, water and electric lights free of charge to the state for five years, and free telephone service.

Personal.—Dr. Frederick L. Deck, St. Louis, has returned from a trip to Japan.——Dr. Ira C. Young, St. Louis, has been appointed lecturer on orthopedic surgery at the St. Louis College of Physicians and Surgeons.——Dr. and Mrs. John A. James, St. Louis, have returned from Europe.——Dr. George James P. McNeil, house surgeon at the M. K. & T. Hospital, Sedalia, returned August 31 from Europe.——Dr. Frank S. Vernon, Charleston, has been re-elected physician at State Hospital No. 4, Charleston, for a term of two years.——Dr. Emil H. Henckler, vaccine physician, St. Louis health department, was appointed physcian-in-charge of the North End Dispensary September 1, succeeding Dr. Franz J. T. Specht, resigned.

St. Joseph.

Asylum Pavilion Opened.—The new Carey building, a pavilion for women at State Hospital No. 2, was formally opened September 6.

Gift to Library.—Dr. Jacob Geiger has presented to the library of the Medical Department of the St. Louis University a complete set of Virchow's archives, comprising 170 volumes.

Personal.—Dr. Louis J. Dandurant has had conferred on him the degree of master of arts by the faculty of Conception (Mo.) College, August 25.——Dr. Peter J. Kirschner was admitted to State Hospital No. 2, August 31 as a private patient.——Dr. Samuel F. Kessler was elected president, and Dr. Luther A. Todd, secretary, of the Northwest Missouri anatomical board, organized under the state law for the purpose of securing subjects for dissecting purposes for the local medical college.

NEW JERSEY.

Agree Not to Accept Contract Work.—"Every physician in Trenton has signed an agreement not to accept contract lodge work in any form," says the August number of the *Pennsylvania Medical Journal.*

Personal.—Dr. Wesley R. Wales, Cape May, who was indicted in the United States District Court for misapplying $16,000 funds of the First National Bank of Cape May, was acquitted September 16 after the jury had deliberated only fifteen minutes.

Sanitary Milk Plant for Camden.—Stimulated by the results achieved by sanitary milk plants in the neighboring cities, the city of Camden started a movement to establish a similar plant in that city. The subject was first considered by the Camden City Medical Society. The public records of Camden show that the death rate of children under 5 years of age during the past twelve months exceeded 36 per cent. of the whole number born during the same period. The bacteriologic examinations of the Camden milk supply show that a large number of the deaths are among children, due to milk contamination. A company has been organized with medical men at its head. The officers are as follows: President, Dr. Alexander McAlister; vice-president, Dr. A. Haines Lippincott; secretary, Dr. Howard F. Palm; treasurer, M. F. Ivins; counsel, Thomas P. Hurley; chemist, Paul H. Langner, and veterinary inspector, Dr. J. O. George.

NEW YORK.

Donation to Hospital.—The Brooks Memorial Hospital, Dunkirk, has received a first-class hot-water system costing $2,000 through the generosity of Mr. M. L. Hinman.

Buffalo Personals.—City Bacteriologist William G. Bissell has been delegated to represent the health department at the American Public Health Association.——Dr. Charles Cary is taking an automobile trip through the eastern states.

Loses Suit.—In the suit brought by Dr. Clarence V. Grey, Elba, against the town of Darien to recover $100 for medical services rendered an alleged pauper, on September 1 the jury returned a verdict of no cause of action and judgment with costs was entered against the plaintiff.

Complies with Law.—In compliance with the provision of the law requiring physicians to register in counties in which they practice, Dr. Welcome L. Filkins, Albany, who had been charged by representatives of the Madison County Medical Society with a violation of the public health law, was discharged from custody.

Hospital Incorporated.—The Eastern Long Island Hospital Association of Suffolk County has been incorporated to maintain a hospital and dispensary. Among the directors are the following physicians: Drs. Barton T. Skinner, Clarence C. Miles and Arthur C. Loper, Greenport; Dr. Frank E. Benjamin, Shelter Island, and Dr. J. M. Hartranft, Southold.

The Work of the Mission.—The Fresh Air Mission, Buffalo, in its report of work done during the summer at Cradle Beach, showed that 698 children were received through the regular two weeks' outings and that 51 others were cared for at St. Margaret's Convalescent Cottage. The hospital at Athol Springs has been almost full since the opening day.

Personal.—Dr. George E. Beilby, resident physician at the State Industrial School, Rochester, has resigned.——Dr. and Mrs. Florence O. Donohue, Syracuse, returned from Europe August 13.——Dr. William R. Wells, Mount Morris, received the congratulations of his friends August 18 on the eighty-sixth anniversary of his birth.——Dr. Albert L. Beahan, Canandaigua, was operated on for appendicitis August 25 and is doing well.——Dr. Mary Clayton, Ogdensburg, has been appointed physician at the Binghamton State Hospital, to succeed Dr. Mary O'Malley, resigned.——Dr. Charles I. Redfield, Middletown, has been elected a member of the medical board of Thrall Hospital, vice Dr. David B. Smiley, deceased.——Mr. Alec. H. Seymour, Binghamton, has resigned the clerkship of the Broome County Surrogate's Court to accept the secretaryship of the State Board of Health, succeeding Dr. William E. Johnson, Waverly.——Dr. Henry L. Elsner and family, Syracuse, returned from a trip to Scandinavia August 30.——Dr. C. H. Glidden, Little Falls, has been appointed health officer of Little Falls.——Dr. Nathan Jacobson and family, Syracuse, returned from Europe September 2.

New York City.

Bequest for Hospital.—Among the numerous charitable institutions benefited by the will of the late Edward Whelan is St. Mary's Hospital, Brooklyn, which received $5,000.

New Hospital Busy.—The St. Gregory's Free Hospital and Ambulance Station, which was opened at 93 Gold Street on June 9, has treated more than 3,500 cases since that time and at present receives on the average 75 emergency and accident cases a day.

Typhoid Fever Decreasing.—The latest report of the health department shows a decrease of 47 cases of typhoid fever in the city in the week. The prevalence of this disease was greatest during the last week in August, but the death rate at the present is almost normal.

Harvey Society Lectures.—The first lecture of the recently organized Harvey Society will be given by Prof. Hans Meyer, who will speak in German, on "The Theory of Narcosis," October 7, at 8:30 p. m., in the New York Academy of Medicine. The second lecture will be given October 14, at the same hour and place, by Prof. Carl von Noorden of Frankfort, on "Modern Problems of Metabolism." The lecture will be delivered in English.

In Trouble.—For swindling the poor folks of the East Side, posing in the guise of a healer of the sick, Alfred Meyer, a former convict, was sentenced August 4 in the Court of Special Sessions, Manhattan, to imprisonment for eleven months in the penitentiary on Blackwell's Island and to pay a fine of $500.——David Antonio, a "voodoo" doctor, on August 31 was sentenced to imprisonment for six months for practicing medicine without a license.

Heavy Fine for Milk Dealer.—On September 8 a new justice had his first experience with offenders against the pure milk ordinances. In the first case, in which a plea of guilty was entered, a fine of $75 or thirty days in the Tombs was imposed. Ten of the other offenders pleaded guilty, preferring to have their cases postponed until some other justice presided. Those held were warned that another plea of guilty would mean imprisonment with no alternative fine.

Notes from Quarantine.—There were seventeen persons removed from the Panama steamer *Mexico,* who were sent to Hoffman's Island for observation. This is the largest number taken from a canal zone steamer in several months.——The yellow fever patient at Hoffman's Island shows signs of improvement, and it is believed that he will recover.——The Hamburg-American liner *Moltke* brought no steerage passengers, a case of cholera having appeared among the Russian immigrants at Hamburg.

Personal.—Mr. and Mrs. Arthur S. Chittenden arrived on the *La Bretagne,* from Havre, September 12.——Dr. and Mrs. Edward P. Kinnicutt arrived from Antwerp on the *Kroonland* September 12.——Dr. Vincenzo Sellaro has been threatened with death by the Black Hand if he does not surrender $5,000 to them.——Dr. Hugh C. Parmenter was removed from his position as senior surgeon at Harlem Hospital by order of Superintendent Armstrong of Bellevue and allied hospitals, on the charge of abusing the father of a patient in the hospital. Dr. Parmenter has appealed and hopes to have the case reinstated.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended September 2, 670 cases of tuberculosis, with 147 deaths; 282 cases of typhoid fever, with 21 deaths; 144 cases of diphtheria, with 13 deaths; 122 cases of measles, with 11 deaths; 48 cases of scarlet fever, with 2 deaths; 18 cases of cerebrospinal meningitis, with 8 deaths; 7 cases of varicella and 1 case of smallpox. For the week ended September 9, 396 cases of tuberculosis, with 146 deaths; 184 cases of typhoid fever, with 23 deaths; 117 cases of diphtheria, with 14 deaths; 95 cases of measles, with 7 deaths; 48 cases of scarlet fever, with 2 deaths; 12 cases of cerebrospinal meningitis, with 12 deaths; and 8 cases of varicella.

NORTH CAROLINA.

Medical College Opened.—The Department of Medicine of the University of North Carolina, Raleigh, opened for its fourth annual session September 11.

Vital Statistics.—The mortuary reports for July from 21 towns show that 290 deaths have been reported, equivalent to an annual death rate of 22.6 per 1,000. Diarrheal diseases caused 73 deaths; consumption, 33; typhoid fever, 25; heart diseases, 14, and brain diseases, 11. Of the 290 deaths 129 were of children under 5 years of age.

Personal.—Dr. Edward C. Register, Charlotte, has spent the summer in Europe.——Dr. Eugene B. Glenn, Asheville, has ben made major surgeon of the N. C. N. G., and assigned to the First Infantry.——Dr. William DeB. MacNider, Raleigh, has been elected professor of pharmacology and bacteriology in the Department of Medicine of the University of North Carolina.

NORTH DAKOTA.

Personal.—Dr. W. G. Brown, Fargo, formerly of St. Cloud, Minn., has recently returned from Europe.——Dr. S. G. White has located in Minot.

Illegal Practitioners Arrested.—Dr. J. H. Sweeney was recently arrested at Lehr, McIntosh County, and fined $50 for practicing medicine without a license.——Dr. J. Bergstrom, Cooperstown, was fined $50 for a similar offense.

Medical College Opened.—The Medical College of the University of North Dakota will open September 26. The dean announces that the university laboratories, equipment and instruction have been so arranged as to offer a combination of two years of academic work and two years of premedical work, so that the certificate of graduation from the academic department will admit students to the third year in the medical college.

OKLAHOMA.

Personal.—Dr. Leopold Kaffle, Oklahoma City, has been made assistant physician at the Insane Asylum of the State of Louisiana, Jackson.

Hospital Closed.—The Oklahoma City Hospital, Guthrie, one of the important institutions of the city, was closed July 31, owing to disagreement of the staff regarding its management, and the patients were removed to St. Anthony's Hospital.

Hospitals Incorporated.—The Mangum Hospital has been incorporated with $10,000 capital stock.——Dr. John H. Scott has opened a nineteen-room hospital at Shawnee.——The Woods County Hospital Association has been incorporated at Alva with a capital stock of $10,000.

Asylum Investigation.—The committee appointed to examine the conditions existing at the Norman Sanitarium has reported that there has been no ill-treatment, but that the number of attendants is insufficient, that the sanitary facilities should be greatly improved, and that the colored and white patients should be kept in separate wards.

Law Not Retroactive.—The attorney-general has rendered an opinion in answer to a request regarding the osteopathic practice law, whether or not those who were practicing when the law went into effect would be required to take an examination. The attorney-general gives as his opinion that those who were in practice prior to March 17, 1903, need not be examined.

State Association Chartered.—A charter was issued July 31 to the Oklahoma State Medical Association. The headquarters of the association are at Guthrie, and the following are the officers and incorporators: Dr. Richard H. Tullis, Lawton, president; Dr. Eugene O. Barker, Guthrie, secretary and treasurer, and Drs. W. E. Dickens, Enid, James M. Bonham, Hobart, and J. Henry Barnes, Jet.

PENNSYLVANIA.

Meeting of the State Medical Society.—The annual meeting of the State Medical Society will be held at Scranton, September 26, 27 and 28. The address in medicine will be given by Dr. Solomon-Solis Cohen, Philadelphia.

Typhoid at Nanticoke.—Typhoid continues prevalent in Nanticoke and new cases are still being reported. Dr. Frederick C. Johnson of the State Board of Health is investigating the cause of the epidemic and has charge of the fight against the disease. There were 27 new cases reported September 13. Altogether 212 cases have been reported.

Reading Relief Report.—The statement of the Philadelphia & Reading Railroad Relief Association for the month of July shows an expenditure of $19,907.20, of which $8,950 was paid for deaths and $10,957.20 for disability. The number of deaths was 17; 5 were accidental and 12 from natural causes. The number of new cases reported was 1,035.

School Teachers Asked to Observe Health Laws.—Apropos of the opening of public schools September 11 Dr. Samuel G. Dixon, state commissioner of health, has communicated with the principals of all the public, private and parochial schools throughout the state, calling their attention to the statute requiring all pupils to be successfully vaccinated before being admitted.

Philadelphia.

Visitors from Abroad.—Dr. Raymond Santos of Lisbon, Portugal, visited the city hospitals and medical schools last week.——Dr. Charles Keys, a resident of Brazil, is paying a visit to this city.

Medical Inspection in August.—The report of the division of medical inspection of the Bureau of Health for August shows that there were 14,486 inspections made, excluding schools; that 372 fumigations were ordered; 5 cases presented for special diagnosis; 60 cultures taken for examination; 60 injections of antitoxin given, and 892 vaccinations performed.

Health Report.—The deaths reported from all causes during the week ended September numbered 399. This is an increase of 25 over the number reported for the previous week and a decrease of 9 from the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 10; diphtheria, 4; tuberculosis, 65; cancer, 17; meningitis, 2; apoplexy, 12; heart disease, 34; acute respiratory disease, 23; enteritis (under 2 years), 44; enteritis (over 2 years), 5; nephritis, 27; suicide, 6; accidents, 23, and marasmus, 20. There were reported 166 cases of contagious disease, with 16 deaths, as compared with 196 cases and 17 deaths in the previous week.

RHODE ISLAND.

Receiver Appointed for Hospital.—Dr. Thomas H. McNally, mayor of Central Falls, has been appointed temporary receiver of the Pawtucket General Hospital.

For the Benefit of the Tuberculosis Camp.—The fête of Mr. and Mrs. Frederick W. Vanderbilt, Newport, August 15, netted $13,500 for the tuberculosis camp at Pine Ridge.

Medical Inspectors of Schools.—The Providence Board of Health has decided to appoint two physicians to visit private schools and see that the children in attendance are afflicted with no contagious disease. A physician is also to be detailed for duty at the office of the health board to examine such children as may be sent there from the public school.

Hospital Opened.—The two new wings of the Woonsocket Hospital, one of which was the gift of Mrs. Mabel Rathbun Jenckes, wife of Dr. Frank H. Jenckes, and the other built with funds raised by different public entertainments for the benefit of the hospital, were opened recently for public inspection. The hospital itself has been remodeled and newly equipped.

Twin City Hospital.—The first meeting of the board of directors of the Twin City Hospital was held at Pawtucket September 4, when the following were confirmed as a permanent hospital staff: Surgery—Drs. William L. Harris, Richard P. Boucher, Providence, and Raynor Woodhead, Valley Falls; Medicine—Drs. Thomas H. McNally, Central Falls, and William O'Brien; Gynecology—Drs. William H. Heimer, Pawtucket, and Joseph Myre, Central Falls; Eye, Ear, Nose and Throat—Dr. Henry M. Jewett, Providence.

GENERAL.

Smallpox in Cuba.—A fatal case of smallpox in a child has been reported from the village of Palma Soriano, in the province of Santiago.

The Association of Erie Railroad Surgeons.—This association held its annual meeting at the Hotel Astor, New York City, September 12 and 13, under the presidency of F. A. Goodwin of Susquehanna, Pa. The following officers were elected for the ensuing year: President, M. S. Cramer, Kenton, Ohio; vice-president, D. A. Currie, Englewood, N. J.; secretary and treasurer, J. A. Allis, Montclair, N. J.

Association of Military Surgeons of the United States.—The fourteenth annual meeting of this association opens in Detroit September 26. Among the distinguished foreign representatives are Dr. S. Suzuki, surgeon-general of Japan and chief surgeon of the combined fleets of Admiral Togo; Drs. Ho Kan Yen of the Chinese Navy, Ying Yung Tsui of the Chinese Army, and Wang-Hang-Chung of the South China Army, and representatives from the British, Mexican, Canadian, Guatemalan and other foreign services. The representatives of the medical department of the United States Army are Col. Valery Havard, assistant surgeon-general, who has just returned from Manchuria, and Majors William C. Borden and Charles M. Gandy. In addition, Major Louis Livingston Seaman, who has just returned from the seat of war in Manchuria, will give his experiences from the viewpoint of the Japanese Army at the front. The meetings will be held in the auditorium of the Hotel Cadillac, the first session opening at 10:30 a. m., Tuesday, September 26.

The Yellow Fever Situation.—In New Orleans the yellow fever situation continues encouraging. The new cases each day run from 25 to 40, but there are few deaths. The heroic efforts of Tallulah have promptly improved the situation, and elsewhere in Louisiana the epidemic waned. In Mississippi, Vicksburg and Natchez continue to report a few new cases, but vigorous efforts have brought the disease fully under control. Arkansas is relatively quiet. Governor Davis has appointed Dr. Ben. L. Harrison, Jonesboro, to succeed Dr. William H. Jackson on the State Board of Health. In his letter of appointment the governor said: "The State Board of Health will be recognized in the future as a human institution."——The case at Maysville, I. T., proved not to be yellow fever.——Florida has presented the most unfavorable news of the week. There has been a sharp increase of new cases in Pensacola, together with some failure of public effort to meet the conditions.——Atlanta and the state of Georgia maintain a sort of armed neutrality.——At Chattanooga the local superintendent of quarantine was discharged for permitting two refugees to drive through the town.——At Columbia, S. C., the board of health resigned because the city council would pay no attention to its recommendations.—Menominee, Mich., and Marinette, Wis., each reported a refugee ill with yellow fever.

FOREIGN.

Variola in Chili.—According to the *Public Health Reports*, the epidemic of variola is increasing and is spreading from city to city.

Mushroom Poisoning.—The German public health authorities have issued a pamphlet on "Mushrooms," which is given free to officials and organizations for distribution.

Professor Toldt of Vienna in the House of Lords.—The well-known professor of anatomy at Vienna, Karl Toldt, has been appointed a life member of the Austrian house of lords.

Graefe Medal Goes to Hering.—The German Ophthalmological Congress has awarded the Graefe medal this time to Professor Hering of Leipsic for his works on the physiology of optics.

Next French Congress of Neurologists and Alienists.—The question to be discussed at the next meeting, which will be held at Lille in 1907, are the "Senile Brain" and the "Responsibility of Hysterics."

Principles of Ethics in Spanish Dress.—The *Boletin de la Asociacion Medica de Puerto-Rico* has just concluded the publication, in Spanish, of the Principles of Ethics of the American Medical Association.

Mailing of Infectious Material.—The German government now requires that infectious material from or forwarded to bacteriologic institutes must be mailed in special receptacles, made according to government models.

New Hospital in French Indo-China.—The authorities at Cambodia, in French Indo-China, it is reported, have decided to establish a general and lying-in hospital for natives at Phom-Penh. The work of construction is to be started immediately.

First International Congress for Psychiatry and Neurology.—It is announced that the First International Congress of Psychiatry and Neurology is being organized to convene at Amsterdam, Sept. 3-8, 1907. Professor Jelgersma of Leyden will preside.

Medal for Work on Vaccine.—The French Académie de Médicine, through the minister of the interior, has awarded a silver medal to Dr. Alan Green, bacteriologist in charge of the vaccine lymph department of the Lister Institute of Preventive Medicine, for his work on vaccine, published in the Proceedings of the Royal Society.

Plague in the Argentine Republic.—It is reported that there has been a reappearance of this disease in Santiago del Estero. The sanitary authorities are taking every possible precaution to prevent the spread of the disease, and are especially directing their efforts toward extermination of rats in private dwellings as well as in public buildings.

Epidemic Cerebrospinal Meningitis in Germany.—The epidemic seems to be declining in Silesia, where it made its first appearance with such ravages. It is becoming more prevalent in Western Prussia, and some leading medical authorities, we learn, are quite pessimistic in regard to it, even asserting that the disease may prove to be the terror of the twentieth century and sweep over the world.

Anti-tuberculosis Campaign in Bulgaria.—The Association of Bulgarian Physicians has had a popularly written "Catechism for the Fight Against Tuberculosis" printed and distributed gratuitously throughout the country, especially in educational centers. All the schools of the upper grades now have each a medical inspector who lectures occasionally on hygiene and inspects the scholars twice a week to detect transmissible diseases.

Death of Physician from Hydrophobia.—Dr. Feiber of Holzapfel, Germany, was bitten by a mad dog three months ago. The wound was carefully treated and he went the next day to the Berlin Institute for Infectious Diseases, where he was given twenty-one preventive inoculations and was then dismissed as cured. He did not believe that the cure was complete, and ten weeks after the injury symptoms of hydrophobia developed, fatal in four days.

The Neuburger Endowment for Scientific Research.—The friends of Dr. T. Neuburger of Frankfort, Germany, presented him with $20,000 on the occasion of his fiftieth professional anniversary, two years ago. He added $5,000 and presented the sum to the authorities to be applied to promote scientific researches. It has been decided to devote the income from the endowment for the next five years to the cancer research work at the local Institute for Experimental Therapy.

Training in Forensic Medicine.—Two years ago the Paris medical faculty organized an Institute of Legal Medicine and Psychiatry to aid in training medicolegal experts for the courts. A diploma in legal medicine and psychiatry was given on completion of the course, which was open to any physician or university medical student, native or foreign. The *Semaine Médicale* brings the information that the course has been recently enlarged to include criminology and penal law, mental and legal medicine.

Cholera in Madras.—The epidemic in Madras is said to have assumed alarming proportions. The death rate for the last week in July was 89 per 1,000, and in some places is said to have reached 200 per 1,000. The infection is said to have been carried to villages in the suburbs of Madras, and unless severe measures are quickly adopted it is feared that the epidemic will spread to the railroad work shops at Perambore, where are thousands of workmen, and even to the Madras water supply at Red Hills.

Rejection of Recruits with Tendency to Mental Affections.—The German authorities have recently issued more stringent regulations to prevent the acceptance of new recruits with a tendency to mental affections, and to detect those already enrolled. In a number of garrisons permanent arrangements for postgraduate training in neurology and psychiatry are to be made. For several decades a course in psychiatry has been obligatory for the students in the military medical college at Berlin. The official notice also contains suggestions for detection of simulation.

Prizes Offered by Mexican Academy of Medicine. — Two prizes of $500 each are offered for the current year by the National Academy of Medicine at Mexico. The first is for the best work on the early diagnosis of tuberculosis and means to prevent its spread. The second prize is for the study of leprosy in Mexico, its most frequent clinical types, and means to prevent its spread. Competing articles must be received by the secretary before October, 1896, accompanied by the name of the author in a sealed envelope. The only condition is that the articles must be in Spanish.

The Leipsic Chair of History of Medicine.—The chair provided by the Puschmann endowment has been fully organized, and Prof. Karl Sudhoff of Hochdahl has accepted its incumbency. He has recently been made chairman of the permanent international committee of arrangements for the International Historical Congress of investigators interested in the study of the natural sciences. Sudhoff's name is well known by his researches on the works of Paracelsus. The Puschmann endowment provides also for other features of the history of medicine besides the professorship, as already mentioned in these columns.

Postgraduate Schools at Milan.—It is reported that by arrangement between the Italian ministers of public instruction and finance, the official representatives of the province and commune of Milan and the managers of the hospitals of that city, it has been decided to establish postgraduate schools of clinical midwifery and gynecology, diseases of occupation, and contagious epidemic diseases. The first will have 200 beds, the second 60, and the third 164, distributed among seven pavilions. Others may be created later. The estimated cost of these establishments is $53,000. The directors are to rank with university professors.

Epidemic of Anterior Poliomyelitis in Norway.—Platou describes in the *Tidsskrift f. d. Norske Laegefor.* for September an epidemic of 20 cases of acute anterior poliomyelitis in his district last year, with 6 deaths. The first cases seemed to develop from contact infection, but no connection could be determined for the later scattered cases. The age of the children ranged from 7 weeks to 14 years. No adult was attacked. The legs were affected with paralysis more than the arms; complete hemiplegia was not observed in any instance. The severity of the disease varied in different cases, some running an abortive course, while death occurred abruptly in others. The disease terminated fatally or else in complete recovery in time. Treatment and disinfection were the usual measures.

Return to Germany of Professor Baelz of Tokio.—Professor Baelz has returned to his old home, Stuttgart, after a residence of twenty-nine years in Japan. For twenty-five years he has been a leading and pioneer professor in the medical college at Tokio, and almost all the Japanese physicians of the day have been his pupils. His works on the anthropologic and pathologic peculiarities of the Japanese have been numerous and important, as also his contributions to the study of beriberi and other tropical diseases. He is now 60 years old, and received many tokens of friendship and esteem from the mikado and empress of Japan and Japanese scientific societies, as well as from personal friends, before he left the country last June. He was professor of physiology at first and later of internal medicine and gynecology. He married a Japanese.

Laryngologists Refuse to Take Part in Approaching International Medical Congress.—The laryngologists of the world have taken exceptions to the rulings of the Fifteenth International Medical Congress, which group otology, rhinolaryngology and stomatology in a single section. The laryngologists of Great Britain have officially declared that they would refrain from participating in the congress and the Germans are following suit. The committee of arrangements of the international congress have consequently notified the national committees of propaganda that the rulings have been modified so that Section XII is now divided into three subsections, Rhino-laryngology, XII a, Otology, XII b, and Stomatology, XII c. The laryngologists have long been considering the advisability of holding a specialist international congress, and occurrences seem to be tending this way.

Pecuniary Damages for Inoculation with Syphilis.—A Berlin court recently awarded a young woman $725 and a monthly allowance of $37, as she presented testimony to show that her health had been seriously undermined by syphilis transmitted by a druggist with whom she cohabited. These sums were reduced to $400 and a monthly allowance of $12.50 by the court of appeals. The defendant based his defense on the fact that the woman was not an ignorant young girl, and that three physicians who had been treating him for syphilis contracted two years before, had declared that he was entirely cured a month or so before the relations with the young woman had commenced. The judge remarked that the defendant must have been fully aware of the malignancy of the disease, and must have known that he might transmit it after two years, as it is liable to remain virulent for three years or more.

First International Congress of Physicotherapy.—The membership of this congress, which met at Liège August 12, numbered over 650, and fully 200 members took part in the discussions. The principal countries were officially represented and great enthusiasm prevailed among the members. Jacques of Brussels remarked that in this congress physicotherapy left the domain of empiricism and acquired a soul. The empirics were represented in the congress, and the measure proposing to limit the practice of physicotherapy to physicians was modified so that it was not so drastic as its promoters intended. The congress was divided into four sections, hydrotherapy and climatotherapy, electrotherapy, radiology and treatment by movements or exercise. It was voted to organize another similar congress two years hence, and Geneva was chosen for the meeting place. Dr. F. B. Bishop of Washington was the official delegate from this country.

League of Defense Against Anemia.—Twenty-five prominent citizens of Porto Rico gathered at San Juan, August 6, and organized the national "Liga de Defensa contra la Anemia." Seventeen of those present were physicians; the honorary presidency of the league was conferred on Dr. B. K. Ashford, with J. G. Martinez as acting president. Ashford advocated dividing the island into five to ten districts with a hospital of forty beds in a central station in each district and traveling dispensaries, going from village to village until treatment, advice and the principles of sanitary living are imparted to every corner of the island and every inhabitant. The league intends to solicit the further aid of the government and collect subscriptions for the work, and have every physician enrolled in its membership. Weekly lectures are to be given, explaining to the people the necessity and means of preventing uncinariasis. The league also plans to publish circulars and distribute annual prizes to those who distinguish themselves in propaganda and investigation.

Confusion in Smallpox Statistics in Germany.—Official declaration of cases of smallpox is compulsory for physicians in Germany, but as so very few of them have ever had a chance to see a case of the disease, it is frequently difficult for them to recognize it. This fact renders more astonishing a recent statement in the Paris *Progrès Médical*, with comment in other French exchanges, to the effect that during the last few months 2,726 cases of smallpox have occurred in Prussia, with 1,534 deaths. The figures are those of the epidemic of cerebrospinal meningitis, and our French exchanges evidently did not recognize the familiar disease under its German name of *Genickstarre*. This term means stiffness of the neck, and is another instance of the habit which scientists so often have occasion to deplore—the use by the Germans of colloquial terms in the titles of scientific writings, which foreigners are unable to recognize without a dictionary. The term cerebrospinal meningitis is common to all languages nowadays and it is freely used in Germany, but the popular term *Genickstarre* is still often used, and to the confusion of French editors in this case.

Monument to Semmelweis.—A committee has been formed at Budapest to collect subscriptions for a monument to I. P. Semmelweis, in honor of his work on the etiology of puerperal fever. He was born in that city in 1818, and was resident physician at the Vienna Maternity when he noted the resemblance between fatal pyemia from a scratch at the dissecting table and fatal puerperal fever. He ordered all the students to wash their hands in a solution of calcium chlorid before examining a lying-in patient, and with this order reduced at one stroke the number of cases of puerperal fever to the minimum. Dr. Oliver Wendell Holmes in this country had announced, a short time before, that puerperal fever was infectious. This was probably unknown to Semmelweis. His discovery was not announced and did not become generally known until several years after, when it was published abroad by a general practitioner and a dermatologist of Vienna. Semmelweis' first article on the subject appeared not long after in Hungarian, but the world knew little of it until 1860, when he published a large work in German on the etiology and prevention of puerperal fever. He died in an insane asylum at Vienna in 1865. Two biographies of him have recently been published, one in English and one in German. The latter, although incorrect in some points, gives a good picture of the man and his life work.

Dangers of Medical Certificates.—A certain Belgian physician has been the defendant in a suit for damages which has been dragging through the courts for four years, until recently dismissed. The plaintiff did not have the slightest grounds for his suit, but he was able to keep it in the courts and barely missed gaining his point. He was enabled to do this by certificates furnished him by thoughtless physicians, testifying that he was the victim of a nervous affection "apparently due to an operation on the testicle in 1898, performed by some empiric," or "the result of a badly treated testicular affection." A third certificate stated that the nervous affection was the "result of an operation on the testicle in 1898." These certificates had been given him by thoughtless hospital physicians, who commiserated his condition and accepted without investigation his statements that the operation on the testicle had been the source of his ills. The plaintiff, who had performed the operation, was an interne at the time, and the operation was skillfully done. The patient then had already been under treatment for the nervous affection which he attributed later to the operation. He could not have obtained a hearing in the courts if it had not been for the certificates he produced from three medical authorities who allowed their philanthropic emotions to blind them to the necessity for cautious investigation of the case. In delivering such a certificate, the *Gazette méd. Belge* comments, the possible injury to a third party should always be borne in mind, and the applicant's statements should not be accepted without investigation.

Cholera in Europe.—Our Russian exchanges under the heading of "Epidemics," mention the yellow-fever situation at New Orleans and the plague in India, but have nothing to say in regard to any epidemic diseases in Russia except that 14 cases of epidemic cerebrospinal meningitis were reported throughout the entire empire during July. Our German exchanges state that the cholera-infected region in northeastern Prussia is enlarging, and that new cases have been found on some of the other waterways besides those first infested. So far, the disease has been confined to raftsmen coming through from Russia and persons in contact with them. Up to August 30, 20 cases suspicious of cholera had been reported to the authorities, and bacteriologic examination showed that 12 were true cholera, with 6 deaths. A third case has been discovered at Hamburg. The epidemic in Germany has reached a total of 202 cases, with 77 deaths, according to cable reports dated September 18. The record for the twenty-four hours preceding was 3 new cases and 1 death. Sixteen districts have been declared infected and precautionary measures taken. The *British Medical Journal*, editorially, states that the responsibility which rests on Germany at the present is very great. Practical sanitation in the remote, small towns is still in a very backward state, and the conditions across the border in Russia are still worse. The British and American authorities are on the alert defensive, and are enforcing the measures which proved successful in warding off cholera during the previous epidemics in Europe.

Revolution in Nursing in France.—The Journal has mentioned several times the expressions of wonder and admiration lavished by French medical visitors on the trained nurses of America and England. Nothing like the trained nurses of these favored lands has hitherto been known in France. The hospitals offer no accommodations suitable for gentlewomen, and the profession of nurse has therefore never appealed to this class of women seeking a means of self-support. For centuries the nursing was done by sisters of charity, and only comparatively recently have the hospitals been laicized. A beginning has now been made that promises a revolution in nursing methods, and the *Journal de Méd. de Paris* proudly asserts that it is no longer necessary for the French physician to expatriate himself to behold a model training school for nurses. The physician, Dr. Lande, who is mayor of Bordeaux, has succeeded in organizing in the new city hospital, the Tondu, a training school for nurses on the latest and most approved lines. Its success has been marvellous, the editorial adds, during the year since it was organized; "the patients themselves seem transformed. One can read in their eyes their delight in being surrounded by kind, devoted and sympathetic young women in an atmosphere of physical and moral cleanliness." The *American Journal of Nursing* states that this revolution is due in great part to Dr. Anna Hamilton, who ten years ago took charge of the nursing and founded a training school for nurses at the Protestant Hospital at Bordeaux. Her graduates are now ready to carry the reform to other hospitals. In Paris another group of women has established a small model training school for nurses in the heart of Paris, connected with two private hospitals. It is a striking object lesson for the authorities in charge of the public hospital work, and will no doubt aid effectually in the revolution now going on in hospital nursing in France.

Campaign Against Yellow Fever in Mexico.—Isolated cases of yellow fever still occur in Mexico and will probably continue to occur here and there, but the prompt, systematic and radical measures taken stamp out the disease before it has a chance to develop into an epidemic. In his official report for 1904 Liceaga, chief of the National Board of Public Health, states that during 1903 and 1904 there were 699 cases throughout the entire republic, and 147 deaths. From September, 1903, to January, 1905, house-to-house visits were made to the number of 1,081,177, and 751 immune persons and 99,372 non-immune were taken in charge. The number of inspections of deposits of water was 126,081, and inspections of immune persons, 455,801; of non-immune, 678,009; of travelers arriving, 10,073, and of travelers leaving, 12,314. Nearly 4,500 dwellings, 67 ships and 1,813 railroad cars were disinfected; 237,521 collections of water were drained away or treated with kerosene. Disinfection of the loosely-built native huts is a difficult matter. He found that the mosquitoes were able to escape by the smallest outlets. In one of his tests ten mosquitoes were placed in a small air-tight room which was then fumigated. A cover had been placed over the keyhole outside. Seven of the mosquitoes were found dead in the room, but the three others were found in the cover over the keyhole. In one experience in a fortress, where the windows formed long passages through the thick stone walls, the mosquitoes sought refuge in the depths of these windows, and the air in them prevented the entrance of the sulphur fumes. When the windows were opened the mosquitoes escaped alive. As soon as sulphur was set to burn in each separate window passage the epidemic of yellow fever ceased at once. He closes the native huts mosquito-tight with a cloth covering outside. A strip of canvas is carried from the foot of the wall to the eaves and here supported by a bar of wood on uprights. It is then carried over the roof and down the other side to the foot of the wall. Other strips are applied in the same way, lapping over the first, until the sides and roof of the hut are covered. The front and rear are then covered with strips sewed together to make a solid sheet, sewed also to the first of the strips passing over the sides and roof. This insures the killing during the sulphur fumigation not only of the mosquitoes, but also of all the other insects that had found shelter in the structure. Liceaga adds that the general mortality of Vera Cruz has been much reduced by the sanitary and prophylactic measures undertaken there in the campaign against yellow fever. It was only 1,858 in 1904; in 1903 it was 2,566. The deaths from yellow fever were reduced from 375 in 1903 to 12 in 1904, and four of the latter were imported cases.

Pharmacology

Scientific Work Misrepresented and Commercialized.

In pursuance of the deliberately assumed purpose to enlighten the physicians of the United States on all features of the traffic in proprietary remedies, there will be offered to our readers not only information regarding the composition of such remedies, but also facts concerning the methods of their advertising and sale, which come to light in such shape as to be of service to the profession. No firm or product will be subjected to attack, but publicity will be given to all facts obtainable. Having in mind this purpose the following recital of facts is offered to the profession as an illustration of methods employed in the proprietary trade, and as a step in the era of pharmaceutic publicity.

Under date of Dec. 1, 1904, there was published by the government of Porto Rico a "Report of the Commission for the Study and Treatment of 'Anemia' in Porto Rico." The splendid scientific results of this study of uncinariasis we commented on editorially[1] February 11, page 478. A few weeks ago the M. J. Breitenbach Company of New York circulated among physicians what purports to be an abstract of this report, claiming that "this report alone would suffice to establish pepto-mangan at once as the foremost hematinic known." Physicians, of course, realize that no other proprietary firm ever had so many "original" "write-ups" inserted in the reading pages of medical journals. It may fairly be said that the medical press has been subsidized by the Breitenbach Company to an extent equaled by no other. So in this instance, medical journals have recently been publishing as "reading notices," or as "publishers' notes," extracts from the company's pamphlet, especially made for the purpose. The Breitenbach Company having, as quoted, staked so much on the results of the commission's use of "pepto-mangan (Gude)," it becomes a matter of medical importance to look into the facts.

The commission treated, so far as covered in this report, 5,490 cases of uncinariasis. Of these it presented in detail the clinical histories of 61 cases. In 18 of these 61 cases the commission administered "pepto-mangan (Gude)," which had been donated by the Breitenbach Company. Of these 18 cases the Breitenbach Company says they "were selected on account of their extreme severity, and thus these cases represent the most crucial test to which any iron preparation can be subjected." Further, we are told: "The results obtained point so distinctly to the supremacy of "pepto-mangan (Gude)," etc., and "the report may be regarded as a supreme test" and "as a triumph for pepto-mangan (Gude)."

With these claims before us it is more than interesting to analyze the reports of the cases from which they are drawn. In 14 of the 18 "pepto-mangan (Gude)" cases that combination was the only iron preparation used; in the remaining 4 Blaud's pill was used during the latter part of treatment. In the other 43 cases (not mentioned in the Breitenbach pamphlet) the iron was administered in the form of Vallet's mass or Blaud's pill, either or both, with the exception of two cases in which no iron was used. In closing its report the commission notes that iron alone without expulsion of the uncinaria is of little benefit and plays a part secondary to anthelmintics. Therefore, in this "supreme test," the relative value of the hematinic used will be largely determined by the time consumed in relieving the symptomatic anemia after removal of the parasitic cause.

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[1] This editorial brought from the Breitenbach Company a letter addressed to The Journal of the American Medical Association, which is worth quoting in this connection, and also in connection with the correspondence with the *Medical Record,* which follows. The italics are ours.

"It seems to us, in looking over the issue of your journal for Feb. 11, that the editorial department of your publication is quite at variance with your advertising pages. A short while ago we sent you a new electrotype stating that peptomangan was particularly applicable to the anemia of uncinariasis, and produced positive results if administered after proper treatment for the expulsion of the parasite. We did not make this statement until we had had conclusive proof from tests made by eminent men in the profession that such was the case. We make no haphazard statements ourselves. *It is evident that either your editors do not read the advertising pages of your journal, or they wish to make a direct slap at one of their advertisers, and we can hardly see how it is to be any advantage for us to place an advertisement with you, if in the editorial pages you are going to directly contradict our statement.* We refer to your editorial on page 478, in which you make the statement, 'The day of blind *reliance on iron, quinin and tonics in general in the treatment of anemic conditions in tropical countries is past, never to return,'* and this in the face of our advertisement for which we pay you. It looks to us a little like taking our money and in turn going out of your way to slap us in the face, for had that paragraph been omitted from your editorial, we think you will agree with us that the value of the article would in no way have been lessened, and we should feel in a very different frame of mind than we do now. Had it been written by one of your contributors we would have let the statement pass, and set it down to ignorance, but coming as it does from your editors, *who should be thoroughly conversant with the advertisements you carry,* we can not but feel that it is *very unfriendly* toward us.

"We shall be glad to hear from you on the subject."

Analyzing the 61 cases the following facts come to light, and it should here be noted that nothing in the original report indicates the "extreme severity" of the "pepto-mangan (Gude)" cases as compared with those in which other iron preparations were used. For the present purpose it is sufficient to compare the "pepto-mangan (Gude)" cases with those in which Blaud's pill alone was used:

	Cases.	Av. time of treatment. Days.
"Pepto-mangan (Gude)" cases reported cured	9	79.77
"Pepto-mangan (Gude)" cases reported cured in which Blaud's pill was used in latter part of treatment	5	74.8
Blaud's pill cases reported cured.	26	49

Two "pepto-mangan (Gude)" cases were reported "improved" in an average treatment time of 87 days, while the other two were fatal cases. This "supreme test" then shows that the patients treated with Blaud's pill recovered from the anemia in less than two-thirds of the time required when "pepto-mangan (Gude)" was used. On this point the commission itself says (page 119): "Thus it is quite difficult to accurately judge the comparative value of different iron preparations, yet it is noticed, even by some patients, that Blaud's pill gave more rapid results."

In the face of these clinical facts and of this plain declaration from the commission, the physician may well ask: Why in the name of prudence did the Breitenbach Company circulate a pamphlet and advertise in medical journals a claim that "this report alone would suffice to establish pepto-mangan at once as the foremost hematinic known?" As the report actually draws a contrary lesson, the course of the company can only be explained either as due to its exaggerated confidence in the credulity of physicians or to its own neglect to read the report before abstracting it. Which hypothesis is most probable? Physicians who have read the "write ups" of "pepto-mangan (Gude)" appearing in nearly all the medical journals of the country will have no difficulty in answering this question. Lastly, what of the honesty of circulating among medical men so misleading a document?

The Medical Record and the Propaganda Against Nostrums.

A little while ago the New York *Medical Record* contained a two-page advertisement of the Etna Chemical Company, which evidently was intended to counteract the effect of the report of the Council on Pharmacy and Chemistry which showed phenalgin to be a simple acetanilid mixture. Still more recently the same journal contained another two-page advertisement, one of which was occupied with a cartoon intended to cast ridicule on the efforts being made against the nostrum evil. Since these advertisements appeared in a scientific medical journal and a journal that is supposed to represent intelligent physicians, one might charitably suppose that they were admitted through lack of supervision. Such does not appear to be the case, however.

Under date of September 8, the editor of The Journal of the American Medical Association sent the following letter to the *Medical Record:*

> *To the Editor:—*
>
> Your issue for last week, September 2, contains a two-page advertisement of the Etna Chemical Company relating to their preparation, phenalgin. One page is entirely taken up with a cartoon evidently intended to deride The Journal of the American Medical Association, the Council on Pharmacy and Chemistry of the American Medical Association, and the propaganda against nostrums. The other page contains what is presumed to be an answer to the official announcement of the Committee on Chemistry regarding its investigation into certain preparations offered to the profession and to the public, especially as it is related to phenalgin. Permit me to quote from the advertisement as it appears on advertising page 21 of the *Record:*
>
> "Recently certain ill-advised persons have attempted to confuse Phenalgin with patent and quack Nostrums and have so far succeeded that the influence of the Journal of the American Medical Association has been brought to bear against our legitimate and ethical business."
>
> "We believe that Commercialism of the rankest kind has dominated this absurd crusade against us. These people may call Phenalgin a mixture, or a compound, or anything that pleases them: it does not in the least change the fact that Phenalgin is just what we have always said it to be."
>
> "We know that doctors who are practicing medicine and prescribing Phenalgin will continue to do so regardless of the reports of alleged analytical chemists whose experience in the sick room is an atom of a myth compared with that of those who are continually using our product."
>
> My object in writing you is to briefly state certain facts solely for the information of your readers.
>
> What the Council on Pharmacy and Chemistry of the American Medical Association is and what its functions are are well known to your readers. While the council has been outlining plans for work, making investigation into various products, it has published but one official report: this was on six preparations, viz.: ammonol, antikamnia, Koehler's headache powders, orangeine, phenalgin and salacetin (sal-codeia-Bell). The report on phenalgin was as follows:
>
> > "According to the analyses of the contents of the original sealed packages as purchased, this was found to be a mixture, and to contain the following ingredients approximately in the proportions given:
> >
> > | Acetanilid. | Sodium bicarb. | Ammonium carb. |
> > |---|---|---|
> > | 57 | 29 | 10 |
> >
> > "Certain packages of phenalgin were purchased which on analysis did not show ammonium carbonate."
>
> The committee signing the report[1] and vouching for its truthfulness consisted of:
>
> J. H. Long, M.S., Sc.D., professor of chemistry in the Northwestern University Medical School and director of its chemical laboratories, the author of "A Text-book of Physiological Chemistry" and other works on chemistry, and, last year, president of the American Chemical Society;
>
> W. A. Puckner, Ph. G., professor of chemistry in the School of Pharmacy of the University of Illinois, and a contributor of scientific articles to chemical journals;
>
> S. P. Sadtler, Ph.D., professor of chemistry in the Philadelphia College of Pharmacy, author of "A Text-book on Chemistry," associate editor of the U. S. Dispensatory, and a member of the Committee on Revision of the U. S. Pharmacopeia;
>
> Julius Stieglitz, Ph.D., professor of chemistry in the University of Chicago, a man of wide repute as a chemist, and the author of several works on chemistry; and
>
> H. W. Wiley, M.D., Ph.D., chief of the Bureau of Chemistry of the Department of Agriculture, Washington, D. C.
>
> Besides the above, other chemists assisted in the work, and the following made analyses of phenalgin:
>
> H. M. Gordin, Ph. D. (Berne), professor of chemistry in the School of Pharmacy of the Northwestern University, who has done a large amount of original

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[1] The Journal A. M. A., June 3, 1905, p. 1791.

> work, as his contributions to chemical literature will show; and
>
> Max D. Slimmer, B.S.M.A. (University of Chicago), Ph. D. (Berlin), who has several fellowships in chemistry in the University of Chicago, who has done considerable original work in chemistry, and who is recognized as an honorable and capable analytical and consulting chemist.
>
> These are the gentlemen referred to in the advertisement in the *Medical Record* as "alleged analytical chemists."
>
> In a former advertisement the Etna Chemical Company says: "We protest against the Association of Phenalgin in that publication" (meaning THE JOURNAL of the American Medical Association) "with patent medicines and nostrums as an uncalled-for insult to a reputable American Manufacturing Chemical Industry."
>
> In this statement, the Etna Chemical Company gives physicians the right to ask whether it is "reputable" to inveigle them into prescribing a simple acetanilid mixture under the supposition that it is a definite synthetic chemical substance and to charge a dollar an ounce for a preparation the ingredients of which cost less than five cents.
>
> There is, however, one assertion made in the advertisement which, I think, is well taken. The preparation is certainly not now a "secret remedy," for the Council on Pharmacy and Chemistry has cleared up all doubts as to the composition of "ammoniated-phenylacetamide."
>
> Since you did not see fit to publish, or mention, the report referred to above, but have allowed your advertising pages to be used to slur the Council on Pharmacy and Chemistry of the American Medical Association, as well as THE JOURNAL of the American Medical Association, I think it only fair to your readers that they be informed of the facts in the case, as far as they refer to phenalgin. I, therefore, ask that you kindly publish this.

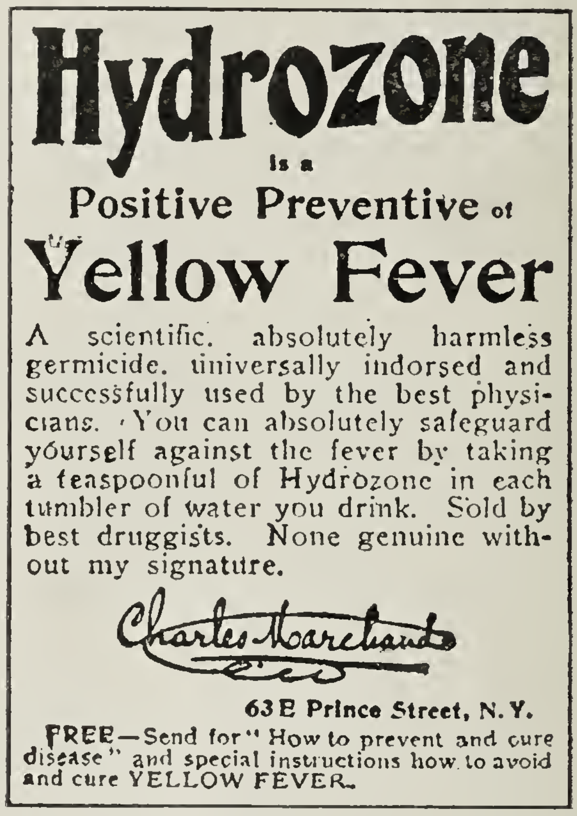
To the above the editor of the *Medical Record* replied under date of September 12:

> It has always been the aim of the editor of the *Medical Record* to keep the editorial and advertising pages of the journal entirely distinct, and in continuing that policy I am forced regretfully to return your letter replying to an advertisement in the issue of September 2. If there should at any time be anything in the reading pages of the *Medical Record* relating to you or the Association whose interests you guard so well, to which you might take exception, I promise you the opportunity to reply fully and freely; but I am not responsible for what appears in the advertising pages, and can not open the correspondence department to letters in commendation or condemnation of anything appearing in that part of the journal. I regret the seeming discourtesy to you, but you surely can see to what abuses it might lead were correspondents permitted to discuss in the reading pages the statements made by advertisers.
>
> THOMAS L. STEDMAN.
>
> P. S.—If you publish this letter in your own journal or elsewhere, I trust you will, in justice to the *Medical Record* and to me, publish also this letter giving my reason for refusing you the hospitality of our columns. T. L. S.

We are very glad to know that "the editorial and advertising pages of" the *Medical Record* are "entirely distinct." Since antikamnia, ammonal, phenalgin and salacetin, in the form of sal-codeia-Bell, each occupies from a half to a page in the *Record*, some physicians were unkind enough to insinuate that this was the reason the editor totally ignored the report which exposed these preparations. Dr. Stedman's letter shows that this could not be, since the editorial and advertising departments are "entirely distinct."

Preying on the Sick.

The moral principle governing the action of secret proprietary and patent medicine men is an unknown quantity; sometimes it would seem to be a negative one. Just how much lower in the scale of humanity a man can go than to prey on the fears of a people in the time of a terrible epidemic for the sake of a few dollars we do not know. There may be something more despicable, but what is it? Two weeks ago we referred to the cold-blooded methods of the peruna people; this week we reproduce an advertisement from the New Orleans *States* that tells another story of man's inhumanity to man.



Hydrozone

is a

Positive Preventive of

Yellow Fever

A scientific, absolutely harmless germicide, universally indorsed and successfully used by the best physicians. You can absolutely safeguard yourself against the fever by taking a teaspoonful of Hydrozone in each tumbler of water you drink. Sold by best druggists. None genuine without my signature.

Charles Marchand

63 E Prince Street, N. Y.

FREE—Send for "How to prevent and cure disease" and special instructions how to avoid and cure YELLOW FEVER.

This brings up the problem that we are trying to solve, viz.: "What is the difference between a 'secret proprietary medicine' advertised in medical journals to physicians, and a 'patent medicine' advertised in newspapers to the public." Hydrozone is being advertised in nearly all medical journals, and at the same time in the newspapers. Where shall we place it? And if hydrozone, with the methods recently adopted to exploit it, is tolerated in the medical press, why not peruna?

Tongaline and Yellow Fever.

Tongaline, too, is good for yellow fever if we are to believe the absurd claims made by its enterprising salesmen. Here is the advertisement from current medical journals:

> "*Stegomyia fasciata* has produced an epidemic of yellow fever in certain sections of Louisiana and adjoining states.
>
> "*Stegomyia punctata* has inoculated thousands with virulent malarial germs throughout the balance of the Mississippi Valley.
>
> "Tongaline, Mellier, in one of its forms as indicated, antagonizes and destroys the effects of these parasites on account of its extraordinary eliminative action on the liver, the bowels, the kidneys and the pores, whereby the poison is promptly and thoroughly expelled. For full literature, etc."

Correspondence

Patent Medicines: A Good Suggestion.

ROGERSVILLE, TENN., Sept. 13, 1905.

To the Editor:—Under separate cover I am to-day mailing you a marked copy of the *Rogersville Review*, a weekly newspaper published in this, a town of about 3,000 inhabitants. I have had the editor copy your editorial[1] of September 2 on the patent medicine fraud as it prevails in the United States with special reference to peruna. These little weekly papers circulate among the rural people, where every issue is read through, ads and all alike. I would suggest that you induce every member of the American Medical Association to have this or some like article occasionally brought out in his home paper. Surely all the physicians of a town would have sufficient influence with their local paper to do this. I assure you that it would work wonders. The people at large have never heard anything but praise of these nostrums, and they fully believe that the ads are written and sanctioned by the medical profession.

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[1] "A Miserable Outrage," The Journal, Sept. 2, 1905, p. 722

This plan would doubtless not work in the larger cities where the advertising bills are large, but it could very easily be done with the small daily and weekly papers, published in villages and towns, as you will see. I propose to have some articles of the kind appear every week. The sums paid these small papers for carrying patent medicine ads is a mere pittance. J. E. Miller, M.D.

Marriages

Francis J. Peter, M.D., to Miss Laura Jordan, both of Omaha, August 16.

Harry E. Alderson, M.D., to Miss Cordelia Bishop, both of San Francisco, September 26.

Arnold Brandt, M.D., Seattle, Wash., to Miss Ethel Tope of St. Louis, Mo., September 6.

William W. Jarrell, M.D., Thomasville, Ga., to Miss Sadie Luff of Nashville, Tenn., September 6.

Frank Edmoundson Nabers, M.D., to Miss Bevelle Comer, both of Birmingham, Ala., September 6.

George Lone Everall, M.D., Clinton, Iowa, to Miss Amy Mabel Ford, at Evanston, Ill., September 12.

William Watson McKibben, M.D., to Miss Olive Beatrice Flint, both of Worcester, Mass., September 11.

Thomas Francis Coneen, M.D., to Miss Jane Cecilia Cunningham, both of Portland, Maine, September 4.

George Thomas Rankin, M.D., Akron, Ohio, to Miss Anna Allison Jones of Zanesville, Ohio, September 12.

Edwin Heddon Shepard, M.D., Syracuse, N. Y., to Miss Edna Mitchell of Hornellsville, N. Y., September 7.

James Matthew Booher, M.D., to Miss Retta Kelly Brown, both of Louisville, Ky., at Jeffersonville, Ind., April 9.

James T. Jelks, M.D., Hot Springs, Ark., to Miss Belle McKaskle, Pony, Mont., at Butte, Mont., September 7.

John H. Gilpin, M.D., Fort Wayne, Ind., to Mrs. Fred Loehrane of Montgomery, Ga., at Cincinnati, September 16.

Charles R. Chapman, M.D., Springfield, Mass., to Miss Hazel Vivian Sheffield of Chicago, at Winona Lake, Ind., September 6.

Deaths

John G. Park, M.D. Harvard University Medical School, Boston, 1866, member of the Massachusetts Medical Society; acting assistant surgeon in the Navy during the Civil War; superintendent of the Worcester City Hospital in 1871; from 1872 to 1877 assistant superintendent of the State Insane Hospital; from 1877 to 1879 on the staff of the Hospital for the Chronic Insane, and from 1879 to 1890 superintendent of the Worcester Insane Hospital, and thereafter a citizen of Groton, Mass., died in the Worcester City Hospital after an operation for gallstones, August 29, aged 67.

Thomas Menees, M.D. Transylvania University Medical Department, Lexington, Ky., 1846, one of the most eminent physicians of the South; a member of the Confederate congress and for many years a professor of obstetrics in the medical department of the University of Nashville and of Vanderbilt University, died at his home near Nashville, September 7, aged 82.

James W. Jackson, M.D. University of Louisville Medical Department, 1873, formerly of Cocoanut Grove, Fla., but recently a resident of Sherman, Texas, died in the North Texas Hospital for the Insane, August 23, from injuries alleged to have been inflicted by attendants in the asylum, who were arrested on the charge of murder.

James M. Gist, M.D. Medical Department of the University of Nashville (Tenn.), 1860, surgeon in General McRae's brigade, C. S. A., during the Civil War, twice a member of the state legislature and very prominent in White County, Ark., died at his home in Beebe, September 10, after a short illness, aged 71.

Colin P. Dewar, M.D. McGill University Medical Department, Montreal, 1882, a member of the Canadian Medical Association and past president of the Ottawa Medico-Chirurgical Society and of the Ottawa Medical Society, died at his home in Ottawa, Ont., September 7, from uremia, after an illness of five days, aged 40.

Hiram H. Russell, M.D. Starling Medical College, Columbus, Ohio, 1863, assistant surgeon of the One Hundred and First Ohio Volunteer Infantry during the Civil War, and later of the One Hundred and Thirty-eighth Infantry, O. N. G., died at his home in Hyde Park, St. Joseph, Mo., September 10, after a lingering illness, aged 70.

Lyman Potter, M.D. Starling Medical College, Columbus, Ohio, 1850 one of the oldest and most respected practitioners of Delaware County, Ohio, for many years a member of the Delaware County Medical Society, died from senile debility at his home in Leonardsburg August 29, after a decline of three months, aged 93.

Benjamin T. Kneeland, M.D. Geneva (N. Y.) Medical College, 1851, formerly of Dalton, N. Y., surgeon of the One Hundred and Thirtieth New York Volunteer Infantry during the Civil War and at its close brevet colonel, died at his home in Nunda, N. Y., September 3, from senile debility, aged 80.

Alexander D. Mackenzie, M.D. University of the State of Oregon Medical Department, Portland, 1894, of Portland, for several years secretary of the Portland Medical Association, died at St. Vincent's Hospital, Portland, from tuberculosis, August 25, after an illness of five months, aged 45.

B. Frank Park, M.D. Rush Medical College, Chicago, 1901, a member of the American Medical Association, a rising young physician of Omaha, and an instructor in the Omaha Medical College, died suddenly while making a professional call September 8, from cerebral hemorrhage, aged 28.

John H. Rhodes, M.D. Louisville (Ky.) Medical College, 1880, city physician of Jackson, Miss., a member of the State Board of Health, and president of the Jackson Sanitarium, died suddenly near his home in Jackson August 30, from heart disease, aged 45.

Charles C. Rubless, M.D. College of Physicians and Surgeons in the City of New York, 1873, for many years health officer of Morrisville, Vt., died at his home in that place September 11, from diabetes, after an illness of several years, aged 53.

Thomas Gilfillan, M.D. Berkshire Medical College, Pittsfield, Mass., 1855, a member of the Massachusetts Medical Society, and a surgeon in the army during the Civil War, died at his home in Northampton, Mass., September 9, aged 75.

Samuel Jackson, M.D., assistant surgeon United States Navy, commissioned in 1838 and retired in 1879, with rank of commodore, died at his home in Washington, D. C., July 22, from apoplexy, after an illness of two weeks, aged 88.

Gustavus A. Richardson, M.D. New York University, New York City, 1875, Hyattsville, Md., died at the Railroad Y. M. C. A. Hospital, Hagerstown, Md., September 1, from nervous collapse after an illness of several weeks, aged 60.

Thomas W. Poole, M.D. University of the Victoria College, Coburg, Ont., 1865, said to have been the oldest practitioner and once mayor of Lindsay, Ont., died at his home in that place August 28, after a lingering illness, aged 74.

E. Algo Donmyer, M.D. Baltimore Medical College, 1896, of Herington, Kan., while riding on a freight train near Enterprise, Kan., September 7, lost his balance, fell from the train and broke his neck, causing instant death.

Isaac Emmett Nicholson, M.D. Bellevue Hospital Medical College, New York City, 1894, died at his home in Oakland September 9, from cerebral embolism following typhoid fever, after an illness of two weeks, aged 34.

Frederick T. Lape, M.D. College of Physicians and Surgeons, Baltimore, 1896, formerly of Poughkeepsie, N. Y., died at the home of his parents in Athens, N. Y., September 4, from tuberculosis, after a long illness, aged 29.

Hugh L. Tobin, M.D. Jefferson Medical College, Philadelphia, 1880, twice physician at the state penitentiary, Frankfort, died from inflammation of the bowels at Pope Sanitarium, Louisville, September 14, aged 44.

James C. Lovejoy, M.D. Rush Medical College, Chicago, 1848, a pioneer settler of Greene County, Iowa, died at his home in Rippey, Iowa, September 6, from cerebral thrombosis, after an illness of two weeks, aged 87.

James W. Karr, M.D. University of Louisville Medical Department, 1848, a resident of Hickory Withe, Tenn., for 72 years and a practitioner in that place for 55 years, died at his home August 27, aged 79.

Christopher C. Jacobs, M.D. Bellevue Hospital Medical College, New York City, 1886, a member of the Medical and Chirurgical Faculty of Maryland, died at his home in Frostburg, Md., September 12, aged 54.

Eugene William Dickinson, M.D. St. Louis, 1891, formerly an attendant at the Topeka State Hospital, died in Topeka, Kan., September 6, after an illness of fourteen hours, from apoplexy, aged 33.

Dennis Lincoln Russell, M.D. Rush Medical College, Chicago, 1872, assistant surgeon during the Civil War, died at his home in Rushville, Ill., September 5, after a long illness from dropsy, aged 70.

John Jay Richards, MD. Medico-Chirurgical College, Kansas City, Mo., 1901, formerly of Agra, Okla., was accidentally shot and killed while hunting near Nevada, Mo., September 7, aged 28.

Rebecca Barnard, M.D. Woman's Medical College of the New York Infirmary, New York City, 1878, died recently at her home in Worcester, Mass., and was buried September 12.

Samuel C. Beard, M.D. University of Virginia Medical Department, Charlottesville, 1853, died at his home in Lewisburg, W. Va., from disease of the stomach, August 26, aged 73.

John N. Dunlap, M.D. University of Virginia Medical Department, Charlottesville, 1843, a pioneer physician of Saline County, Mo., died at his home in Miami, August 27.

Ernest Fruh, M.D. Jefferson Medical College, Philadelphia, 1886, of Philadelphia, died suddenly in a street car in that city September 7, from heart disease, aged 53.

Albert Koebig, M.D. University of Strasburg, Germany, 1873, while despondent, shot himself through the heart at his home in Houston, Texas, August 30, aged 64.

Orville C. Nally, M.D. Western Pennsylvania Medical College, Pittsburg, 1900, died at his home in Stotesbury, Mo., September 6, from typhoid fever, aged 32.

Thomas S. Allan, M.D. Hospital College of Medicine, Louisville, 1882, died from consumption at his home in Bloomingdale, September 11.

Deaths Abroad.

K. Schweigger, M.D., the successor of von Graefe as professor of ophthalmology at Berlin, died at Berlin August 23, aged 75. He retired from his official post on account of ill health in 1900. He published the *Archiv f. Augenheilkunde* and numerous text-books and special articles, and his perimeter and method of advancement, resection of the optic nerve and modification of cataract operations ensure him a prominent place in the history of ophthalmology.

O. v. Bungner, M.D., director of the Hanau Hospital and author of numerous articles on various branches of surgery and general pathology, died at Hanau, August 27, aged 47. One of his latest works was the collecting of data in regard to the importance of injuries of the tissues in the etiology of tumors.

Book Notices

Treatise on Orthopedic Surgery. By Edward H. Bradford, M.D., Surgeon to the Boston Children's Hospital, Consulting Surgeon to the Boston City Hospital, Professor of Orthopedic Surgery, Harvard Medical School, and Robert W. Lovett, M.D., Surgeon to the Infants' Hospital and to the Peabody Home for Crippled Children, Assistant Surgeon to the Boston Children's Hospital, Assistant in Orthopedic Surgery, Harvard Medical School. Third Edition. Illustrated by 592 engravings. Cloth. Pp. vi-669. Price, $5.00 net. New York: William Wood & Company. 1905.

This edition differs from the edition published six years ago chiefly in arrangement, improved illustrations, and in the chapters on congenital dislocation, scoliosis, and coxa vara, as it is especially in these subjects that recent advance has been made. It is noteworthy that one of the authors has been a large contributor to this advance in congenital dislocation of the hip, while the other has borne the same relation to scoliosis; the sections on these subjects, therefore, are authoritative.

Diseases of the Heart. A Clinical Text-Book for the Use of Students and Practitioners of Medicine. By Edmund H. Colbeck, B.A., M.D., B.C. (Cantab); F.R.C.P. (London); D.P.H. (Cantab), Physician to Out-patients at the City of London Hospital for Diseases of the Chest. With 43 Illustrations. Second Edition, Revised and Enlarged. Cloth. Pp. 350. Price, $2.50. Chicago: W. T. Keener & Co. 1905.

This book is an unusually complete and clear description of the heart and its diseases. Although small, the book is so concisely written that it contains an unusually large amount of information. It can be praised quite as much for its good arrangement, clearness and accuracy as for its fullness.

The Intestinal Catarrhs, Being a Clinical Study of Colitis. Appendicitis and Their Allies; with a Special New Section on Sprue. By Edward Blake, M.D., Member of the Royal College of Physicians. Second Edition. Cloth. Pp. 356. Price, $2.00 net. Chicago: W. T. Keener & Co.

This book is full of interesting scraps of information, but it is most loosely constructed. As a treatise on intestinal catarrhs it is a failure. Almost every page is padded with such sentences as these: "But as in politics, my country first, afterwards my party. So in pathology, truth first, with the utmost tolerance of catholicity; then a view held with a loose hand."

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending September 16:

Ford, Clyde S., asst. surgeon, reports on temporary duty at Fort McPherson, Ga., since September 6.

Morris, E. R., surgeon, on arrival at San Francisco, from Manila, P. I., ordered to Fort Slocum, N. Y., for duty.

Shepard, John L., asst. surgeon, left Army General Hospital, Presidio of San Francisco, on thirty days leave of absence.

Davis, Wm. B., deputy surgeon general, and Corbusier, Wm. H., deputy surgeon general, relieved from duty in the Philippines Division, to take effect October 15, 1905, and January 15, 1905, respectively.

Havard, Valery, asst.-surgeon general, Borden, William C., surgeon, and Gandy, Charles M., surgeon, are detailed to represent the Medical Department of the Army at the Fourteenth Annual Meeting of the Association of Military Surgeons of the United States, at Detroit, Mich., September 26-29.

Asst. Surgeons Samuel E. Lambert, Wm. H. Moncrief, Wm. T. Davis, Charles F. Morse, Clarence H. Connor, Nelson Gapen, Louis C. Duncan, and Philip W. Huntington (Dec. 15, 1905), Cary A. Snoddy, Samuel J. Morris, Harry S. Purnell, John W. Hanner, Horace D. Bloombergh, and Leon T. Lewald (Jan. 15, 1906), and Robert L. Carswell (Feb. 15, 1905), are relieved from duty in the Philippines Division, and will proceed to San Francisco on the transports sailing from Manila, on or about the dates designated after their names.

Asst. Surgeons William Roberts, Fort Hamilton, N. Y., Frank C. Baker, Presidio of Monterey, Cal., Robert M. Blanchard, Fort Thomas, Ky., William E. Vose, Fort Sheridan, Ill., Frank T. Woodbury, Plattsburg Barracks, N. Y., Edmund D. Shortlidge, Army and Navy General Hospital, Hot Springs, Ark., George F. Jeunemann, Fort Ringgold, Tex., De Loffre, Samuel M., Fort Schuyler, N. Y. (Nov. 5, 1905), Walter C. Chidester, Fort Lawton, Wash., James F. Edwards, Fort Leavenworth, Kans., Wallace DeWitt, Fort Washakie, Wyo., Robert B. Grubbs, Fort Wright, Wash., Charles R. Reynolds, Army General Hospital, Washington Barracks, D. C., Frederick A. Dale, Fort Walla Walla, Wash., McAndrew, Patrick H., Jefferson, Barracks, Mo. (Dec. 5, 1905), Allie W. Williams, Fort Greble, R. I., James I. Mabee, Fort Casey, Wash. (Jan. 5, 1906), are relieved from duty at the stations designated after their respective names, and will proceed to the Philippine Islands for duty, on the transports sailing from San Francisco on or about the dates specified.

McCall, James H., contract surgeon, leave of absence extended twenty days. Relieved from further duty at Fort Moultrie, S. C., and ordered to his home, Huntingdon, Tenn., for annulment of contract at expiration of leave of absence.

Lemmon, Robert, contract surgeon, left Fort McKinley, Me., and arrived at Fort Warren, Mass., for temporary duty.

Vaughan, Milton, contract surgeon, relieved from duty at Fort Crook, Neb., and ordered to his home, Little Rock, Ark. for annulment of contract.

Gardner, Fletcher, contract surgeon, granted an extension of twenty-four days to his leave of absence.

Koyle, Fred T., contract surgeon, granted leave of absence for one month.

Carpenter, Alden, dental surgeon, left Vancouver Barracks, Wash., on detached service to Fort Liscum, Alaska.

Kennedy, James S., contract surgeon, will, on abandonment of Fort Grant, Ariz., proceed to Fort Omaha, Neb. for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending September 16:

Waggener, J. R., medical director, detached from the Navy Yard. Mare Island, Cal., and ordered home to wait orders.

Anderson, F., Medical Inspector, detached from the Marine Barracks, Washington, D. C., September 12, and ordered to the Navy Yard, Mare Island, Cal., for duty as Medical Officer of that yard and in command of the Naval Medical Depot.

McClurg, W. A., medical inspector, detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the Marine Barracks, Washington, D. C., September 18.

McCormick, A. M. D., surgeon, ordered to the Naval Academy.

Lowndes, C. H. T., surgeon, detached from the Naval Academy and ordered to the *Texas*.

Dunn H. A., P. A. surgeon, ordered to the Naval Proving Ground, Indian Head, Md., September 15.

The following assistant surgeons have been ordered to report at the U. S. Naval Medical School, Washington, D. C., September 30, for course of instruction: F. M. Shook, G. M. Olson, R. A. Warner, F. H. Brooks, E. O. J. Eytinge, P. R. Stahlnaker, F. S. Sellers, C. D. Munger, B. Elmore, H. T. Nelson, N. S. Hathaway, J. B. Mears, E. R. Marshall.

Farwell, R. G., asst.-surgeon, detached from the Brooklyn and ordered to duty on the second torpedo flotilla on the *Worden*.

Hart, G. G., acting asst.-surgeon, ordered to the *Glacier*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending September 13.

Banks, C. E., surgeon, to proceed to Montgomery, Ala., for special temporary duty.

Guiteras, G. M., surgeon, granted leave of absence.

Rosenau, M. J., P. A. surgeon, to proceed to New Orleans for special temporary duty in connection with the investigation of the cause of yellow fever.

Stansfield, H. A., P. A. surgeon, relieved from duty on Isthmus of Panama, effective August 23.

Stansfield, H. A., P. A. surgeon, to report to the director of the Hygienic Laboratory, Washington, D. C., for duty.

Trotter, F. E., P. A. surgeon, to rejoin his station, San Francisco, Cal.

Sweet, E. A., asst.-surgeon, relieved from duty at New Orleans and directed to proceed to Fort Stanton, N. M., for duty and assignment to quarters.

McMahon, R. L., acting asst.-surgeon, granted leave of absence for thirty days from August 15.

Marsh, W. H., acting asst.-surgeon, granted leave of absence for twelve days, from September 19.

Mason, W. G., acting asst.-surgeon, granted leave of absence for nine days from September 16.

Quigley, F. L., acting asst.-surgeon, granted leave of absence for seven days, from September 4, under paragraph 210 of the regulations.

Rodman, J. C., acting asst.-surgeon, granted leave of absence for one and one-half days, from September 13.

Safford, M. V., acting asst.-surgeon, granted leave of absence for three days, from August 29, under paragraph 210 of the regulations.

Sill, R. H., acting asst.-surgeon, granted leave of absence for seven days, from September 30, under paragraph 210 of the regulations.

Walerius, M., pharmacist, granted leave of absence for seven days from September 2, under paragraph 210 of the regulations.

Society Proceedings

COMING MEETINGS.

American Public Health Association, Boston, September 25-29.

Medical Society of the State of Pennsylvania, Scranton, September 26-28.

Association of Military Surgeons of the United States, Detroit, Mich., September 26-28.

American Roentgen Ray Society, Baltimore, September 28-30.

Colorado State Medical Society, Colorado Springs, October 3-5.

American Association of Railway Surgeons, Chicago, October 4-6.

Idaho State Medical Society, Boise, October 5-6.

Delaware State Medical Society, Wilmington, October 10.

Mississippi Valley Medical Association, Indianapolis, October 10-12.

Vermont State Medical Society, Burlington, October 12-13.

New York State Medical Association, New York City, October 16-19.

Kentucky State Medical Association, Louisville, Oct. 18-20.

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

Tenth Annual Meeting, held at Buffalo, N. Y.,
Sept. 14-16, 1905.

Under the Presidency of Dr. Hanau W. Loeb, St. Louis.

Officers.

The following officers were elected: President, Dr. Casey A. Wood, Chicago; vice-presidents, Drs. J. A. Stucky, Lexington, Ky.; Alvin A. Hubbell, Buffalo, N. Y., and Emil Mayer, New York; secretary, Dr. George F. Suker, Chicago (re-elected); treasurer, Dr. Otto J. Stein, Chicago (re-elected).

The place of next meeting will be decided by the council.

An address of welcome was delivered by Dr. Walter D. Greene, commissioner of health of Buffalo, which was responded to by the president.

President's Address.

President Loeb, after referring to the rapid rise of specialism, its divisions and subdivisions, devoted the rest of his remarks to the medicolegal aspects of certain cases of diseases and injuries and complications of the nose, throat and ear. The physician is called on to give his opinion and advice in certain cases as an expert in court. There are essential differences between the testimony of experts and that of ordinary witnesses. Fractures of the nose or involvement of the accessory sinuses may be the bone of contention in court. He cited several cases in point.

Vice-president's Address.

Dr. Derrick T. Vail, Cincinnati, first vice-president, spoke of the medicolegal aspects of ophthalmologic cases, and said that expert testimony implied an accurate and detailed knowledge of the science of ophthalmology coupled with abundant practical experience, and a complete understanding of the plaintiff's condition. He cautioned against examining patients cursorily, as this may lead to a wrong diagnosis. Illustrative cases were cited. Every tissue and organ of the body should be carefully examined before expert testimony is given in court in regard to a given case. Cases of simulation call for great skill on the part of the oculist. He pointed out and emphasized the importance of the expert using simple language in court. Answers to questions should be short, pointed and given in understandable English at all times, if possible.

(To be continued.)

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

Annual Meeting, held in Council Bluffs, Iowa,
Aug. 24-25, 1905.

The President, Dr. S. Grover Burnett, Kansas City, in the Chair.

Dr. S. Grover Burnett, in his presidential address, entitled "Oslerism Bearded, or a Study of Age in Relation to Work," called attention to the fact that Dr. George M. Beard was entitled to priority in suggesting the uselessness of men above 40 years of age. Papers were read by Drs. Leroy Crummer, A. C. Stokes, W. O. Bridges, A. P. Condon and J. P. Lord, of Omaha; Fenton B. Turck and W. F. Waugh, of Chicago; Daniel Morton, St. Joseph; J. W. Kime, Fort Dodge, Iowa; Herman E. Pearse and C. H. Hardin, of Kansas City; T. M. Bogart, of Excelsior Springs, Mo.

On Thursday evening the society was entertained by the local profession at Lake Manawa.

An amendment to the constitution was read, changing the annual meeting to the first Thursday in September.

The secretary's report showed a healthy condition of the society, 41 new members having been added during the year.

The Buchanan County Medical Society extended an invitation to hold the next semi-annual meeting in St. Joseph in March, 1906, which was accepted.

Election.

The election of officers for the ensuing year resulted as follows: President, Dr. John E. Summers, Jr., Omaha; vice-presidents, Drs. C. H. DeWitt, Glenwood, Iowa, and C. B. Hardin, Kansas City, Mo.; treasurer, Dr. Donald Macrae, Council Bluffs (re-elected); secretary, Dr. Charles Wood Fassett, St. Joseph, Mo. (re-elected).

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Burns.

Van Zandt, in *Amer. Pract. and News*, states that nervous shock is the chief cause of death following burns if it occurs early. If the patient survives the first stage general intoxication is the chief factor, or death may occur from an intercurrent disease such as pneumonia, Bright's disease, erysipelas, pyemia, etc. A burn is a wound and demands as careful attention as a wound from any other cause, and the earlier a burn is dressed the better will be the results.

The alleviation of pain is the first thing to be given attention. In burns of the first degree, according to the author, this is best accomplished by dusting the parts with some alkaline powder or by lead water compresses or collodion dressing. If the burn is of the second or third degree it becomes a more serious proposition. Therefore, in selecting a dressing for burns two principles must be considered: The agent must cause no irritation and it must be antiseptic. After cleansing the surrounding skin and irrigating it with a 1 to 1,000 bichlorid solution or a 3 per cent. carbolized solution, the surface should be syringed with a solution of hydrogen peroxid (one part to six of water). The dangers from the use of poisonous antiseptics must be kept in mind. When the burn is extensive this author recommends dressing it by applying strips of rubber tissue one-half inch wide all over the surface of the injured area and extending well over the edges to the sound skin, and over this sterilized gauze and a bandage. When granulations are well started skin grafting is recommended.

In extensive burns the water bath of Hebra is advised, as it does away with the pain of changing dressings.

In burns of limited extent a protective dressing with carron oil, olive oil, white of egg, ichthyol (2 per cent.), resorcin, applied on pieces of sterilized gauze, is recommended.

Picric acid is also mentioned as of service in different strengths, applied early in the disease before granulation begins. It is said to deaden the pain. The author, however, prefers the following combination for burns of any degree:

R.	Aluminis	℥i	30
	Acidi carbol.	ʒi	4
	Ichthyol	ʒiiss	10
	Liq. petrolati q. s. ad	℥vi	180

M. Ft. unguentum. Sig.: Apply locally.

[The foregoing is put in prescription form on the author's statement that he uses alum 15 per cent., carbolic acid 2 per cent., and ichthyol 5 per cent., in liquid petroleum as a base.]

In any case the author advises against dressing the wound too frequently unless there are special indications for it. He is opposed to dusting powders of any sort when the burn is beyond the first degree, because they are irritant in their action and tend to increase the amount of the discharge. The granulations forming over the burned areas must be protected and a perfectly healed wound will be the result, and there will be no deformity from the scar and no loss of function from contraction. The constitutional treatment consists of supporting measures and analgesics if required.

Meyers claims that it is bad surgery to cleanse any burn unless it contain sawdust. By scrubbing a burn the clots which have formed are removed and the wound then presents a good field for infection.

Block recommends a saturated solution of picric acid on cotton as a local application and close observation of the kidneys.

The following combinations are recommended by other authorities for local applications in the treatment of burns:

In burns of the first degree:

℞.	Acidi carbol.	ʒss	2
	Olei lini		
	Aquæ calcis, āā	℥iv	120

M. Sig.: Shake well and apply on lint. Or:

℞.	Acidi picrici	ʒss	2
	Alcoholis	℥i	30
	Aquæ dest.	℥xii	360

M. Ft. solutio. Sig.: Bathe the parts well with the solution, and follow it by an application of the solution on cotton. Or:

℞.	Ext. opii	gr. viiss	50
	Ichthyoli	ʒiv	15
	Liq. petrolati		
	Lanolini, āā	ʒvi	24

M. Sig.: Apply locally on gauze in burns of the first degree.

In burns of the third degree *Merck's Archives* recommends the following:

℞.	Ichthyoli	m. xlv	3
	Olei olivæ	ʒii	8
	Lanolini	℥iii	90

M. Sig.: Apply locally. Or:

℞.	Olei amygdalæ exp.		
	Aquæ calcis		
	Lanolini, āā	℥iii	90

M. Sig.: Apply for two days, two or three times daily, and follow with:

℞.	Aquæ plumbi	ʒv	20
	Liq. petrolati	ʒiv	15
	Lanolini	ʒi	4

M. Sig.: Apply freely once daily.

In cases accompanied by excessive pain the following is recommended:

℞.	Cocainæ hydrochlor.	gr. x	65
	Liq. petrolati	ʒiii	12
	Lanolini	ʒii	8
	Aquæ dest.	ʒv	20

M. Sig.: Apply freely on the painful surface.

Iron Acetate in Pneumonia.

Robson, in *British Med. Jour.*, recommends the following combination, containing the acetate of iron, in the treatment of pneumonia:

℞.	Liq. ferri chloridi	m. xv	1
	Liq. ammon. acetatis	ʒii	8
	Aq. chloroformi	℥ss	15

M. Sig.: One such dose every four hours in water.

It may be given alternately every six hours with a mixture containing strychnia, as follows:

℞.	Liq. strychniæ (1 per cent.)	m. v	30
	Aq. chloroformi	℥ss	15

M. Ft. mistura. Sig.: One such dose every six hours.

The foregoing treatment should be kept up until the crisis has passed. He does not recommend quinin or antipyretics, and seldom prescribes digitalis. He recommends the treatment above outlined in severe cases of bronchopneumonia occurring in infants and children, and in catarrhal and lobar pneumonia occurring in debilitated patients.

Delirium Tremens.

In cases of delirium tremens, when the patient has reached the stage of alcoholic indulgence characterized by insomnia, great excitability and inability to retain food, the *Medico-Chirurg. Jour.* recommends that an active cathartic similar to the following be administered:

℞.	Pulv. jalapæ co.	gr. x	65
	Hydrarg. chloridi mitis		
	Sodii bicarb., āā	gr. v	30

M. Chart. No. i. Sig.: To be taken at one dose.

Should the heart show any signs of weakness the following is recommended:

℞.	Tinct. capsici		
	Tinct. digitalis, āā	ʒiv	15
	Tinct. nucis vom.	ʒii	8
	Spts. ammon. arom. q. s. ad	℥iii	90

M. Sig.: One teaspoonful in water every four hours.

In cases of extreme nervousness accompanied by insomnia, sedatives will be required, and in extreme cases a hypodermic of morphin.

Hyperidrosis.

The following combinations after Unna are recommended by the *N. Y. Med. Jour.* in the treatment of hyperidrosis:

Wash the affected parts with spirits of camphor or with weak solutions of vinegar and follow it with a local application similar to the following:

℞.	Ichthyoli		
	Spts. terebinthinæ, āā	ʒv	20
	Ung. zinci oxidi	ʒx	40

M. Ft. unguentum. Sig.: Apply locally on retiring.

In the shoes the following may be sprinkled:

℞.	Pulv. sinapis	ʒi	4
	Pulv. talci	℥iv	120

M. Ft. pulvis. Sig.: To be dusted in the shoes.

When the hands alone are affected a half-teaspoonful of the following may be thoroughly rubbed into the hands after washing them:

℞.	Tinct. belladonnæ	℥ss	15
	Spiritus oderatus	℥iii	90

M. Sig.: One-half teaspoonful to be rubbed into the hands two or three times a day.

Medicolegal

Immaterial Consultations of Physicians.—The First Appellate Division of the Supreme Court of New York says that the applicant for the life insurance sued for in the case of Valentini vs. Metropolitan Life Insurance Company stated that a certain physician was the one who last attended him, in 1898, for rheumatism, and that he had not been under the care of his physician within two years, unless as stated in previous line. His mother was named as beneficiary. And the consultation of another physician by the mother without the knowledge of the son, or a consultation with his knowledge when he was not suffering from any ailment or disease, the court holds, would not constitute either of his answers a breach of warranty. Again, the court says that it was manifest that a breach of warranty was not established as a matter of law. Assuming that the attendance of the other physician was within two years of the time when the answers were given, yet it was not made to appear that the assured was afflicted with any disease which called for medical attendance, or that it was other or different than a mere fear engendered in the mind of the mother that the son was in need of some medical attendance. It was made affirmatively to appear that the trouble at the most was a slight nervous twitching, which did not interfere with the physical vigor of the insured, or with his ability to attend to his business. The purpose of the question and answer was to inform the company as to the physical condition of the applicant and his probable duration of life and before the court is justified in holding that there is a breach of warranty it must appear that attendance by a physician had been for some substantial disorder, and not for a mere functional and temporary indisposition. This the evidence failed to establish, and the court was not, therefore, justified in determining the question as matter of law.

A Supreme Court on a Low Age of Consent.—The Supreme Court of Mississippi takes occasion, as it says, in Dickey vs. State, to express its opinion concerning the wisdom and justice of the conclusive presumption of law (as apparently at present in that state) that a female child over the age of 10 years has sufficient intelligence and discretion to consent to the surrender of her virtue and the defilement of her person. Every child under 14, the court declares, is presumed by the law to be incapax doli (that is, mentally incapable of entertaining a criminal intent), because presumed not to have developed sufficient intelligence and moral perception to distinguish between right and wrong and to comprehend the consequences of his act. And hence no child under 14 can be punished for any crime except on proof of exceptional intelligence and maturity. And yet, while this is true, and while it is further true that a female child less than 10 years old, by so much as a day, is conclusively presumed incapable of consenting to sexual commerce, a female child over 10, by so much as a day, is conclusively presumed capable of consenting to the sacrifice of her virginity, her social undoing and her moral ruin. This, the court supposes, by analogy, is because she is presumed to have sufficient intelligence and moral discrimination to distinguish between right and wrong, and to comprehend the ruinous consequences of the act. This presumption is inconsistent with the presumption of incapacity to commit crime, and in irreconcilable conflict with the truth, and is an insult to our intelligence. We all know that the overwhelming majority of the girls of this state under 14 years of age, in their ignorance and innocence, do not and can not have any adequate understanding of sexual commerce, nor any comprehension of the ruinous consequences of a lapse from virtue. The legal presumption which declares that every female over 10 years of age is fully capable of giving intelligent assent to her own ruin, and which, therefore, make her fair play for any lecherous scoundrel who can impose on her innocence and credulity, is a reproach to the law, a disgrace to a Christian state, and a blot on the civilization of the age. The girls of the state under 14 should be protected by a legal presumption that they are incapable of consenting to their own shame. This presumption might be made either prima facie or conclusive. If prima facie, it might be allowed to be rebutted on proof of exceptional intelligence and maturity. If conclusive, the penalty might, in the discretion of the trial court, be made either death, imprisonment for life, or imprisonment for a term. In this way, without injustice to any one, our daughters could be protected by the law until such time as they could reasonably be presumed to have sufficient discretion to protect themselves against the machinations of the seducer.

Physician Competent to Give Certain Opinion Evidence.—The Supreme Court of New Mexico says, in Miera vs. Territory, that opinion evidence is not, in its nature, so distinct from and inferior to what is usually termed direct evidence as it is, perhaps, commonly assumed to be. In the last analysis all testimony may fairly be termed opinion evidence, and the court may properly act on the familiar principle that the best evidence should be offered. Unquestionably, in many cases so-called opinion evidence would be more helpful than any direct testimony obtainable, and that for two reasons: First. It may be the testimony of one to whose sight, hearing or other senses has been presented that which can not be reproduced to the jury. It is said in opposition to the admission of such testimony that the facts should be stated to the jury, and the opinion formed by it. But not even the great masters of literature have been able to put in words precisely what they saw, still less what was apprehended by their other senses. In recognition of this truism courts have permitted witnesses to state their opinions with regard to sounds, their character, from what they proceed, and the direction from which they seem to come; as to resemblance of foot tracks; whether a person's conduct was insulting; and where noisome odors render a dwelling uncomfortable, etc. Second. The opinion may be that of a person qualified by study or experience, or both, to understand and explain the subject under consideration, commonly termed an "expert." The opinions of such witnesses are taken in all courts on a great variety of subjects, but not usually on the question whether death was self-inflicted. In State vs. Lee, 65 Conn. 265 (1894), however, and in Commonwealth vs. Leach, 156 Mass. 99, the testimony of a physician was admitted on that point; but in each of those instances the wound testified of was in the uterus, to procure abortion, and it might be said that if it had been an outward wound, open to common observation, the testimony would have been rejected. That objection, it seems to this court, goes to the weight, and not to the admissibility, of such testimony. Physicians have been allowed to testify that sexual intercourse was highly improbable, if not impossible, between a man and a woman in a buggy, which was described to the jury (People vs. Clark, 33 Mich. 1122); that such intercourse by force was impossible with a woman seated in a rocking chair, which was shown to the jury (State vs. Perry, 41 W. Va. 641); and that it was impossible in a winding stairway, which was described to the jury (McMurrin vs. Rigby, 80 Iowa, 322). Certainly it can not be claimed that wounds causing death are more a matter of common knowledge than the act to which the human race owes its continuance. In 41 W. Va. the admission of the testimony in question was put expressly, and in the other cases impliedly, on the ground that the witnesses "had made the human system, including its joints and organs, the subject of peculiar study, such as a jury would be unable to give in the short time allowed them in the examination of the evidence, and thus [could] assist them in arriving at a just conclusion." Precisely that kind of research would qualify one to determine better than an ordinary person could do whether a wound could have been self-inflicted. And this court holds that an experienced physician, who held an inquest on the body of the woman with whose murder the defendant was charged, was properly permitted to testify that, in his opinion, she could not have inflicted on herself the wound of which she died, and that she was sitting down when the shot was fired. To exclude such testimony, it says, is to hold that the opinion of a jury, based on evidence necessarily incomplete, is preferable to that of a man of learning and experience, who has seen and touched that of which he speaks. The value of the physician's opinion was for the jury to determine. If it preferred to form and adopt an opinion of its own on the other evidence given it was at liberty to do so.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

September 9.

1 *Cases Illustrating Some of the Difficulties in Abdominal Diagnosis. E. E. Montgomery, Philadelphia.
2 *Deformities of the Lower Extremity. G. G. Davis, Philadelphia.
3 Therapeutic Value of the Digestive Ferments. H. W. Bettmann, Cincinnati, Ohio.
4 *Repair of the Genital Tract Following Labor. F. C. Hammond, Philadelphia.
5 *Iron Precipitates in the Blood, Spleen and Red Marrow. E. T. Williams, Boston, Mass.
6 *Technic of Pelvic Examination and the Principles of Local Pelvic Medication. E. A. Schumann, Philadelphia.
7 *Advantages of Sanatorium Treatment of Tuberculosis. F. M. Pottenger, Los Angeles, Cal.

1. **Difficulties in Abdominal Diagnosis.**—Montgomery cites the history of six cases, illustrating some of the difficulties, which may be divided into those in which the solution has to do with the existence or non-existence of pregnancy; those in which ovarian tumors may be in question; those in which doubt occurs as to the presence of a myoma, and those in which there is uncertainty as to the existence of other growths.

2. **Deformities of the Lower Extremity.**—According to Davis, the main characteristic of these deformities is weakness. This may be either a weakness affecting the constitution and tissues of the body generally, or it may be a local weakness, or it may be both combined. He divides the cases into three classes: (1) Those due to rickets; (2) those due to paralyses, and (3) those due to deformities of the feet. In these three groups are included most of the deformities of the lower extremities, their diagnosis, prognosis and treatment being considered in detail.

4. **Repair of Genital Tract Following Labor.**—Hammond emphasizes the importance of a thorough examination by inspection, with a good light, of the genital tract as a routine measure on the termination of labor. Repair of lacerations should be done within twelve hours, if the condition of the patient permits. The technic of suturing the various lacerations is thoroughly detailed.

5. **Iron Precipitates in the Blood, Spleen and Marrow.**—Williams found iron precipitates in healthy spleens, in marrow and in healthy blood. He believes the gastric juices extract this iron from the food in the form of a chlorid, which combines with the peptones in the stomach to form a peptonoid. Thence it passes into the portal vessels and spreads through the system. A large amount of it is plainly deposited in the spleen and marrow, where it is intended to serve as pabulum for the young red blood corpuscles.

6. **Pelvic Examination and Medication.**—Schumann says that in all cases involving abdominal section or in which an accurate diagnosis is at all difficult two examinations should be made at least twenty-four hours apart. Inspection is an important and frequently neglected portion of the diagnostic technic and should not be omitted save in cases of extreme delicacy on the part of the patient. Rectal touch, particularly in the knee-chest position, is of great value in determining obscure affections of the pelvic organs. Local treatment, especially the use of the hot vaginal douche, is described at length. The douche should be given at least twice daily, morning and evening, and its administration should last perhaps a half-hour—certainly not less than fifteen minutes. The temperature of the water should be as high as may be comfortably borne by the patient. It may be increased from day to day to 100, 110, 115 and even 120 F. Its use should be continued for over a long period of time, months, and sometimes even years. Long-continued use is essential to the success of the procedure. Too long-continued use, however, of the douche in the normal vagina must never be practiced, since the washing out of the normal vagina of lactic acid bacteria, whose function is to render the vaginal secretion acid and an unfit culture medium for most pathogenic bacteria, renders the passage of such organisms to the higher pelvic organs comparatively easy.

7. **Advantages of Sanatorium Treatment of Tuberculosis.**—Pottenger believes that patients can be treated best in a sanatorium, because (1) they are under the immediate and constant guidance and control of the physician who can see that they do the things which are necessary to help bring about a cure, and prevent them from doing things which tend to lower vitality and retard progress; (2) they are furnished with apartments suitably lighted and ventilated, and with food adapted to their needs and properly prepared; (3) they can be given the advantages of all scientific measures which have proved of value in treatment. Good food, fresh air and careful guidance are the basis of treatment, but the tuberculous individual is not receiving the best that can be had until we give him the benefit of all scientific aids, and of these especially to be recommended are hydrotherapy, the chemic rays, culture products, and direct medication of the upper air tract.

Medical Record, New York.

September 9.

8 *Sciatica and Its Treatment. W. M. Leszynsky, New York.
9 *Scientific Classification of the Methods of Modifying Cow's Milk for Infant Feeding. G. R. Pisek, New York.
10 *Kernig's Sign and Its Pathogenesis. G. B. Hassin, Chicago.
11 *Mechanics of Dorsal Pott's Disease. J. C. Schapps, Butte, Mont.
12 Ear Complications of Cerebrospinal Meningitis. C. J. Colles, New York.
13 Ectopic Gestation Complicated by Mental Disturbance. F. G. Hodgson, Atlanta, Ga.
14 Eye Injuries Due to Blows from the Corks of Ginger Ale Bottles. C. Graef, New York.

8. **Treatment of Sciatica.**—Leszynsky remarks that pain in the course of the sciatic nerve is common, but that genuine sciatic neuralgia is rare. Most of the cases are really perineuritis or interstitial neuritis, while others are symptomatic of interference with nutrition by some extrinsic lesion. The causes of sciatica are exposure to cold, overfatigue of the legs, and pressure on the nerve from habitual sitting in persons whose metabolic processes are impaired by rheumatism, gout, diabetes, or alcoholism, injuries from lifting heavy weights, horseback or bicycle riding, sewing-machine work, etc. Sciatic pain occurs in diseases of all neighboring organs that are associated with compression of the sciatic nerve or sacral plexus. Such are tumors and inflammation in the pelvis, or of the spinal meninges, vertebral caries, uterine disease, pregnancy, parturition, malignant disease of rectum, hemorrhoids, hardened feces, sarcoma of femur, etc. It may result from fracture or dislocation of the thigh. It is rare from lead, mercury, or syphilis. Anemia, chlorosis, and hysteria have little influence in producing it. It may develop suddenly from exposure, or slowly when symptomatic of other diseases. The diagnosis is based on pain or tenderness over the nerve trunk, which radiates to the foot or toes, and diminution or loss of the Achilles tendon reflex. When degenerative, it is accompanied by paralysis, atrophy, vasomotor disturbances, etc. In the treatment of sciatica the first thing is the diagnosis of the cause and its removal when possible. In acute cases heat by the hot wet pack, combined with rest and fixation, and hot saline enemata, relieve pain. The bowels should always be moved by enema, and calomel given to unload the bowel and eliminate poisons. Morphin or opium suppositories are always indicated to obtain sleep at night. Massage, if gentle, is useful. Linear cauterization is of value in relieving pain, as is the ice bag at times. The continuous galvanic current in either direction is useful at the end of one week. It is more useful in mild, subacute or chronic cases. Mild cases will yield to hot packs, massage, and rectal irrigation. In subacute or chronic cases a modified rest cure is essential. Drugs are useless. Daily massage and passive movements and systematic exercises are useful. Hydrotherapy, in form of local wet pack, Scotch douche, etc., is most valuable. Static or faradic electricity in the form of the brush is useful.

9. **Methods of Modifying Milk for Infant Feeding.**—Pisek classifies the principles involved in the methods of feeding now in vogue, so as to show the effect of the use of these methods. Infants develop new functions during the suckling period, and change in form and function until the weaning period, after which growth is principally in size. The teeth in the child are absent, and the stomach is not like that of the adult. The digestive tract is developing and changing in functions, yet the

milk remains practically the same in composition throughout lactation. Hence the stomach as it develops changes the milk so as to make it suitable for its altered form and function. The digestive secretions change the milk, producing curds, and so supplying the solid constituents that are necessary to accustom the stomach to digestion of solids. A large factor in feeding is the gradual changing of diet. The proteids of colostrum are soluble. This is gradually displaced by proteids in the form of casein combined with calcium, which forms curds. The first secretion of the stomach is rennet ferment, which produces paracasein, a compound unaffected by pepsin. A small amount of acid secreted will produce free paracasein curd, which is digestible by pepsin. This is denser than the curd produced by rennet. More acid causes the free paracasein to combine with the acid and form chlorid of paracasein, digestible by pepsin. Thus the stomach may produce three solid compounds with casein of milk, having different forms and digestive properties, depending on the strength of the secretions. The author divides the methods of infant feeding into seven groups. The first group contains all methods that affect the quantitative composition of milk—dilution, with fat and sugar addition and whey and cream mixtures. To insure proper growth and development the infant needs as much tissue and energy foods as are found in human milk. The energy foods in cow's milk are in the same quantities as in human milk, but the tissue foods are in larger amounts. To reduce the quantity of proteids the milk is diluted, and to bring the energy and fat foods up to normal, sugar and fat must be added, otherwise the proteid must supply the energy. If this is not done the infant fails to gain in weight and strength as it should. If the amount of sugar is too great, as in condensed milk, the excess of energy food is converted into fat, and the child gains in weight; it is supposed to be growing, but in reality it is being stunted and deprived of its natural rights, for proteids are needed for true growths, as well as mineral salts for the bones. Whey feeding, with casein removed, can be used only temporarily, as it supplies no solid matter for the stomach to act on. The second group includes methods that inhibit rennet action and formation of curds by the use of alkalies. The normal reaction of mother's milk has been found to be acid. The alkalies prevent the formation of curd in the presence of soluble lime salts. The alkali is always in excess of the amount necessary to neutralize acidity. The effect of any alkali prevents the rennet action and retards the action of the gastric secretions. Group three includes methods that retard rennet action and neutralize the acid of the gastric juice. Here basic compounds are formed with the casein, and all gastric digestion is prevented. Enough alkali is used to neutralize sour milk. Group four consists of methods which precipitate casein by acids. If sufficient acid is present it combines with the free casein and produces an insoluble precipitate like that of sour milk. Group five includes methods that profoundly alter the character of the milk—peptonizing, adding citrate and oxalate of ammonium, potassium, or sodium. They all prevent formation of rennet curds; the milk remains fluid. Group six contains the methods that indirectly alter milk—sterilizing, Pasteurizing, boiling, etc. They prevent the action of the rennet ferment, or render it slower than normal. In group seven are placed the methods that alter the curds mechanically, as by addition of cereal gruels. The gelatinized starch of the gruel makes the curd of the milk softer and more easily digested.

10. **Kernig's Sign and Its Pathogenesis.**—Hassin draws the following conclusions regarding its causation: In Kernig's sign we have, first of all, to do with stretching of the sciatic nerve. In the healthy state this stretching seems not to produce any pathologic conditions; but in disease when the nerve itself is affected or the nerve roots are affected—which undoubtedly takes place in acute meningitis—the stretched, affected roots react correspondingly; the posterior roots by producing pain, and the motor roots by producing contraction of the corresponding muscles, in the case of the sciatic nerve, the flexor muscles. The pain arising from the stretching of the posterior roots makes the patient instinctively keep away from further stretching of the posterior roots, as it happens, for instance, in dislocations when the muscles respond with strong contraction to any active or passive movements in the dislocated joints, so that this explanation may be held, at least, as the simplest one we have for the understanding of the mechanism of Kernig's sign. The occasional occurrence of the sign in typhoid fever may be explained by the fact that the meninges are frequently affected in typhoid fever, so that the sign is due, not to the fever, but to the concomitant meningitis. Regarding other published cases in which Kernig's sign was present in the apparent absence of meningitis, it is hard to prove that in those cases the meninges were not affected, so that, commonly, Kernig's sign may be considered as a standard sign of inflammatory meningeal lesions, and as being due to irritation of the spinal roots, produced by the stretching of the sciatic nerve.

11. **Mechanics in Dorsal Pott's Disease.**—Schapps analyzes the factors concerned in the production of the deformity in dorsal Pott's disease, and lays particular stress on the sternal protrusion. The weakest point is the front of the chest, and without the sternal protrusion the spinal deformity can not possibly take place. During the earlier stages of the disease, treatment in the recumbent position by some such apparatus as the Bradford frame is necessary, and the best and quickest results are obtained by treating the spine with the same gentleness as if it were fractured or otherwise acutely affected. The upright position should be deferred until the acute stage has passed, and the change should be a gradual and careful experiment. Schapps points out the mechanical defects of the ordinary apparatus designed for use by these patients, and says that it is a fallacy to suppose that the spine can be fixed by a brace attached to the back. Other fallacies are belief in the efficiency of spinal leverage and the means of securing vertical relief. He then describes and illustrates his own form of apparatus, which consists of a set of anterior pelvic and pectoral supports designed to be attached to a Taylor back brace in such a way as to support the chest as well as the back. This he considers superior to the plaster jacket or its modifications in regard to both efficiency and cleanliness, while it is also adaptable for use in cases of cervical or high dorsal disease.

Medical News, New York.

September 9.

15 *Recognition and Treatment of Pancreatic Inflammation. C. Beck, New York.
16 *Care of the Infant. H. P. DeForest, New York.
17 *Pneumococcus as a Factor in Hemoptysis. L. F. Flick, M. P. Ravenel, and J. W. Irwin, Philadelphia.
18 Dermoid Cysts of the Mediastinum. (Continued.) R. S. Morris, Ann Arbor, Mich.
19 The Country Practitioner. B. R. Riley, Coyville, Kans.

15. **Pancreatic Inflammation.**—Beck reviews the anatomy of the pancreas, especially its relation to the other abdominal organs, and discusses the clinical history of inflammations of that organ. He says that there is not one sign which is absolutely pathognomonic for pancreatitis. Only by carefully considering the history, the mode of the onset and the various combinations of the different symptoms can a diagnosis be made in most cases. He is convinced that pancreatitis is of much more frequent occurrence than is generally assumed, and that many cases, not only of the chronic, but also of the acute type, could be saved by surgical interference. The method of operating practiced by him is as follows: An incision is made alongside the outer margin of the rectus muscle. If a tumor was felt in the median line, the incision may reach from the xiphoid process to the umbilicus. If the rib arch proves to be in the way, Marwedel's method of resecting it may be advisable. The further procedures must bear an exploratory character. At first the ducts are inspected and palpated, in order to ascertain whether there be a calculus in the Wirsüngian or the common duct, or in the papilla of Vater. In this event, extraction of the calculus must be followed by duct drainage. If such steps are contemplated, large gauze pads must be ready to mop up the secretions as they escape. If there is a pancreatic exudation it must be discharged. During these manipulations the abdomen is frequently irrigated with hot sterile water. Beck regards the use of these simple means as very important in intra-abdominal operations, because they stop surface hemorrhage, permitting the surgeon to see more clearly. At the same time they remove exudations and blood clots in an easy, mechanical manner and eliminate, therefore,

a favorable soil for bacterial development. The repeated hot water irrigations, to a certain extent, also possess bactericidal properties. After the field is thoroughly cleaned, packing with 3 per cent. iodoform gauze is done. If the patient is in grave collapse, ether should not be given, and local anesthesia administered instead. In the subacute, or chronic form, the patient can always be given the benefit of a full general anesthesia.

16. **Care of Infant.**—Forest discusses the care of the mother during the pregnancy; the treatment of obstetric accidents; the hygiene of the infant and its nursing, and feeding during the first few days, until the milk comes.

17. **Pneumococcus as a Factor in Hemoptysis.**—Believing that the pneumococcus is the cause of hemorrhage in pulmonary tuberculosis, Flick, Ravenel and Irwin studied the ejected blood of a number of cases of hemorrhage. The pneumococcus was found present in all. In two of the cases there was a history of exposure to pneumonia in the one, and a history of exposure to another case of hemorrhage in the other. These two cases occurred in an institution in which four cases of hemorrhage occurred about the same time. The nurse who waited on the pneumonia patient came in contact with the other patients in the institution and waited on some of them.

St. Louis Medical Review.

September 2.

20 *Observations and Statistics with Regard to Cases of Variola Handled by the Health Department of St. Louis for the Years 1903-04. H. J. Scherck, St. Louis.
21 Fracture Deformities of the Lower Leg in Childhood. B. M. Ricketts, Cincinnati.

September 9.

22 Cardiac Neurosis: Necessity of Its Proper Diagnosis. G. L. Davidson, Wharton, Texas.
23 Progressive Intensification of Toxicity by Serial Injection of Septicemic Blood. W. H. Ford, St. Louis.

20. **Smallpox in St. Louis.**—During the fiscal year beginning April 1, 1903, and ending March 31, 1904, 228 cases of smallpox were sent to quarantine by the St. Louis Health Department. Of this number, 188 were white persons and 40 colored; 156 were males and 72 were females; 179 persons contracted the disease in the city, and 49 elsewhere; 199 persons had never been vaccinated, 8 had faint scars and 21 had poor marks. Only one patient died. During the year beginning April 1, 1904, and ending March 31, 1905, there were 854 cases, 110 of this number developing in quarantine. Six hundred and thirty-six were white persons; 108 colored; 433 males and 311 females; 715 persons contracted the disease in the city, and 25 elsewhere. As to the vaccinal status, 622 persons had never been vaccinated; 5 had good scars; 30 had very faint scars, and 83 had poor marks. Eighty-seven patients died, a mortality percentage of 11.3. The scars in those who had previously been vaccinated ranged in age from fifteen to fifty years. In regard to the contagiousness of the disease, Scherck states that he does not believe that it can be carried by means of a third party who simply comes in contact with the patient. It had been the experience of the St. Louis Health Department that not a single case can be attributed to contagion carried by physicians, fumigators or others. Furthermore, Scherck does not believe that even those susceptible to the disease can contract it by visiting the rooms recently emptied of smallpox cases. Actual contact with the disease is the only source of contagion. He has also observed that at a certain distance from the patient the poison seems to be so much attenuated that it does not convey contagion. He has noticed that, even in tenement districts, where families live very close to the patient, they have not contracted the disease, while momentary actual contact with the patient has produced the disease at the end of the proper incubation period. He urges that a determined effort should be made by all health officers throughout this country to the end that a compulsory vaccination law shall be enacted for the purpose of stamping out the disease.

New York Medical Journal.

September 9.

24 Surgery at the Dawn of the Nineteenth Century. N. Jacobson, Syracuse, N. Y.
25 Study of Masked Rheumatism. G. F. Souwers, Germantown, Pa.
26 Relative Frequency of a Protruding Lateral Sinus and Its Bearing on the Choice of Method for the Total Opening of the Middle Ear Cavities; with Demonstrations of Anatomic Specimens. E. Amberg, Detroit.
27 Six Lectures on Disease of the Blood. (Concluded.) J. M. Swan, Philadelphia.
28 Death Rate of Infants in the Summer Months. F. L. Wachenheim, New York.
29 Hot Air Treatment of Acutely Inflamed Joints. W. R. Thomson, New York.
30 Prophylaxis in Tuberculosis. C. D. Alton, Hartford, Conn.

Lancet-Clinic, Cincinnati, Ohio.

September 9.

31 Education and the Hygiene of the Nervous System. (Concluded.) H. H. Hoppe, Cincinnati.
32 Masked Epilepsy. W. B. Fletcher, Indianapolis, Ind.
33 Operative Treatment of Laryngeal Tuberculosis. K. K. Wheelock, Ft. Wayne, Ind.
34 Treatment of Typhoid Fever with Castor Oil. C. C. Bass, Columbia, Miss.

American Journal of Obstetrics, New York.

September.

35 Toxemia of Pregnancy with Vomiting. E. McDonald, New York.
36 Treatment of Eclampsia. F. S. Newell, Boston, Mass.
37 *Eclampsia. C. A. Kirkley, Toledo, Ohio.
38 *Infantile Uterus and Its Treatment, with a New Operation for Anteflexion and Stenosis of the Internal Os. G. W. Barrett, Chicago.
39 *Mortality of Operations, Other than Strumectomy in Cases of Exophthalmic Goiter, with Special Reference to Gynecologic Operations. B. C. Hirst, Philadelphia.
40 *Mortality in Operations on Fibroid Tumors of the Uterus. J. M. Baldy, Philadelphia.
41 Viardel's Treatise on Obstetrics. C. G. Cumston, Boston, Mass.
42 Postpartum Hemorrhage. J. T. Johnson, Washington, D. C.
43 *Alexander's Operation Through the Median Incision. K. F. M. Sandberg, Chicago.
43½ Sexual Frigidity in Women. G. Kollscher, Chicago.

37. See abstract in The Journal, June 17, 1905, page 1957.

38. **New Operation for Anteflexion.**—Barrett describes a new method of hysteroplasty which he has been using for the correction of anteflexion and constriction at the internal os, whether muscular, fibrous or membranous, as follows: The uterus is first dilated, and, if necessary, curetted, and should great elongation of the cervix exist, the cervix is amputated. The abdomen is then opened in the median line, and the uterus is brought up and held with a tenaculum placed just above the flexion at the internal os. A longitudinal incision is now made over the internal os, its length corresponding with the extent that the posterior wall needs shortening in order to straighten the uterus. The author's tenaculum forceps is used to change this longitudinal slit into a transverse one, broadening the cervix, the length of the slit, and shortening the posterior walls to the same extent. A median suture is placed while the forceps holds the incision transversely, and at the same time holds the uterus up. The forceps is then removed and one or two sutures are placed on each side of the median suture as needed. This procedure allows the cut ends of the circular fibers to be displaced to the side so that they are from 1.5 to 2 cm. apart, outside measurement. The circumference of the uterus is thus materially increased, and the constriction obliterated. The incision may be carried as deep into the cervical tissue as may be desired, into the canal, in fact, if a membranous stricture exists. The incision, however, grows shorter as it goes inward toward the canal. In the absence of other pelvic lesions, and in cases with a sufficiently roomy vagina, the vaginal route might be chosen.

39 and 40. **Id.**—See The Journal, June 17, 1905, p. 1956.

43. **Modified Alexander Operation.**—Sandberg has devised a modification of Alexander's operation, to be employed in cases of retrodisplacement of the uterus complicated with prolapse of more than a moderate degree. An incision is made in the median line, above the pubis, three or four inches long, down to the fascia. The skin and adipose tissue are then, by blunt instruments, dissected loose from the fascia on the one side until the external ring of the inguinal canal is exposed. The flap of skin and adipose tissue being held aside by two blunt retractors, the round ligament is picked up, freed in the usual way, and secured by a strip of gauze. The same procedure is repeated on the other side. The abdomen is now opened in the median line, and intra-abdominal work carried out in the usual way. In case of prolapse of more than a moderate degree, the sacrouterine ligaments are shortened. This accomplished, the fundus of the uterus is brought well forward, the round ligaments are pulled out through the inguinal canal, and

the effect on the uterus is ascertained. The deeper layers of the abdominal incision, peritoneum, muscle and fascia are now sutured, the peritoneum by interrupted or continuous catgut sutures, the fascia by interrupted figure-of-eight silk sutures. After this the round ligaments are pulled out to the extent indicated by the previous test and fastened by silk sutures, four on each side, of which three are carried through the aponeurosis of the external oblique muscle and the round ligament, the fourth one securing the ligament to the fascia over the pubic bone. The skin and adipose tissue are then united by means of sutures or adhesive plaster strips, but leaving the wound open enough for free drainage. The advantages of the method are: 1. There is only one incision. 2. That this is located where it gives the best access for examination of the pelvic organs and for work in the pelvic cavity. 3. One opens the abdomen for exploration with much less hesitancy when all work can be accomplished through the same incision, and many of the causes of failure of the Alexander operation may be ascertained and avoided by an exploratory opening of the abdomen. 4. The intra-abdominal work is limited as much as possible, stitching of the uterus or the round ligaments intra-abdominally being avoided. 5. It leaves no adhesions or bands between the abdominal wall and the uterus to interfere with the expansion of the bladder, or growth of the uterus in pregnancy, or to cause obstruction of the bowels. 6. The intra-abdominal relations are left in a condition most closely resembling the normal. 7. The part of the round ligaments retained is the thickest and strongest.

American Journal of Medical Sciences, Philadelphia.

September.

44 *Hematemesis from Gastric Ulcer. W. G. Thompson, New York.
45 Angioneurotic Edema. R. S. Morris, Ann Arbor, Mich.
46 *Examination of the Blood in Pulmonary Tuberculosis, with Special Reference to Prognosis. J. T. Ullom and F. A. Craig, Philadelphia.
47 *Rest in the Treatment of Laryngeal and Pulmonary Tuberculosis. W. P. Porcher, Charleston, S. C.
48 Relation Between Anthracosis and Pulmonary Tuberculosis. J. M. Wainwright, Scranton, Pa., and H. J. Nichols, Washington, D. C.
49 *Cyanosis Retinæ. W. C. Posey, Philadelphia.
50 Scarlatinal Otitis. F. B. Sprague, Providence, R. I.
51 *Causes of Gallstones. E. Beer, New York.
52 Contribution to the Doctrine of the Morphology of the Blood, Derived from Experimental Toluylendiamine Poisoning. E. Schwalbe, Heidelberg, and J. B. Solley, New York.
53 Xerostoma. L. S. Somers, Philadelphia.
54 *Clinical Investigations of the Digestion in the Insane. D. M. Cowie, Ann Arbor, Mich., and F. A. Inch, Kalamazoo, Mich.
55 Remarks on the Nature and Classification of Insanity. T. Diller, Pittsburg.
56 *Relation Between Climate and Health, with Special Reference to American Occupation of the Philippine Islands. W. S. Washburn, P. I.

44. **Hematemesis from Gastric Ulcer.**—Thompson studied about 200 cases of gastric ulcer with hematemesis with a view of formulating the indications for operation. The most interesting feature of these cases was the fact that considerably more than one-half of the patients were discharged as cured after serious hematemesis, which occurred either immediately before admission or during the patients' stay in the hospital, or both. The total deaths, numbering 41, present a ratio of one death to 4.8 cases. Included in the deaths which took place among the patients not operated on were several in which the ulcer was not the whole cause; thus 6 patients died from pneumonia, 1 with abscess of the pancreas, 1 with pyonephrosis, 1 with pyopneumothorax and 3 with a subphrenic abscess. One patient had a gastroureteral fistula. In 8 of the patients not operated on and in 3 of the 20 who were operated on, death occurred from the immediate effects of hemorrhage into the stomach, which at autopsy was found filled with blood. In one case, for example, the patient lost 80 ounces of blood, by actual measurement, during the three days that she was in the hospital prior to the operation. Twenty patients were transferred to the surgical division of the hospital for operation; of these 14 died and 6 were discharged as "cured." Of the 14 fatal cases 4 presented a septic peritonitis from perforation and were nearly moribund at the time of operation. Another, as stated above, was moribund from hemorrhage, a sixth was found to have a perforated duodenal (not gastric) ulcer, and a seventh proved fatal on the thirteenth day, a recent perforation having been disclosed at operation. None of these 7 cases, says Thompson, should, therefore, be considered as having any real bearing on the operative treatment of gastric ulcer, for they all presented a forlorn hope, 2 patients dying on the table and 4 within twenty-four hours. It appears that among the 20 patients operated on, the medical diagnosis was erroneous five times, there being 1 case of tuberculosis of the stomach, 1 of perforating duodenal ulcer, and 3 in which no ulcer was discoverable. From a further analysis of these 195 cases it appears that operative measures can rarely be relied on for the cure of active hematemesis, and that also in many cases operation was delayed until the conditions present were too serious to admit of recovery. When successful results are to be anticipated they are to be looked for in the category of cases with adhesions, cicatrices and stenosis chiefly, and in operations such as gastroenterostomy, performed between rather than during, attacks of hematemesis.

46. **Blood in Pulmonary Tuberculosis.**—Ullom and Craig examined the blood in 39 cases of pulmonary tuberculosis with the view of getting information with reference to the value of the blood findings in such cases from a prognostic standpoint. They found that in pulmonary tuberculosis, without cavity formation, a mild anemia, with a decrease in erythrocytes and a relatively greater decrease in hemoglobin, is constant. From the standpoint of prognosis, an increase of the erythrocytes, in cases without cavity formation, is of favorable significance. In advanced cases a decrease of the leucocytes is of unfavorable import. They received the impression that the actual increase of lymphocytes seems to correspond to the increase of resistance on the part of the organism to the tuberculous infection. The transitionals seem to follow the same rule as the lymphocytes in this regard. At the beginning of the investigation the eosinophiles seemed to increase with the patient's improvement, but further study did not support this view.

47. **Rest in Laryngeal and Pulmonary Tuberculosis.**—The great benefit derived from the non-use of the voice, says Porcher, is so striking that no one can fail to appreciate it who watches the progress of the case. It is not alone in cases of laryngeal tuberculosis that complete rest of the larynx and pharynx is indicated. In ordinary pulmonary cases efforts to phonate excite hypersecretion and contraction of the laryngeal muscles. Complete cessation of phonation, therefore, will lessen the amount of cough and consequent prostration, hyperpyrexia, etc. Rest, either partial or complete, should be paramount in all these cases.

49. **Cyanosis Retinae.**—Posey reviews the literature on this subject and cites a case seen by one of his assistants.

51. **Causes of Gallstones.**—The results of investigations made with the view of determining the causation of gallstones are detailed by Beer. He collected 12 cases at autopsy in which there had been common duct obstruction for more than four or five weeks and in which a more or less severe inflammation of the extrahepatic and intrahepatic ducts had developed. In 7 of these cases the common duct was obstructed by calculi, and in 5 by tumors of various kinds. In the first series of 7 cases, as a result of the conditions of the experiments, stones formed in the liver ducts. In the second series of 5 cases, though apparently the same conditions were present, no stones developed, though stagnation of bile and inflammation of the mucous membrane of the bile passages were present. Beer suggests that a faulty hepatic metabolism underlies the formation of gallstones. His investigations show that Naunyn's stagnation of bile, plus inflammation of the bile passage mucosa do not seem to be sufficient by themselves to lead to gallstone formation, even though the time allowed for the working of the causes be adequate. His first series of cases shows that these two factors lead to stone formation in patients who previously had gallstones.

54. **Digestion in the Insane.**—Cowie and Inch record the results of a series of investigations on the work of the digestive glands in the insane conducted at one of the Michigan asylums for the insane. Their conclusions are as follows: In states of mental depression (melanocholia) hyperacidity is the rule, occurring in 71.4 per cent. of von Noorden's 14 cases, 81.8 per cent. of their 22 cases, or in 77.7 per cent. of all cases (36

in number). Males and females are equally affected. This hyperacidity is due to a true hyperchlorhydria. Hyper-total acidity also occurred in their cases, and in this respect they correspond exactly with those reported by von Noorden. The hyperchlorhydria is of moderate degree, is fairly constant, and is associated with increased power and rapid evacuation. The increased secretion is due to the neurosis or psychosis and not to proliferative changes in the glands, as is evidenced by the presence of increased secretion associated with degenerative changes in the glandular elements, and of the entire mucosa. The evacuation of the stomach is usually normal or somewhat hastened after the Ewald test breakfast, while after the large stimulus of the Riegel meal and the ordinary asylum meal it is more frequently hastened. In the cases showing hyperchlorhydria the peptic value is never below normal and is frequently increased. Many of the insane suffer from various forms of gastrointestinal disease. These conditions are very frequently overlooked, probably because complaints and delusions of the digestive tracts are so common in these patients. Experience and the results of this investigation prompt Cowie and Inch to urge the absolute necessity for systematic routine examination of all the secretions and functions of the body in these patients, including what is often a very difficult task, the examination of the stomach contents. The signs of disease in the insane are almost wholly objective, and here more than in normal mental states it is essential that every modern method of value should be exhausted in order to arrive at a complete diagnosis of the case. Cancer and ulcer of the stomach may thus often be recognized in its incipiency. Chronic gastritis in its several forms, as well as the painful neuroses, will also often be encountered. If proper treatment be instituted it is not at all improbable that the mental symptoms in these cases will proportionately decrease.

56. **Relation Between Climate and Health.**—Washburn discusses the relation between climatic conditions and health, with special reference to Americans in the Philippine Islands. He says that with respect to the principal climatologic factors, temperature, humidity and atmospheric movements, the climate of the Philippine archipelago is not extreme, as it is distinctly insular in character, the greater portion of the land area being not far distant from the ocean. There are other modifying influences which obtain in portions of the archipelago, such as general oceanic and local inter-island currents, prevailing winds, elevation, the state of cultivation and drainage of soil, and the presence of forests and other plant life. Excluding localities in the tropics characterized by excessive heat, high relative humidity or unhealthful soil conditions, acclimation or physiologic adaptation of the white man to tropical environment is possible. Failures of the white race to live in the tropics and to maintain health, excluding localities indicated in the second conclusion, appear to have been due principally to non-observance of the rules of personal, domestic and public hygiene. As a rule, Americans appear to become acclimated in the Philippines during the third year of residence. With sanitary surroundings, and by observing the rules of personal and domestic hygiene, residence of Americans in the Philippine Islands appears to be attended with as little danger of disease and death as residence in the United States under similar sanitary conditions.

Annals of Ophthalmology, St. Louis, Mo.

July.

57 *Corneal Cyst. M. Frank, Chicago.
58 Technic of Implanting Thiersch Epidermis Grafts in the Operation for Symblepharon. F. C. Hotz, Chicago.
59 Congenital Paralysis of the Abducens of One Eye with Convergent Squint of the Other. V. L. Raia, Providence, R. I.
60 Two Cases of Spasmus Nutans. M. Buchanan, Philadelphia.
61 Ptosis and Operation of Motais. H. D. Bruns, New Orleans.
62 Case of Keratitis Nodosa. O. Wilkinson, Washington, D. C.
63 Ablepharia Partialis of Upper Eyelids. L. W. Fox, Philadelphia.
64 Proof of the Existence of Amblyopia Ex Anopsia in Strabismus. W. B. Johnson, Paterson, N. J.
65 *Operation for Entropion and Trichiasis by a New Method. S. Lagleyze, Buenos Ayres.
66 Radium in Trachoma. J. C. Beck, Chicago.
67 Hysterical Blindness—Its Treatment. A. D. Williams, St. Louis.
68 Eye-Strain. E. H. Hazen, Des Moines, Iowa.
69 Etiology of Astigmatism. G. M. Gould, Philadelphia.
70 Intraocular Infection of Endogenous or Metastatic Origin. J. Terson, Toulouse.
71 Accident with Adrenalin. D. De Beck, Seattle, Wash.
72 Memorial Volume to Julius Hirschberg, on the Twenty-fifth Anniversary of His Professorship in the University of Berlin, translated by C. Loeb, St. Louis.

57. **Corneal Cyst.**—Frank relates a case of corneal cyst in which there was no history of trauma or previous inflammation of the cornea. The patient had noticed the growth for fifteen years. It was situated at the apex of a pterygium, on the nasal side of the right cornea. The cyst measured 3 mm. in height, 4 mm. in width, by 5 mm. in length. It was opaque, whitish in color and firm to the touch. It contained about 2 mm. of a clear, almost colorless fluid, faintly alkaline in reaction. Microscopic examination of the cyst contents showed cellular débris and a few epithelial cells. The pterygium was torn loose from the cornea with a strabismus hook, destroying the anterior cyst wall at the same time. Forming the posterior surface of the cyst was a firm, thin scale of tissue, measuring 3 by 4 mm., which had probably separated from the cornea by pressure necrosis. This was dissected out and the wound in the conjunctiva was drawn together with two sutures and the corneal area corresponding to the cyst curetted. The wound healed promptly.

65. **New Operation for Entropion and Trichiasis.**—For the past ten years, Lagleyze has practiced exclusively in entropion, whether of the upper or lower lid, a method of his invention, which he has used in more than 300 cases without reproduction or injury to the normal aspect of the palpebral opening or to the lids. The operation does not require general anesthesia; local anesthesia is sufficient. He instills a few drops of cocain solution over the globe, and injects the same solution under the skin of the lid to be operated on; to the cocain solution he adds adrenalin chlorid. The necessary instruments are: a needle-holder, a bistoury, a pair of scissors to cut the threads of the sutures, which are to be of silk, and introduced by means of a number of curved needles about 3 cm. in length. For a complete entropion he employs six needles; for a partial entropion he uses a number in proportion to the extent of the entropion. After sterilizing the instruments, and making the region and field of operation aseptic, he proceeds to operate in the following manner: 1. The lid is everted in such a way that the limits of the superior border of the tarsal fibrocartilage are easily presented in the field of operation. 2. He inserts the needles into the conjunctiva, at the level of the tarsal superior border; slipping them between the fibrocartilage and the skin, so that they traverse the cellular tissue and orbicular muscle, and come out through the free palpebral border, at the level of the angle of implantation of the lashes. The needles should not be passed entirely through, but should be disposed so as to form a picture like that in Critchett's amputation. The needles should be spaced equidistant, it being advisable to commence by placing the first in the center, in order not to be preoccupied by maintaining the lid everted; then the others are inserted adjoining the center until the angles are reached. 3. He incises the conjunctiva and the tarsal cartilage parallel to the border of the lid, approximately 3 mm. from the free border, from one extreme to the other, if the entropion is complete. In partial entropion the incision must be made in proportion to the deformity, it being preferable, always, to extend the incision beyond the limits of the entropion. The incision is to be made with a bistoury, energetically, until obstructed by the needles, it being evident that a good result depends principally on a good division of the tarsus. 4. He passes all the needles and uses a traction on each of them, so that the deep loops of the thread are adapted to the surface of the conjunctiva. Immediately after the withdrawal of the needles, the lid returns to its former position. The ends of the threads which issue from the palpebral border must be separated so as to obtain five loops, if six needles have been employed. The ends corresponding to each loop should be strongly adjusted to a small roll of gauze. Making the knots in this manner the free border is not damaged, the sutures are not lost in the ulcerated tissues, and consequently there is no difficulty in withdrawing them. The advantage of this suture is due to the fact that the loops are successive without solution of continuity, thus obtaining a number of loops equal to the number of needles employed, less one. The sutures are to be withdrawn in seven or eight days. The palpebral border, from the point of incision, takes a contrary direction; it is

directed forward to such a point that if it is desired to exaggerate the effect, it may provoke a slight ectropion. The angle left by the incision forms a wedge which cicatrizes by second intention, filling the tissues with a new growth, and the length of the threads which maintain the corrective incurvation produces cicatricial lines which assist in the definite cure of the entropion.

Annals of Gynecology and Pediatry, Boston.
August.

73 General Considerations on Criminal Abortion. C. G. Cumston, Boston.

St. Louis Courier of Medicine.
August.

74 Baby Incubators on the "Pike." J. Zahorsky, St. Louis.
75 What Are the Interests, Duties, Rights and Privileges of the Medical Profession. F. J. Lutz, St. Louis.
76 What Experience Has Shown. G. Homan, St. Louis.
77 Outline History of Hospital Commission (1895-1899). A. Merrell, St. Louis.
78 System Under which Charity Hospitals Operate in Other Cities. L. S. Luton, St. Louis.

Southern Practitioner, Nashville, Tenn.
August.

79 Perinephritic Abscess. W. A. Bryan, Nashville.
80 Food Adulteration in Tennessee. L. Brown, Nashville.
81 Tuberculosis Cutis. J. M. King, Nashville.

Journal Missouri State Medical Association, St. Louis.
August.

82 Tuberculosis the Problem for the General Practitioner. W. Porter, St. Louis.
83 Recent Advantages in the Etiology and Treatment of Hay-fever. H. W. Loeb, St. Louis.
84 Medical Education. C. M. Jackson, Columbia.
85 Case of Indigenous Tubercular Leprosy. J. Grindon, St. Louis.
86 Importance of Certain Points in the Diagnosis and Surgical Treatment of Appendicitis. J. V. Brown, St. Louis.
87 Method of Radical Relief of Cases of Deafness Long Abandoned as Hopeless; Illustrated by a Case of Nineteen Years Standing. R. Barclay, St. Louis.
88 Practical Suggestion Respecting the Removal of Foreign Bodies from the Larynx; Illustrated by a Case of Cockle-Burr on the Vocal Cords. R. Barclay, St. Louis.

New Orleans Medical and Surgical Journal.
August.

89 Barber Shop in Society. I. Dyer, New Orleans.
90 Cases of Raynaud's Disease and Ainhum. B. A. Colomb, Union, La.
91 Acute Pneumonia and Its Modern Treatment. L. G. LeBeuf, New Orleans.
92 Urine in Gastrointestinal Fermentation. A. C. Eustis, New Orleans.
93 Hemorrhage into Cecum from an Anomalous Appendicular Artery. F. W. Parham, New Orleans.

Albany Medical Annals.
August.

94 Committee on Classification of the Forms of Insanity. J. B. Chapin, H. B. Meredith, D. D. Richardson and G. I. McLeod.
95 Extra-Articular Tuberculosis of the Bones. C. G. Cumston, Boston.
96 Case of Chronic Eczema Involving the Entire Skin Surface. H. W. Carey, Troy, N. Y.

Journal Michigan State Medical Society, Detroit.
August.

97 Past and Present Status of the Medical Profession in Michigan. B. D. Harison, Sault Ste. Marie.
98 Surgery and Human Welfare. F. B. Walker, Detroit.
99 Is Gynecology to Remain a Separate Specialty? R. R. Smith, Grand Rapids.
100 Placenta Prævia. G. W. Nihart, Petoskey.
101 Difficulties in Diagnosis of Syphilis. J. F. Breakey, Ann Arbor.

Buffalo Medical Journal.
August.

102 Submucous Resection of Nasal Septum. J. J. Mooney, Buffalo.
102½ Prognosis of Asthma from a Digestive, Blood, Metabolic, Etiologic Standpoint. G. N. Jack, Buffalo.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.
August.

103 Organization and Operation of the Medical Service at the Front in Modern Warfare. P. Imbriaco, Italy.
104 Sanitary Sergeant. O. H. Marion, Boston, Mass.
105 Case of Acute Tetanus Successfully Treated with Antitetanus Serum. H. W. Austin, Public Health and Marine-Hospital Service.
106 Surgical Experience After a Venezuelan Battle. J. C. Pryor, U. S. N.
107 Experiences of a National Guard Regiment in Connection with the Combined Regular Army and National Guard Maneuvers at Manassas. V. Kenerson, Buffalo, N. Y.
108 Medication on the Firing Line. W. F. Waugh, Chicago.
109 Surgeon of the National Guard. R. W. Montelius, Pennsylvania.
110 Use of Motor Wagons in the Medical Service at the Front. H. Mareschal, France.

Journal Mississippi State Medical Association, Vicksburg.
August.

111 Abscess of the Liver. E. M. Holder, Memphis, Tenn.
112 Phases of Medical Education. P. W. Rowland, Oxford.
113 Cholecystectomy. M. O. Shivers, Greenville.
114 What Are We to Expect from Serum Therapy? J. B. McElroy, Memphis, Tenn.

Denver Medical Times.
August.

115 Physics and Chemistry of Drug Action. E. C. Hill, Denver.
116 Normal Obstetrics, Physiology of the Puerperium. T. M. Burns, Denver.

Kentucky Medical Journal, Louisville.
August.

117 Hemophilia. I. Abell, Louisville.
118 The Doctor as Business Man, or the Business Side of a Doctor's Life. B. A. Caudle, Newstead, Ky.
119 Cyst of the Kidney—a Clinical Case. J. G. Sherrill, Louisville.
120 Extrauterine Pregnancy, Fatty Degeneration of Uterus, Sarcoma of Jaw—Pathologic Report. I. Abell, Louisville.
121 Cesarean Section. L. Frank, Louisville.
122 Pathologic Specimens---Dermoid Sarcoma—Extrauterine Gestation. L. Frank, Louisville.
123 Ophthalmia Neonatorum. H. Wood, Nashville, Tenn.
124 Food Poisoning. W. E. Shepherd, Taylorsville, Ky.
125 Typhoid Fever. J. W. Barnhill, Owensboro, Ky.

Virginia Medical Semi-monthly, Richmond.
August.

126 Treatment of Typhoid Fever. G. F. Jewett, Britton.
127 Stricture. R. C. Bryan, Richmond.
128 Diagnosis and Treatment of Stricture of the Urethra. L. T. Price, Richmond.
129 The Nose. C. M. Burton, Lexington, Va.
130 Matrimonial Aspect of Tuberculosis. A. B. Greiner, Rural Retreat, Va
131 Surgery of Typhoid Perforation. E. A. Babler, St. Louis.

California Medical and Surgical Reporter, Los Angeles.
August.

132 Certain Types of Association and Habit Neuroses. J. T. Fisher, Los Angeles, Cal.
133 Cystic Degeneration of the Chorionic Villi (Vesicular Mole). T. P. Gerson and A. Fellows, Los Angeles.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.
August 26.

1 Clinical and Bacteriologic Aspects of an Epidemic Simulating Influenza. R. A. Dunn and M. H. Gordon.
2 *Rats in Relation to Plague. B. Skinner.
3 Case of Emmetropia. A. Bronner.
4 *Intraocular Tuberculosis. W. H. Jessop.
5 *Id. K. Hess.
6 *Id. J. Hern.
7 Capsular Complications After Cataract Extraction. E. T. Collins.
8 Filtration of Fluid in the Eye When Under the Influence of Atropin or Eserin. E. E. Henderson.
9 *False Hay Fever. N. B. Harman.
10 Congenital Absence of the Dilator of the Pupil. K. Grossmann.
11 Conical Cornea and Hot-air Cautery. K. Grossmann.
12 Case of Amblyopia Apparently Toxic, Following Influenza. C. E. Shaw.
13 Effect of the Presence of Adenoids and Other Abnormalities in the Nasopharynx on Some Affections of the Eyes. J. Hern.
14 *Evolution in Blepharoplasty. A. H. Benson.
15 New Test for Visual Acuteness. G. A. Berry.

2. **Rats and Plague.**—Skinner discusses the question of whether rats are really the transmitters of plague to man or whether some other animal is responsible for the conveyance of disease. He inclines to the latter view.

4. **Intraocular Tuberculosis.**—Jessop has never seen a case he could prove to be primary intraocular tuberculosis, and doubts the existence of such a condition. He says that excision in intraorbital tuberculous conditions of the eye should seldom be done, unless there is much pain or the condition is telling on the patient's health, because the disease is not primary, and such a procedure would only remove one focus of the disease. He has never seen vitreous opacities in miliary tubercle of the choroid; neither were they present in two cases of chronic choroidal tubercle seen by him. He has had little experience with tuberculin, either as a diagnostic or as a therapeutic agent.

5. Id.—Hess employed old tuberculin in eighteen cases and Tr. in eight cases for diagnostic purposes. In thirteen cases there was a general reaction and in two cases a local reaction. Among the cases of iritis, a general reaction was present in more than 50 per cent. It was also present once in

a case of recent choroiditis, and once in a case of keratitis parenchymatosa. He has never observed any ill-effect from tuberculin employed therapeutically. In one case of iritis there was an evident improvement after its use.

6. **Id.**—Hern has employed the new tuberculin for diagnostic purposes in many cases. In at least 85 per cent. of the cases there was a general reaction, and in about 50 per cent. there was some local reaction. He considers tuberculin useful as a diagnostic agent, but useless in treatment. He believes that in some cases it was harmful by setting up inflammatory changes in the eye.

9. **False Hay-Fever.**—Harman calls attention to an infection that simulates true hay-fever, but which is caused by eye-strain. Several such cases of astigmatism were relieved of the hay-fever symptoms by the wearing of proper glasses.

14. **Blepharoplasty.**—Benson describes what he terms the St. Mark's Hospital operation as follows: The patient being anesthetized, and a Snellen's or a Knapp's clamp having been applied to the lid, an incision is made with a Graefian knife along the whole length of the free border of the lid in such a way that all the cilia are contained in the anterior or skin flap, and no cilia in the posterior or conjunctival flap. The incision is made at least one-quarter of an inch in depth and rather obliquely forward, so that it allows the wound to gape freely. In case any errant hair bulbs have been left in the posterior segment, these can be easily dissected out. A second clamp is now applied to the patient's lip, and two parallel incisions are made with the Graefian knife through the mucous membrane. The length of these incisions is rather shorter than the incisions in the lid. The ends of these parallel incisions are now connected by short converging incisions so as to make the flap pointed at each end. This flap is then dissected up with a scissors and forceps. It is placed on the finger of the left hand, and all submucous fat and connective tissue is cut off with a scissors. A silk suture attached to a fine curved needle is then passed through one end of the flap and it is sutured into one end of the gaping incision made in the lid. The other end is similarly sutured, and each edge is fixed by two or more sutures to the corresponding edges of the lid incision. The clamp is then removed. Profuse bleeding follows for a few minutes, but soon stops. A dressing of boric ointment is applied to the eyelid and a simple form of a bandage is applied. The sutures may be removed after four or five days. A knot on the silk suture used to fix the extremities of the flap considerably aids its accurate adaptation. The operation is equally suitable to the upper and the lower lids and to all varieties of trichiasis, with or without entropion. The result of the operation is permanent.

The Lancet, London.

August 26.

16 Condition of the Blood Vessels During Shock. J. D. Malcolm.
17 Chemical Correlation of the Functions of the Body. E. H. Starling.
18 *Aciduria (Acetonuria) as the Cause of Deaths Following the Administration of Chloroform and Ether. L. G. Guthrie.
19 Contracted Muscles of Infantile Paralysis. F. R. Fisher.
20 Two Cases of Glanders. E. W. Goodall.
21 *Syphilis of the Third Generation. C. F. Marshall.
22 *Ruptured Interstitial Pregnancy; Abdominal Hysterectomy; Death. W. G. Nash.
23 Abdominal Surgery Based on Completed Records of 744 Cases E. S. Bishop.
24 *Case of Blackwater Fever Occurring in the North of Ireland and Treated with Quinin. R. Mowbray.
25 Technic of the Examination of Sputum for Tubercle Bacilli Fully Described. C. G. Higginson.

18. **Aciduria as Cause of Death After Anesthesia.**—Guthrie is of the opinion that the symptoms preceding death in these cases suggest acid intoxication by the poisonous precursors of acetone, and that these bodies take their origin in the disintegration of fat. In practically all cases of death following the administration of anesthetics, advanced fatty metamorphosis is found in most organs, notably in the liver. Ether is not capable of producing similar changes, yet they are found apparently to the same extent in deaths following ether as in deaths after chloroform. It therefore follows that such fatty metamorphosis must have existed prior to the anesthetization. The disintegration of fat into acid poisons may be due to the direct action of chloroform and ether in altering normal metabolism, or in some way they may favor the action of bacterial toxins present in the intestines in causing disintegration of fat. In any case, says Guthrie, the pre-existence of advanced fatty changes must be presumed in order to explain fatty acid intoxication, although it is probable that the fatty changes in the liver are physiologic and of the nature of infiltration rather than of degeneration. If this be so, it is possible to understand why anesthetics are dangerous at one time and not at another, the element of danger being the superabundance of fat existing in the liver at the time of operation. The storage of superfluous fat in the liver in some case may be due to the large quantities of cod-liver oil and fattening diet commonly supplied to delicate, crippled and rickety children in the hope of strengthening them, coupled with want of exercise. In accordance with the foregoing views, Guthrie advances the following conclusions for the prevention of untimely deaths of children after operations: 1. Before operation on even fat and apparently healthy children a careful inquiry should be made as to history of so-called "bilious attacks," which may in reality be those of "acidosis." 2. In all cases in which overfattening and want of exercise are suspected, operation should be delayed, if possible, until the patient has for some days been subjected to fat-free diet. Mild purgation during this period is probably indicated. The urine should be examined for diacetic acid and, if present, a course of alkalies, such as bicarbonate of sodium, should be prescribed. 3. It should be remembered that both starvation and fright give rise to acetonuria. The four hours' fast usually imposed on children before operation is too long, especially when one considers that it will necessarily continue not only during the operation, but for many subsequent hours. Nutrient enemata should be given, after clearing the lower bowel, two hours before an operation and immediately afterward. The effect of fright can not be altogether controlled, but may be combated by preventing starvation. 4. The treatment of symptoms of acid intoxication following operations should be by venesection, saline transfusion, and by clysters of solution of bicarbonate of sodium.

21. **Syphilis of Third Generation.**—Marshall cites a case of this kind. The grandmother of the patient had the scars of multiple gummata about both knees. The mother, at the age of 16, had a gumma of the popliteal space and extensive destruction of the palate leading to constriction of the nasopharynx. She married at the age of 19 years and had three children, but no miscarriages. The first child (the one under consideration), had a distinct saddle-nose deformity and frontal bosses, but no other dystrophic stigma of hereditary syphilis. The second child died at the age of 3 years from bronchitis; the third child is said to be healthy. The possible flaws in the evidence are: 1, Acquired syphilis in the mother; 2, reinfection of the hereditary syphilitic mother; 3, acquired syphilis in the father, and 4, the intervention of another syphilitic genitor. In the absence of obvious signs of hereditary syphilis in the mother, says Marshall, it is absolutely impossible to exclude acquired syphilis, but extensive or advanced tertiary syphilis at the age of 16 years is strongly in favor of the hereditary disease. Syphilis of the father can not be excluded, as he was not examined. In view of the fact, however, that all three generations were under observation for some years, Marshall is of the opinion that the case can be regarded as one of probable transmission of syphilis to the third generation. He concludes his paper as follows: 1. The degenerative or dystrophic effects of syphilis are transmissible to the third generation and possibly further, only to die out with eventual sterility. 2. Although difficult to prove, the transmission of the virulent hereditary syphilis to the next generation is scientifically possible; the question depending chiefly on the two factors of time and treatment. We know that the signs of late hereditary syphilis may be delayed till the procreative age; hence a hereditarily syphilitic genitor in a virulent state might transmit the disease in virulent form to the offspring. The reason why such cases are rare is the fact that a small proportion of patients marry while suffering from hereditary syphilis in a virulent form. At the time of marriage the disease is usually attenuated by time and also by treatment if this has been adequately administered. 3.

Reinfection of a hereditarily syphilitic genitor increases the virulence of the disease and its fatal effects on the offspring (binary syphilis of Tarnowsky). 4. The two chief obstacles to actual proof of transmission to the third generation are the possible reinfection of the second generation and the possible intervention of another syphilitic genitor.

22. **Ruptured Interstitial Pregnancy.**—Nash's case is an example of interstitial pregnancy, the rarest form of extrauterine gestation. During the fourth month (fifteenth week), rupture occurred, and in spite of operation the patient succumbed. Apparently the ovum became delayed in the left Fallopian tube where it passes through the uterine wall, and as it developed caused hypertrophy of the uterine tissues above the entrance of the tube. The uterine tissue was thinnest on the abdominal aspect of the gestation sac, so that when rupture took place it occurred into the peritoneal cavity. There was no separation of the uterine decidua, which accounted for the absence of vaginal hemorrhage or any other sign suggestive of an ordinary miscarriage.

24. **Quinin in Blackwater Fever.**—Mowbray reports a case of blackwater fever occurring in the northern part of Ireland, the patient having been infected a year or more previously in Africa. Quinin was given hypodermically in an initial dose of 18 grains, followed by 10 grains three times daily for five days, and then twice daily for two days more. The patient improved rapidly, but on the discontinuance of the remedy suffered an alarming relapse. A renewal of the quinin again brought about abatement to the symptoms, and the patient recovered.

Bulletin de l'Académie de Médecine, Paris.

Last indexed page 426.

26 (Year LXIX, No. 27.) *La marche du choléra en 1904 et sa menace d'invasion européenne. A. Chantemesse.
27 *L'hérédité des stigmates de dégenerescence et les familles souveraines (and reigning families). V. Galippe.
28 (No. 28.) *Observation de fibrolipome tuberculeux du genou (of knee). Couteaud and P. Reynier.
29 *Influence de certaines maladies intercurrentes sur la marche des palatoplasties. Ehrmann.
30 *Anesthésie complète produite chez les animaux par la voie sous-cutanée et par la voie stomacale. N. Gréhant.
31 (No. 29.) *Du prognathisme inférieur. V. Galippe
32 *De l'examen clinique des échanges respiratoires. A. Robin and M. Binet.
33 Action des ferments métalliques sur les éléments figurés du sang (of blood). A. Robin and P. E. Weil.
34 Id. sur la production de l'azote total de l'urée et de l'acide urique. Acide urique et leucolyse. Id.
35 (No. 30.) Causes de la faible mortalité infantile dans la ville industrielle de Creusot, France. Varlot and Pinard.
36 *Pylorectomie avec gastrectomie plus ou moins étendue dans le cancer de l'estomac. A. Poncet and X. Delore.
37 *L'albuminurie dans ses rapports avec le diabète; ses conditions pathogéniques et ses formes diverses (diabète albumineux avec ou sans glycosurie). Lancereaux.
38 Influence du sel marin sur l'évolution des oeufs et larves d'Ankylostome dans les galéries de mines de houille (salt in fight against ankylostoma in mines). Calmette.

26. **Onward March of Cholera in 1904.**—This article was summarized in the news columns on page 336.

27. **Hereditary Transmission of Stigmata of Degeneration in Royal Families.**—Galippe remarks that a scientist who should forcibly apply the rules of puericulture to the production of teratologic monstrosities would be blamed, but that which is denied to the experimenter has been realized in certain reigning families of Europe. Instead of sexual selection, marriage has been regulated by pride of caste or political necessities, and the resulting intermarriages have perpetuated certain stigmata which can be readily traced through generations by portraits and historical records. In the Hapsburg family of Austria, for instance, the inferior prognathism and exaggerated development of the lower lip can be traced in the portraits through generations. When an anomaly of this kind occurs it is generally accompanied by other anomalies, obvious or internal. In the Hapsburg family the portraits from the middle of the fifteenth century to our day show a lateral flattening of the skull, causing the forehead to be unusually high, the eyes more or less protruding and the lower jaw and nose varying from normal. Even when the female members of the family did not present these stigmata they conferred them on their offspring. Napoleon's son by the Austrian princess had all the characteristics of the Hapsburgs, not of Napoleon. The claim of Naundorff to be the missing son of Louis XVI and Marie Antoinette was disproved by the absence of the Hapsburg stigmata which he would certainly have inherited, as both father and mother were of the Hapsburg stock. Galippe regards inferior prognathism, that is, the lack of correspondence between the upper and lower jaw and the protrusion of the latter, as a sign of marked degeneracy. It has been developed in the bulldog, and this breed of animals is developing other stigmata of degeneracy. In animals it is usually accompanied by a twisting and shortening of the legs, as in the crocodile. In man it is frequently accompanied by many of the signs of acromegaly. He gives a number of illustrations of members of the Hapsburg family, all showing the projecting lower jaw and long, narrow face, the frequent coincidence of adenoid vegetations being an added anomaly. This adenoid type is reproduced again and again in the reigning families so that many of the portraits are actually superposable. Acromegaly is at the top of the scale in which inferior prognathism is at the bottom, but the similarity between them in many respects suggests new fields for research in regard to the transmission of stigmata of degeneracy.

28. **Tuberculous Fibrolipoma of the Knee.**—Couteaud's patient recovered normal use of the joint after extirpation of the growth, which weighed 14 gm. Its tuberculous nature was demonstrated by the microscope and by inoculation of guinea-pigs.

29. **Influence of Intercurrent Diseases on Course of Palate Operations.**—Ehrmann reports three cases in which intercurrent scarlet fever in two and diphtheria in the third did not interfere with the success of the suture. Others have reported serious disturbances from an intercurrent affection. In his patients the first symptoms did not appear until three days or more after the operation and the suture escaped infection in all. He ascribes this fine result partially to his technic of operating in two sittings. His experience now comprises 65 cases in which he operated in this way. By reducing hemorrhage and shock, the child's receptivity is diminished and it is able to resist bacterial invasion better.

30. **Complete Anesthesia by the Subcutaneous and Stomach Routes.**—Gréhant injected 1 cg. of morphin per kilogram in a dog weighing about fifteen pounds, and in half an hour he poured into its stomach 350 c.c. of 10 per cent. alcohol containing 1.75 c.c. of chloroform. The resulting anesthesia in fifteen minutes was more complete and the dog was more tranquil than he has ever observed in all his experience with experimental anesthesia. In further tests with the same technic on a larger dog he noticed that the rectal temperature dropped several degrees and that the amount of carbonic acid gas exhaled by the lungs was much less than before, which explains the lowering of the temperature. Chloroform dissolves readily in 10 per cent. alcohol; a liter takes up 5 c.c. of chloroform, and this is the solution which he uses. He recommends this technic for man in case of extensive burns and crushing accidents. By injecting a small amount of morphin and giving a little chloroform in diluted alcohol it may prove possible to arrest all the pain without injury to the patient.

31.—See 27 above.

32. **Clinical Examination of Respiratory Interchanges.**—Hitherto investigation of the respiratory interchanges has been confined to the laboratory, but Robin has now invented an apparatus which allows it at the bedside. He gives a number of illustrations of the various parts of the apparatus. It registers the number of inspirations per minute, the volume of maximum expiration or the vital capacity, the pulmonary ventilation or volume of air expired per minute, the amount of carbonic acid and of the various gases produced, combined or absorbed, and the relations between these various factors of the respiratory functions. He has been conducting research with this apparatus on patients with typhoid fever, pleurisy, ascites, diabetes, osteomalacia, dyspepsia, cancer, hemorrhage, tuberculosis and the rheumatic diathesis. Study of the respiratory interchanges further throws light on the effects of drugs and of hydrotherapy and climatotherapy. In typhoid fever the respiratory interchanges are in inverse proportion to the severity of the disease. These findings justify the use of drugs which increase the consumption of oxygen and favor oxidations, and they contraindicate drugs with opposite effects.

In cases of ascites the respiratory changes are increased, paralleling the amount of ascites. The liver and the lungs have a common function, the elimination of carbon. When one becomes unequal to the task the other vicariously takes it up. After puncture, which relieves the ascites and hence the liver, the latter organ is able to reassume some of this task, and the interchanges in the lungs subside to a lower figure. This conjugate vicarious action of liver and lungs suggests, he thinks, that it might be possible to stimulate the liver functions to increased vicarious action when the lungs are unable to eliminate all the carbon necessary, or *vice versa* to stimulate the lungs to vicarious action when the liver is proving insufficient. Another important point in this connection is that the respiratory chemistry may serve to determine the best moment for tapping ascites. In diabetes the respiratory changes are more intense than in normal conditions. Consequently it can not be considered a disease due to retarded nutrition, but rather the reverse. It requires sedative medication and not measures to stimulate the various chemical activities of the organism. Sedative treatment reduces the respiratory changes as well as the glycosuria. This increased intensity of the respiratory interchanges explains why diabetics are peculiarly exposed to tuberculosis as it prepares the soil for the latter disease. If the respiratory changes remain high in a diabetic, even if the sugar has vanished from the urine, he is not cured and is always in danger of recurrence of the glycosuria. When the respiratory changes drop, especially when not accompanied by a corresponding drop in the sugar in the urine, coma is imminent and measures should be instituted to restore the respiratory functions nearer to normal. Hemorrhage has the effect of increasing the respiratory changes, showing that abstraction of a moderate amount of blood promotes general oxidation. Venesection is, therefore, indicated in affections with retarded nutrition from insufficiency of the nutritive processes, and also in autointoxications and in certain infectious diseases, like pneumonia, when the microbian poisons or those elaborated by the organism in its struggle against the infectious agent or poison, are causing serious damage. Withdrawal of blood accelerates the oxidations and thus aids in neutralizing these poisons, transforming them into soluble non-toxic products, easily eliminated. He has found that the respiratory changes are notably increased in 92 per cent. of all cases of tuberculosis, and during all stages of the disease. This increase in the respiratory changes is one of the manifestations of the "tuberculisable soil," as he calls it. The exaggerated aptitude to consume too much oxygen and to elaborate too much carbonic acid, that is, to consume itself, is the characteristic of the organism predisposed to consumption. The pretuberculous condition is one of exaggerated vitality, not, as generally supposed, one of depressed vitality. This view upsets all our preconceived notions in regard to prevention and treatment of tuberculosis. Instead of tonics we need measures to restrain the organism from burning itself up, and study of the respiratory interchanges reveals the measures suitable for this purpose and the exact doses that produce the finest results. The predisposed should be sorted out and treated the same as we vaccinate, by modifying the vital conditions of the soil. This respiratory syndrome is trasmitted to 60 per cent. of the descendants of tuberculous parents. In the rheumatic diathesis, the respiratory changes are diminished and the type is the reverse of that observed in tuberculosis. It is transmitted to 72 per cent. of the descendants as a rule. Oxygen supplied to the organism in excess does not materially modify the respiratory changes; they seem to depend more on the aptitude of the tissues to fix the oxygen than on the amount supplied.

36. **Pylorectomy for Cancer.**—Poncet has performed pylorectomy with more or less extensive excision of the stomach in 12 cases of cancer and 8 of the patients recovered. The cachexia or extension of the lesion or imperfect technic explain the fatalities. The remote conditions are eminently satisfactory in the patients cured, and justify his advocacy of immediate exploratory laparotomy on suspicion of cancer of the stomach, with more or less extensive gastrectomy as found necessary. Gastrectomy, he states, is not a serious operation when the lesion is in an early stage. The prospects were far from favorable in some of his cases.

37. **Connection Between Albuminuria and Diabetes.**—Lancereaux has observed albuminuria frequently in his cases of gouty, herpetic diabetes, while it was never noted in his 40 cases of pancreatic diabetes. The glycosuria alone does not entail albuminuria. When the latter occurs it may be connected with arteriosclerosis with consequent lesions of kidneys and heart, or it may be of epithelial origin due to some intercurrent affection, tuberculosis in particular. There is a third form, in which the albuminuria alternates with the glycosuria, and like the latter, is subordinate to some nervous disorder. He gives examples of each form, and adds that the physician should examine the condition of the kidneys and nervous system in such a patient, rather than determine the exact proportion of albumin. This will give him a clue both for treatment and for prognosis. There are three groups of circumstances in which this decision is of great value: When parents bring their sons to the consultant with the statement that their physician has told them that the lads are albuminuric and must be put on a milk diet, and that they must stop their college work. Study of the albuminuria and its accompaniments reveal that it is not due to a kidney lesion, and consequently that these precautions are unnecessary. Time shows that the lads develop spontaneously into good health and their albuminuria vanishes. In other cases life insurance is refused to men apparently in good health, under pretext of albuminuria. The kidneys are sound and the insurance company may be prevailed on to reconsider its objections.

Berliner klinische Wochenschrift.

39 (XLII, No. 29, July 17). *Ueber die baktericide eigenschaft des Typhusserums. J. v. Elischer und J. Kentzler.
40 Buttermilk Conserve.—Ueber Erfahrungen mit einer neuen Buttermilch-Konserve. W. Kassel.
41 *Pathogenese, Symptomatologie und Diagnose der Mündungs-Anomalien einfacher und überzähliger Ureteren beim Weibe. L. Thumin.
42 *Einige neuere diagnostische Forschungsergebnisse auf dem Gebiete der Lungentuberkulose (progress in diagnosis). De la Camp.
43 (No. 30.) *Affections Followed by Cancer.—Ueber Krankheiten, die dem Krebs vorangehen. E. v. Bergmann.
44 Die volare Luxation des Os lunatum carpi und ihre Behandlung. Hildebrandt.
45 *Zur Behandlung der freien puerperalen Peritonitis mit Laparotomie und Drainage. Kownatzki.
46 *Die Wirkung des Lecithins auf die Leukocyten. L. Detre and J. Sellei.
47 Aetiologie und spezifische Therapie des Heufiebers (hay fever). Dunbar.
48 *Laryngeal Tuberculosis as Indication for Artificial Delivery.—Ist die Kehlkopftuberkulose als eine Indikation zur künstlichen Unterbrechung der Schwangerschaft anzusehen? A. Kuttner.
49 *Ueber die Blutserumreaktion der Carcinomatösen. G. Kelling. Id. E. Fuld.
50 Cause and Treatment of Soft Chancre and its Consequences.—Ursache und Behandlung des weichen Schankers und seiner Folgen. E. Hoffmann.

39. **Bactericidal Properties of Typhoid Immune Serum.**—The various experiences reported elucidate some of the problems and antagonistic findings of others in the line of bacteriolysis, immunization, etc.

41. **Pathogenesis, Symptomatology and Diagnosis of Deformities in the Ureters in Women.**—Thumin's long article is based on the literature and on experience, especially on a case personally observed in which a supernumerary ureter presented a large cystic enlargement. The supernumerary ureter was located behind the peritoneum, and terminated in a cul-de-sac in the connective tissue. The symptoms of trouble in a ureter were puzzling, as both of the normal ureters could be seen functioning perfectly. Removal of the tumor restored condition to normal in every respect. The symptoms of ureter anomalies are generally disturbances in urination, especially incontinence while the bladder is continent. This occurs only when a persisting Gartner's duct opens into the roof of the vagina. The differentiation is extremely difficult when the ureter terminates in a blind sac. In the case described the nature of the cyst was revealed only by microscopic examination of the walls. The character of the superficial epithelium of the mucous membrane lining the cyst testified to its connection with the urinary apparatus.

42. **Recent Progress in Diagnosis of Tuberculosis.**—De la Camp discusses the value of the more recent diagnostic points in tuberculosis, saying that, on the whole, the old, classical

diagnostic measures are still superior to anything offered in recent years. His experience has been that bacilli can not be detected in even a third of all cases with expectoration. Abnormal auscultation findings are generally associated with abnormal percussion findings. Signs of irritation of the sympathetic, such as differences in the pupils, are important, as also suspicious Roentgen findings, especially in respect to tumefied glands in the mediastinum. About a third of all cases of localized apical tuberculosis present Williams' sign, that is, reduced movability of the affected half of the diaphragm. The anamnesis is of the greatest diagnostic importance, particularly a history of disturbances in the nervous system. The temperature may reveal its pathologic character only when examined directly after physical exercise.

43. **Affections That Precede Carcinoma.**—Bergmann calls attention to the frequency of certain affections in the preceding history of cancer subjects. Among them he cites severe congenital phimosis as a frequent antecedent of large carcinoma of the penis, also large scars resulting from burns. He has personally observed a striking case of this latter combination. A child of 4 fell into an open fire and was burned so that the resulting cicatricial contraction drew the skin of the axilla down to the hip. At the age of 40 a carcinoma developed on the cicatricial tissue, forming the largest cancer which he has ever had occasion to see. He has found a history of Paget's disease of the nipple in only 7 or 8 cases among his 1,000 operative cases of mammary cancer. The carcinoma develops directly from the eczematous alterations in this affection, as also in the acne of workers in paraffin. The latter exhibit usually multiple primary carcinomata. Psoriasis of the tongue and mouth may also be the precursor of a carcinoma. He does not credit a syphilitic etiology to this affection, as the lesion is not at all like those of the tertiary type of syphilis. In a case demonstrated he removed a carcinoma located in the middle of the patches and there has been no recurrence to date after two and a quarter years. He has also observed carcinoma developing on a lupus cicatrix and also from a fibroid lupus lesion. Lesser has reported cases of carcinoma in children of from 12 to 15 years which developed on the basis of xeroderma pigmentosum and was rapidly fatal. Bergmann denies the existence of primary carcinoma on the extremities without a preceding cutaneous lesion, scar, fistula opening, ulcer, eczema, wart or mole. A pigmented nevus leads more often to the production of a melanotic sarcoma than of a carcinoma. The smooth, small, multiple pigmented nevi contain nerve terminals from which minute fibromata are liable to develop, leading possibly to elephantiasis neuromatosa. The warty, dark-colored nevi are liable to be the seat of melanotic carcinoma, as in a case he reports. A small, dark-colored, hairy, raised nevus on the head showed little change for thirty-seven years after birth. Then the nevus began to grow, a bunch developed behind the ear and the enlarged glands of the region can be seen like a string of beads under the skin down to the back of the neck.

45. **Laparotomy and Drainage for Puerperal Peritonitis.**—Kownatzki states that 9 cases of non-encapsulated puerperal peritonitis have been treated at Bumm's clinic at Berlin. Two of the patients were moribund when seen, 2 others were operated on, but succumbed later. In one of the fatal cases pus had already found its way into the pleural cavity. In the other the affection proved to be a number of imperfectly encapsulated single abscesses which it would have been impossible to drain effectually and the development of which had evidently been favored by the opium previously given. It is possible that both these patients might have been saved if operated on sooner. All the other patients were cured by laparotomy and drainage with counter openings. He gives the details of these cases. In 2 there was septic infection; streptococci were numerous in the peritoneal exudate. He knows of no other instance on record of the cure of similar puerperal streptococcus, non-encapsulated peritonitis. The abscess contents were putrid in the 3 other cases. The peritonitis developed very slowly in all, the clinical picture not becoming complete until the seventh to the tenth day after delivery. The general health also was only very gradually impaired and the abdomen was only slightly sensitive to pressure. The difficulty of diagnosing the condition is so great in a woman convalescing from childbirth, that exploratory puncture is justifiable and urgent in dubious cases. The abdomen can be punctured with a small Pravaz needle without fear. Certainty was attained by this means alone in three of his cases. In another a small exploratory incision at the most suspicious point cleared up the diagnosis. A thorough operation is inadvisable, and the main idea is merely to secure the best possible conditions for rubber tube drainage. The incision was made in the inguinal region at the point where inflammatory processes originating in the uterus usually first reach the abdominal wall. The counter-incision was made at the lowest part of the lumbar region, where it merges into the back. There was no swabbing or rinsing, but the parts were thoroughly drained, secretions draining away for several days, as the symptoms subsided.

46. **A New Action of the Cell Nucleus-Phagokaryosis.**—Detre and Sellei found that it is possible to protect animals effectually against sublimate injections by mere subcutaneous injection of an aqueous or serous emulsion of lecithin. In ordinary phagocytosis the cell nucleus takes no part in the process, but with this emulsion of lecithin the nucleus incorporates the grains of the lecithin. It is evidently an active, independent process on the part of the nucleus which seems to have an affinity for the lecithin grains and to absorb them with avidity. They propose the term phagokaryosis for this action on the part of the cell nuclei.

48. **Laryngeal Tuberculosis and Pregnancy.**—Kuttner discusses the question as to interruption of a pregnancy in case of laryngeal tuberculosis. His conclusions are the result of ripe deliberation and council with lawyers as well as with physicians. He first reiterates the statement that diffuse laryngeal tuberculosis during pregnancy has an extremely unfavorable prognosis. The death rate of children whose mothers suffered from laryngeal tuberculosis during the pregnancy is exceptionally high. These facts theoretically justify artificial interruption of the pregnancy, but in practice the measure is permissible only when the conditions indicate that it is the only chance to save the life of the mother and offers some probability of success. Experiences to date have demonstrated that premature delivery in the last months of the pregnancy has little prospect of a favorable outcome. In this stage tracheotomy might still offer some chances.

49. **Blood Serum Reaction of Cancer Subjects.**—Kelling found in certain cases of carcinoma some special precipitins in the serum which displayed characteristic relations to a foreign albumin. He was unable to detect this reaction in case of other affections, and proclaims that its occurrence under reliable technic is a sure sign of some hidden carcinoma, but the absence of the reaction is no evidence that cancer does not exist somewhere. Fuld criticizes his assertions, and states that his control experiments were always negative and that Kelling's communication is not scientifically exact or complete.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

51 (XXXI, No. 30, July 27.) Die orthopädische Behandlung der Lahmungen (paralyses). A. Hoffa.
52 *Experimentelle Beiträge zur Frage der Desinfektion der Haut (of skin). K. Vogel.
53 *Ueber posttraumatische Psychosen. L. W. Weber.
54 *Ein Beheif für die Pneumatotherapie der Herzkrankheiten (air treatment of heart affections). M. Herz.
55 Ueber Radioaktivierung und ein neues Radiumpräparat (Radiophor). Axmann.
56 *Ueber den heutigen Stand der Schiffssanatorienfrage (floating sanatoria). H. Leyden.
57 (No. 31.) *Report on Epidemic Cerebrospinal Meningitis.—Berichte über die in der Hygienischen Station zu Beuthen O. S. vorgenommenen bakteriologischen Untersuchungen bei epidemischer Genickstarre. v. Lingelsheim.
58 Ueber den Paget-Krebs (cancer). H. Ribbert.
59 *Grooves, Clubfoot and Paralysis from Amniotic Constriction.—Ueber amniotische Furchen und Klumpfuss nebst Bemerkungen über Schädigungen peripherer Nerven durch intrauterin entstandene Schnurfurchen. Joachimsthal and Cassirer.
60 *Determination of Sensibility of Muscles and Joints.—Zur Methodik der Muskel- und Gelenksensibilitätsbestimmung. H. Curschmann.
61 *Bovine Tuberculin.—Ein neues immunisierendes Heilverfahren der Lungenschwindsucht mit Perlsuchttuberculin. C. Spengler (Davos).
62 *Zur Diagnose der Influenza und zur Pathogenese ihrer Symptome. A. Köppen.
63 *Ueber die allgemeine Enge des Aortasystems (general narrowing of aorta). F. Apelt.

52. **Disinfection of the Skin.**—Vogel has been using the apparatus for applying superheated air in his experiments in regard to disinfection of the hands. The impetus to the circulation and perspiration in the hot-air bath is a good means to test the depth of the action of the disinfectants. He held his disinfected hand in the hot-air box, and from the number of germs found on it afterward drew conclusions as to the more or less completeness of the preceding disinfection. The germs thus brought to the surface could easily be destroyed. He is convinced that the germs found after this exposure proceed less from the crevices in the skin than from the gland passages. If the surgeon's hand becomes soiled the best way to free it from germs is to hold it in the hot-air box, and thus sweat out all impurities from it. This method of disinfection might also be applied to parts of the body covered with hair, supplementing the physical, mechanical and chemical procedures by this physiologic enhancing of the natural activity of the skin. He suggests that stitch hole suppurations might be avoided by always taking the stitch from within outward, never from without inward, and by always taking a fresh needle for every stitch. His tests of various technics for disinfection showed that the Fürbringer hot water-alcohol-sublimate method is superior to Mikulicz' tincture of soap method in regard to the sterility of the hands, but the latter technic has so many advantages and the results are so good that he still clings to it in preference to the other.

53. **Post-traumatic Psychoses.**—Weber gives a number of examples from his own experience, remarking that there is no uniform clinical picture for the traumatic psychoses. A connection may be assumed between the accident and the psychosis when the character changes immediately or soon after the accident, becoming irritable or slightly depressed. Also when an organic brain affection, especially a fulminating paralysis, sets in soon after the trauma. In a functional psychosis an association with the trauma may be surmised when there is depression and anguish, associative and motor inhibitions or catatonic disturbances, in addition to the ordinary characteristic symptoms of the psychosis. To assume a connection with the trauma, the psychosis must have developed soon afterward and have been preceded by a prodromal period of altered psychic behavior.

54. **Breathing Therapy for Heart Affections.**—Herz believes that great benefit can be derived from endo-massage of the heart by expelling the air from the lungs in a series of jerks. This "staccato breathing," as Oertel called it, causes transient increase in the pressure in the thorax and thus acts indirectly on the heart from all around it, not from any one point alone. The participation of the abdominal muscles is superfluous, and for this and other reasons he has invented a little instrument which mechanically produces and controls the staccato expiration. The patient breathes into a tube connected with a wheel and ratchet below, which alternately open and close the outlet to the tube.

56. **Ship Sanatoria.**—Leyden outlines the desiderata for a floating sanatorium, and advocates sea voyages or a sea life in prevention and cure of scrofula, tuberculosis, etc. He advised eighteen lads from very consumptive families to enter the marine service, and only two out of the entire number have ever shown signs of tuberculosis, while their brothers and sisters, who preferred a sedentary life, have paid a very large contingent to the disease.

57. **Epidemic Cerebrospinal Meningitis.**—In this third installment of his official report Lingelsheim states that he succeeded in reproducing the clinical picture of epidemic meningitis in a monkey by instraspinal inoculation of human material.

59. **Injuries from Amniotic Constriction.**—Illustrations are given of two girls, each born with a groove around the arm or leg and paralysis or clubfoot. In one case the peripheral nerves had evidently suffered from the amniotic constriction of the arm just above the elbow, as the child exhibited radial paralysis and there was also partial ulnar paralysis. The cases throw light on the origin of certain cases of clubfoot and of paralysis of isolated peripheral nerves.

60. **Determination of Sensibility of Muscles and Joints.**—Curschmann describes his galvano-muscular technic with which he has been able to detect a reduction in the sensibility in incipient tabes when the findings by all other technics were negative. He determines the minimal "threshold value" of the sensibility, and then requests the patient to note whether a movement of the muscle accompanies the sting when the current is turned on. The patient is almost always able to differentiate the peculiar, brief sensation of movement in the muscles under electric stimulation, and the effect of the movement on the neighboring parts, and also to point out the course of the muscle involved. By this means it is easy to learn the strength of current necessary to induce the sensation of the contraction of the muscle. He gives tables of the findings on normal and diseased subjects and reviews the information to be derived from comparison of them.

61. **New Immunizing Means of Curing Tuberculosis: Bovine Tuberculin.**—Spengler's first announcement in regard to the value of immunization by means of bovine tuberculin was summarized in these columns on page 705 of vol. xliii. He here describes further experiences with his perlsucht tuberculin, its agglutinating properties, an attempt at autoinfection and a differential stain for the bovine tubercle bacillus. The serum of persons under treatment with persulcht tuberculin acquires remarkable agglutinating properties without a trace of a febrile reaction. The very first subcutaneous dose of perlsucht toxin induces agglutination five times as pronounced as with ordinary tuberculin, even when administered intravenously and in the largest dosage. The immunization obtained with the perlsucht tuberculin is a true, natural immunization, while that obtained with human tuberculin is a pseudo-immunization. His research and observation, he claims, have established beyond question the non-identity of human and bovine tubercle bacilli. The improved differentiating stain which he recommends is applied to a dry specimen, warmed, then stained with cold Ziehl's carbol fuchsin for one to five minutes without heating in the flame, but eventually in the incubator, without any acid treatment. The superfluous fuchsin is then rinsed off with 60 per cent. alcohol, after which a small drop of Loeffler methylene blue is added to the alcohol left, which is set on fire and the specimen moved to and fro until entirely covered with the stain. It is then rinsed, dried between blotting paper and then over a flame. The bovine bacilli stain bright arterial red and seem larger, thicker and longer than by any other technic, owing to the absence of any acid treatment. Human bacilli look thin, atrophic and are a bluish, venous red or violet tint. He states further that the bactericidal action of human and bovine tuberculin is different. An infection with living bovine bacilli runs a different course from that with living human bacilli. Spengler made a subcutaneous injection of 0.5 mg. of living perlsucht bacilli in his own arm. An abscess developed without glandular involvement or general disturbance. The ulcer persisted for eight months. The agglutinating properties acquired by his serum were no higher than after injection of killed perlsucht bacilli.

62. **Diagnosis of Influenza.**—Köppen has found constantly the albumin and diazo reactions in the urine as characteristic of influenza. The reaction is probably the result of the action of the toxins.

63. **General Narrowing of Aorta.**—Apelt found this condition as the cause of fatal heart affection in two young athletes. He thinks it was acquired by excessive physical exercise.

Münchener med. Wochenschrift, Munich.

64 (LII, No. 29.) *Ueber Spirochätenbefunde bei Syphilis. Rille.
65 *Die Spirochäten bei Syphilis. H. Ploeger.
66 *Neue Untersuchungen uber die Aetiologie der Syphilis. J. Siegel.
67 *Zum Nachweis der Azetessigsaure im Harn. L. Lindemann.
68 *Ueber Malakoplakie der Harnblase. E. Gierke.
69 *Die Behandlung der Prostatahypertrophie mit Röntgenstrahlen. L. Moszkowicz and R. Stegmann.
70 Zur Behandlung des Morbus Basedowii mit Antithyreoidin Möbius. A. Alexander.
71 *Congestive Hyperemia in Treatment of Acute Suppurations.—Zur Behandlung akuter Eiterungen mit Bier'scher Stauungshyperämie. Berlin.
72 Suggestions for Collective Cancer Research.—Wege der Sammelforschung über Krebs. K. Kolb.
73 (No. 30.) *Zur Aetiologie der Pneumonia crouposa. H. Schottmüller.
74 *Zur Pathologie des Bindegewebes (connective tissue). K. Vogel.

75 *Inflammatory Fatty Tumor in Knee or Foot.—Ueber entzündliche Fettgeschwulste am Knie und Fussgelenke. Gangele.
76 *Aspiration Treatment of Purulent Rhinitis.—Die Naseneiterung der Kinder und ihre Behandlung durch Saugen. R. Sondermann (Dieringhausen).
77 Head Support for Extension.—Der Extensionskopfträger. J. Hahn.
78 Weight-bearing Capacity of Floating Bodies as Test of Air in Them.—Ist die Tragfähigkeit "schwimmender" Körper ein sicherer qualitativer oder quantitativer Nachweis und Beweis für ihren Luftgehalt? F. Schroen.
79 "Waking Suggestion" Same as Hypnosis.—Ist Wachsuggestion erlaubt? O. Neustaetter.
80 Anesthesia and Operating Table.—Narkose-Wagen, zugleich Vorbereitungs- Verbands- und Operationstisch.

64. **Spirochetes in Syphilis.**—Rille's findings confirm those of others in regard to the almost constant presence of the *Spirochæte pallida* in fresh syphilitic lesions. He gives the particulars of 7 cases in which it was found, and cites the communications of others, and concludes that the sum total of the results certainly points strongly to the specificity of this germ in the etiology of syphilis. He recalls that Donné, discoverer of *Trichomonas vaginalis*, described in 1837 a microorganism in syphilis which he called vibriolineola. He found it in ulcerations on the vagina and penis, and once in a leg ulcer with hospital gangrene.

65. **Id.**—Ploeger states that 100 positive single researches are now on record with only a few negative findings, and more than 50 control researches on non-syphilitic subjects with invariably negative findings.

66. **Etiology of Syphilis.**—Siegel reports that he has succeeded in inoculating rabbits and guinea-pigs with syphilis from human material introduced into the tissues of the ear passages or into a scratch in the iris. He has thus inoculated 50 rabbits with syphilis. He has further inoculated 13 monkeys with the virus obtained from the infected rabbits, with positive results in every instance. The monkeys not only presented the primary, but in time also the secondary lesions of syphilis, as he shows by the illustrations of some of them. Siegel is the discoverer of the *Cytorrhyctes luis* flagellates in syphilitic lesions, for which he has been claiming causal etiologic importance. He found these germs in the lesions of all his animals, and is convinced that their causal connection with syphilis is beyond question as these findings parallel the clinical in every instance.

67. **Determination of Diacetic Acid in Urine.**—Lindemann asserts that the urine must be acid to obtain reliable results in testing for diacetic acid. He has simplified the Riegler test and recommends the following technic: The urine is rendered acid by adding 5 drops of 30 per cent. acetic acid to 10 c.c. of the urine, and then stirring into it 5 drops of Lugol's solution (1 part iodin and 2 parts potassium iodid in 100 parts water). The whole is well shaken and 2 c.c. of chloroform are then poured on top. The layer of chloroform does not change color in case of the presence of diacetic acid, while it turns red with normal urines. The reaction is more sensitive than the ferric chlorid test. When the Gerhardt test was still negative in a mixture of 0.5 c.c. of urine containing diacetic acid with 9.5 c.c. of normal urine, the new test gave the characteristic reaction. The test was always negative with normal urine even after administration of drugs, admixture with bile pigments, alcohol, glycerin, lactic acid and creatinin. The new reaction may be abolished by boiling the urine, and also by long contact with formalin.

68. **Malakoplakia of the Bladder.**—Gierke gives the particulars of 2 cases of this affection of the bladder. He ascribes its etiology to the primary action of a cystitic urine. After the primary lesion of the epithelium, the infiltrating urine degenerates, the cells swell and become impregnated with minerals, resulting in the appearance known as malakoplakia or cystitis in patches. Four out of the 9 cases on record were accompanied by tuberculosis.

69. **Roentgen Treatment of Hypertrophied Prostate.**—Moszkowicz has already reported 3 cases of enlarged prostate treated by application of the Roentgen rays through the rectum. He here continues his reports with 6 new cases. Unmistakable benefit was derived in every instance. The effect was most rapid and pronounced in the cases in which the anuria was of recent occurrence. The gratifying results and the harmlessness of the procedure commend it for extensive application, possibly supplemented by the action of radium in the urethra. In all the cases three sittings of from ten to eighteen minutes each had a pronounced influence on the enlarged organ and on the symptoms. The prostate subsided in size and micturition became more or less normal. In 3 of the cases the patients exhibited symptoms of arteriosclerosis, with indications of angina pectoris.

71. **Treatment of Acute Suppurations with Bier's Passive Hyperemia.**—Derlin relates the history of 2 cases of severe phlegmon of a tendon sheath and one of acute traumatic osteomyelitis of the humerus. All were treated according to Bier's directions by applying a tourniquet to the limb above until a "fiery red edema" had developed. The redder the parts the more violent the inflammation. The beneficial results were remarkable, he reports, and the lesions healed with trifling loss of tissue.

73. **Etiology of Croupous Pneumonia.**—Schottmüller describes a *Streptococcus mucosus* which he found constantly and in pure cultures in his total of 6 cases of croupous pneumonia.

74. **Pathology of the Connective Tissue.**—Vogel tabulates 124 cases of flatfoot, scoliosis, varices, hernias, hemorrhoids, pendulous abdomen, prolapse of uterus, rectus or intestines and emphysema, genu valgum and coxa vara. His tables show that several of these various affections are liable to befall the same individual. His argument is to the effect that they are all manifestations of some congenital anomaly in the connective tissue system. The entire stratum fibrosum is more or less abnormal in such persons, and the physician should examine them for other manifestations of this anomaly when he observes any one of the above affections. Some of the patients cited had six, but three or four was the average.

75. **Inflammatory Lipoma in Knee or Foot.**—Gangele has had occasion to observe several cases of the fat tissue tumors to which Hoffa recently called attention as a frequent consequence of slight trauma or inflammation. They are liable to occur in any joint and to cause severe disturbances. Gangele describes the cases of four patients promptly cured by surgical intervention.

76. **Aspiration Treatment of Purulent Rhinitis.**—Sondermann reiterates his former assertions in regard to the great value of aspiration as a means of treating purulent rhinitis. He has devised an apparatus for the purpose, and he says that it is amazing to see the quantities of purulent secretions which the aspiration removes. In many cases it is evident that some of the secretion must come from the accessory cavities. He has found that the aspiration treatment is equally effective for adults and for children, and that the latter readily learn to use the aspirator themselves. He advises its use four or five times a day in severe cases, and morning and night in the mild ones.

Therapie der Gegenwart, Berlin.

Last indexed page 953.

81 (XLVI, No. 7.) *Niels R. Finsens Krankheit (illness). A. Flöystrup and V. Scheel.
82 Ein neuer Detorsions-Tisch zur Behandlung der Skoliose (orthopedic table). G. Müller (Berlin).
83 *Indikationen und Kontraindikationen der Vaporisation des Uterus. K. Baisch. (Döderlein's clinic, Tübingen).
84 (No. 8.) *Zur Kasuistik der Hirn-Punktion (of brain). W. Weintraud.
85 *Febrile Enlargement of Liver in Syphilis.—Zur Frage der fieberhaften luetischen Leberschwellung. H. W. Reye.
86 *Attritin und Fibrolysin. F. Mendel.
87 Zur ambulanten Behandlung der Unterschenkelgeschwüre (leg ulcers). O. Moos.
88 *Gebrauch von Hals-Pastillen (throat pastilles). W. Zenuer.
89 *Ueber congenitale Pylorus-Stenose. E. Leow.

81. **Finsen's Disease.**—During the entire time of his principal life work Finsen suffered from severe chronic hyperplastic peritonitis with exudation. He studied to keep the ascites under control and took copious notes of the course and details of the disease, which are here reproduced in detail: Born on the Faroe Islands, near Iceland, at 2 years he had meningitis; at 13 pneumonia; at 16 jaundice; at 20 nephritis, and at 21 measles. From childhood he always had a slight blue and cold look, as if half frozen. At 23 the first digestive disturbances appeared, ascribed at first to gastric catarrh, but later

diagnosed as chronic peritonitis. The symptoms and autopsy findings were those of the affection known variously as "iced liver," "pericarditic pseudo-cirrhosis of the liver" or "chronic hyperplastic peritonitis with exudation." The ascites is the chief clinical manifestation, and the chronic peritonitis the predominant pathologic anatomic finding. In a case reported by Rumpf the patient was tapped 301 times, but Finsen required puncture only 18 times, as he kept the ascites under good control. The "iced" aspect involved not only the peritoneum and liver, but also the spleen, and there were evidences of a very old, adhesive calcified pericarditis. He experimented with "dry diet" as a means to reduce the ascites, and found that two or three days after reducing the intake of fluids to 325 or 400 gm. the diuresis increased remarkably and greatly reduced the ascites. Later the diuresis was not so easily influenced as at first and the restriction of fluids had to be still stricter to accomplish the same result. To enhance the diuretic action of the "dry diet" he took purgatives, finding that 7 gm. of calcined magnesia in 100 gm. oatmeal porridge eliminated from 700 to 800 gm. fluid by the intestines while the kidneys excreted about the same amount. Distaste for the magnesia led to substitution of ammonium chlorid or sodium sulphate later. The drug always had to be used in connection with restriction of intake of fluids or the diuresis was insignificant. By these means Finsen was able to keep the ascites under control for several years. He was convinced that he would have been incapacitated for work many times in the course of those years if he had trusted to punctures and ordinary treatment. In 1900 he began to study the influence of salt on his condition, and continued for months his careful research on the metabolism of salt in comparison with other physical findings. His tabulated data are a valuable contribution to the literature on the subject. He found that the largest proportion of salt was eliminated when he was on a salt-free diet. Also that ingestion of a considerable amount of salt seemed to have a depressing influence on his capacity for eliminating it. The high specific gravity of the ascitic fluid and large proportion of albumin indicated that his ascites was an inflammatory exudate and not a mere effusion. There was no compression of the portal vein and no indications of tuberculosis.

83. **Steam Cauterization of Uterus.**—Baisch reviews the present status of vaporization of the uterus, the method of treatment introduced by Sneguireff some years ago and advocated especially by Pinkus. His conclusions are that the method is unreliable, the action sometimes being too profound and again too slight, the thickness of the mucosa being a variable quantity. The success of the procedure depends on chance. The only indication which he accepts for vaporization is the preclimacteric uncomplicated hemorrhage in chronic metroendometritis. In this condition it may answer the same purpose as the otherwise necessary hysterectomy, and hence may be regarded as a valuable measure in these circumstances. It should never be attempted, however, until after a malignant process has been certainly excluded. Zestocausis is a modified form of vaporization; the steam is kept enclosed in a metal catheter and produces a kind of weak thermocauterization. The literature cited embraces 57 articles.

84. **Puncture of the Brain.**—Weintraud reports 4 cases in which he bored through the skull with an electric drill and punctured through the opening thus made. In the first case a woman of 53 had presented indications of sensory aphasia and facial paralysis. She became comatose, and the skull was drilled and punctured at the aphasia center and fluid was aspirated. The lesion proved to be a large tumor at this point. If it had been an abscess the puncture would have had a direct therapeutic effect. In the second case a young woman had attacks of vomiting, finally accompanied by headache and choked disc. The right lateral ventricle was punctured three times and the headache was always relieved at once. The retarded pulse returned to its former state in a day or so, but the choked disc did not retrogress. The pressure in the brain did not seem to be very high in this case, but the relief from puncture was remarkable. The findings suggest that the brain substance must be already injured by the compression when signs of compression of the brain become apparent. In another case puncture of the lateral ventricle for symptoms of a brain tumor failed to relieve. Not a drop of fluid could be aspirated and nothing was found postmortem to explain the symptoms. Weintraud thinks that the affection responsible for the symptoms must have been a swelling of the brain, and that negative puncture in such a case should be accepted as an important aid in the diagnosis of this condition. He urges more general adoption of exploratory drilling and puncture, confident that in many cases it may bring relief and even cure. The latter might readily occur in case of a solitary tubercle already in retrogression but becoming dangerous by the accompanying internal hydrocephalus.

85. **Febrile Affection of Liver in a Syphilitic.**—The possibility of an isolated febrile syphilitic enlargement of the liver has been discussed considerably in the last few months. Reye here describes a case in which the symptoms suggested abscess formation in the liver in a syphilitic, but they all vanished under specific mixed treatment. The patient had been infected with syphilis eight or nine years previously.

86. **Intravenous Medication.**—Mendel is convinced that the intravenous route is free from danger for the patient and that with correct technic and appropriate drugs, it is destined to prove an important factor in the renaissance of pharmacodynamic therapy. His experience with the salicylates and thiosinamin administered intravenously has been extremely favorable.

88. **Disinfection of the Tonsils.**—Zeuner recommends pastilles made of guaiac flavored with some aromatic substance, to be used as a disinfectant and in treatment of the tonsils. Whenever there are any indications of sore throat one of these pastilles slowly dissolved in the mouth will be found very useful to avert further trouble and to cure the pathologic tendency of the tonsils.

89. **Congenital Stenosis of the Pylorus.**—Loew relates a case of this condition in which remarkable improvement followed the administration of a tablespoonful of an alkaline mineral water after eating. This evidently neutralized the hyperacid secretions and thus abolished the condition causing the reflex stenosis.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Manual of Organic Materia Medica and Pharmacognosy. An Introduction to the Study of the Vegetable Kingdom and the Vegetable and Animal Drugs, Comprising the Botanical and Physical Characteristics, Source, Constituents, Pharmacopeial Preparations, Insects Injurious to Drugs and Pharmacal Botany. By L. E. Sayre, B. S., Ph.M. Third Edition, Revised, with Histology and Microtechnic by W. C. Stevens. Cloth. Pp. 692. Price, $5.00 net. Philadelphia: P. Blakiston's Son & Co., 1905.

Department of the Interior Bureau of Government Laboratories. I. Birds from the Islands of Romblon, Sibuyan, and Cresta De Gallo. II. Further Notes on Birds from Ticao, Cuyo, Cullon, Calayan, Lubang and Luzon. By R. C. McGregor. Paper. Pp. 34, with 10 Illustrations. Manila: Bureau of Public Printing, 1905.

Department of the Interior Bureau of Government Laboratories. I. Description of New Buildings, by P. C. Freer, M.D., Ph.D. II. Catalogue of the Library, M. Polk, No. 22. Paper. Pp. 319, with 27 Illustrations. Manila: Bureau of Public Printing, 1905.

Exercises in Practical Physiology. By A. D. Waller, M.D., F.R.S. Part II. Exercises and Demonstrations in Chemical and Physical Physiology. By A. D. Waller and W. L. Symes. Paper. Pp. 79. Price, 90c. New York: Longmans, Green & Co., 1905.

Third Annual Report of the Superintendent of the Bureau Government Laboratories, for the Period from September 1, 1903 to August 31, 1904. Paper. Pp. 105. Manila: Bureau of Public Printing, 1905.

Proceedings of the American Medico-Psychological Association. At the Sixtieth Annual Meeting held in St. Louis, Mo., May 30-June 3, 1904. Cloth. Pp. 470. Pub. by the Association, 1904.

Diseases of the Anus and Rectum. By D. H. Goodsall, F.R.C.S. and W. E. Miles, F.R.C.S. Part II. Cloth. Pp. 271. Price, $2.00. New York: Longmans, Green & Co., 1905.

Annual Report of the Essex County Hospitals for the Insane. For the Year Ending April 30, 1905. Paper. Pp. 67. New Jersey: Groebe-McGovern Co., 1905.

Proceedings of the Pathological Society of Philadelphia. New Series, Vol. viii, No. 3 1905. Paper. Published by the Society, 1905.

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Original Articles

CYLINDROMA OF THE ORBIT AND LIDS, WITH REPORT OF CASES.*

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NEW YORK.

The neoplasm to which the term cylindroma has been applied is characterized by the formation of hyaline cylinders, tubules, and lobulated masses, as a result of a degenerative process, the hyaline tissue composing a relatively large portion of the tumor. The term cylindroma was first employed by Billroth.[1] Henle termed this form of neoplasm syphonoma; Meckel, tubular enchondroma; Friederich, tubular sarcoma; Foester and Köster, mucous cancroid; O. Becker, adenoid der Thrauendruse; other synonyms are mixed tumors, angioma, myxo-adenoma carcinomatosum (Knapp), endosarcoma myxomatodes, carcinomatous cylindroma, endothelioma.

Ziegler,[2] writing of this growth, states that "either the cells form hyaline products or they themselves become converted into such or the fully developed connective tissue and the blood vessels undergo degeneration."

Hektoen and Riesman write as follows: "The stroma of some endotheliomas is subject to metamorphoses of various kinds. In a variety, usually originating from the endothelium of the blood vessels, a hyalin transformation of the vessel walls and of the stroma produces the growth called sarcomatous cylindroma.

According to Arndt,[3] not only do the cells of the adventitia, but also the cells of the interna take part in the hyaline degeneration of the blood vessels in these growths.

Virchow writes, "If a tumor springs from the cells of the blood vessels or lymph channels it is termed endothelioma."

The growths to which the term cylindroma has been applied occur most frequently in connection with the salivary gland.[4] They also form a large proportion of the tumors that are connected with the lachrymal gland. The hyaline changes may occur in rodent ulcer of the eyelid, and, according to Ziegler,[2] in simple sarcoma, endothelioma, and hemangiosarcoma.

The cases that have occurred in my practice are as follows:

Case 1.—Mary B., aged 32, married, mother of two healthy children, came to the New York Eye and Ear Infirmary Feb. 11, 1905. Ten or eleven months previously she noticed that there was something wrong with the left eye, but paid no particular attention to it until two and a half months ago when it began to be more prominent than the right eye. The protrusion of the left eye has gradually increased to the present time. There has never been any pain of moment, but there were occasional pricking sensations.

Status Præsens.—Patient well nourished; apparently in good health aside from the condition of the left eye. Left eye displaced downward, outward and forward (Fig. 1); so much so that forcible attempts to close the eye result in covering only about three-quarters of the cornea. Movements of globe limited in all directions, particularly above. Ocular and palpebral conjunctiva injected; lids slightly swollen. Iris reacts almost normally to the usual stimuli. Fundus slightly pale. Optic disc paler than its fellow. Arteries small. Veins dark, but not enlarged. Upper temporal vein tortuous. Vision 14/200. Field of vision normal in extent. On palpation a firm mass was felt which extended from the outer to within a few millimeters of the inner upper angle of the orbit, close to the margin of the orbit and apparently extending backward into the orbit. The anterior margin of the mass was about 1 cm. thick. There was no involvement of the frontal sinus or nasal cavity. The right eye was normal.

Operation.—Ether anesthesia. Incision along the supraorbital margin through the tissues to the periosteum. The orbital septum was exposed and divided close to the margin of the orbit. When this was done the margin of the tumor, dark purple in color, came into view. By blunt dissection the tumor, which possessed an irregular surface, was separated from the orbital tissue and from the orbital plate of the frontal bone. It was found that the levator palpebræ superioris muscle was involved in the tumor mass and that part of it had to be removed with the tumor. The lachrymal gland was also involved and was removed. The supraorbital branch of the fifth nerve was loosely connected with the thin capsule which enclosed the tumor and a portion of it was removed. In freeing the tumor, a projecting portion on its lower surface was broken through, but was recognized and dissected out so that the entire mass was removed. The hemorrhage was inconsiderable. The under surface of the orbital plate of the frontal bone was eroded, but there was apparently no communication with the cranial cavity or with the frontal sinus. The tumor extended two-thirds of the distance from the margin to the apex of the orbit. The cavity which lodged the tumor was thoroughly cleansed, shreds of tissue were removed, the orbital plate curetted and the wound closed. The margins of the orbital septum were united with catgut sutures, the integument with silk, and a dry dressing was applied. Kroelin's operation was not resorted to, as it was not found necessary.

Size of Tumor.—The antero-posterior diameter of the tumor was 1½ inches (33 mm.); transverse diameter, 1 5/16 inches (34 mm.); vertical diameter, 1 2/16 inches (30 mm.). Its superior surface was nearly quadrilateral; lateral and under surfaces very irregular.

Subsequent History.—Some traumatic swelling of the tissue of the lid and surrounding parts followed and lasted for a few days, but eventually entirely subsided. The eyeball gradually assumed its normal position. At the end of two weeks motility had returned and was only slightly limited above and below. Vision became 20/200 +. There was no diplopia. The fundus presented much the same appearance that obtained before the operation, except that the bloodcurrent in the veins became normal in color. The tortuosity disappeared.

About the middle of April the patient again appeared at the clinic, presenting a recurrence of the growth. As my term of service does not include the months from April to October, the patient passed into the hands of Dr. W. B. Marple, who performed exenteration of the orbit. The recurrence had apparently taken place from that portion of the orbital plate of the frontal bone which had become eroded by contact with the primary growth. The mass filled the upper part of the orbit, extending backward to the apex, but had not involved the globe. The growth was rather soft and friable. Healing progressed favorably. It is as yet too early to determine whether a second recurrence will take place.

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*Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Unters über d. Entw. d. Blutgefasse, etc., 1856.

[2] General Pathology, William Wood, 1903, p. 431.

[3] Virchow's Archiv, vol. 49, p. 367.

[4] See Wood's comprehensive article, Annals of Surgery, 1904, p. 57.

Histologic Examination.—Primary growth: The mass is completely enveloped in a capsule which is fairly thick anteriorly and thin in other parts. The portion that was next to the orbital plate of the frontal bone was roughened, it included the periosteum. Remnants of the lachrymal gland somewhat indefinitely separated from the tumor proper by an imperfect capsule were found in the upper outer part of the mass. The tumor proper consists of a dense stroma which composes the greater part of the growth and collections of cells arranged in masses and in the form of tubules, which might be called the parenchyma. The stroma, which is densest at the periphery, is composed of rather large bundles of connective tissue fibers, presenting a few fixed cells on and in the bundles. Clefts between the bundles are as a rule small and contain a few young connective-tissue and apparent endothelial cells; that is, cells that may have been derived from the endothelium lymph-spaces. Many of the bundles of connective tissue have undergone hyaline degeneration. While the greater number took eosin well. many were stained faintly with eosin and also faintly with hematoxylin, probably indicating the presence of mucin.

Blood Vessels.—The blood vessels are not large, nor are they very numerous. All appear in the stroma of the tumor, none in the parenchyma. The vessels in the capsule have well-defined walls; those in the body of the tumor mass are without walls or are limited by a single layer of endothelial cells. The walls of the smaller vessels in many places are enormously thickened and have undergone hyaline degeneration, the lumen of the vessel being greatly reduced, the endothelial cells crowded together, and a thin column of blood occupying the axis of the canal. In a number of places there is a marked increase in the endothelial cells of the vessels, the transition of the endothelium of the vessels into cellular tubules being evident.

Lymph Channels.—The lymph spaces appear to be almost filled with cells having elongated, flattened nuclei. The walls are composed of broad hyaline bands which anastomose or coalesce These bands are not perfectly homogeneous, but many of them are nearly so. Nearly all show striæ, indicating a fibrillar origin.

Cells of the Stroma.—Small round cells, mononuclear and multinuclear, new-formed connective-tissue cells in different stages of development. endothelial cells, usually in small groups.

Connective Tissue.—Arranged in large bundles and massed together, particularly at the periphery. Nearer the center and where the cells of the parenchyma are not plentiful, the connective tissue is less dense and forms trabeculæ. In the recurrent growth the parenchyma predominates over the stroma.

Elastic Connective Tissue.—Sections of the primary and of the secondary tumors stained with Weigert's elastic-tissue stain show numerous elastic-tissue fibers intermingled with the non-elastic-tissue fibers, proportionally more plentiful in the connective tissue septa, which go to form irregular alveoli in which the cells of the parenchyma are lodged.

Recognizable Tissue of the Lachrymal Gland.—Occupying the upper outer portion of the tumor is a small, thin plaque of tissue which contains the remnant of the lachrymal gland. This consists of a number of acini, more or less distorted and separated one from the other by a stroma rich in new-formed cells. The acini are irregular in shape, the cells of the acini arranged in a single layer, often with large lumina the protoplasm of the cells seemingly small in amount, the cells cuboid in shape; frequently with small lumina, the cells apparently being more columnar in shape or more closely crowded together. In some parts the acini were much distorted, the lumina being long and narrow instead of circular, as in the normal acinus. Wherever an aggregation of cells suggesting acini was found, lumina were present, apparently limited by a fenestrated membrane as described by Verhoeff.[5] The acini and the cells of the character forming acini appeared to be separated from the main growth by a more or less definite connective tissue wall of some thickness, a condition that has been pointed out by Veasey[6] and others.

Parenchyma.—The cells which form the parenchyma of the tumor proper are large, slightly oval or cuboidal, seldom columnar. They are arranged in irregular masses, often in tubular masses, with a fairly sharply-defined limit. The cells fill the entire space between the walls of the stroma, no lumina being present. The masses of cells contain some leucocytes. Not infrequently a degenerated area marked by faintly-staining fragments of cells, granular substance and irregular hyaline masses is seen. Many of the cells composing the masses just described closely resemble the cells which are found in ordinary endotheliomata. Many might be modified epithelial cells so far as their morphology is concerned. There is apparently no positive evidence regarding the true origin of these cells. The spiral fibers of Herxheimer,[7] which he regards as peculiar to stratified, tesselated epithelium, could not be demonstrated. A limiting fenestrated membrane indicating glandular lumina was absent.

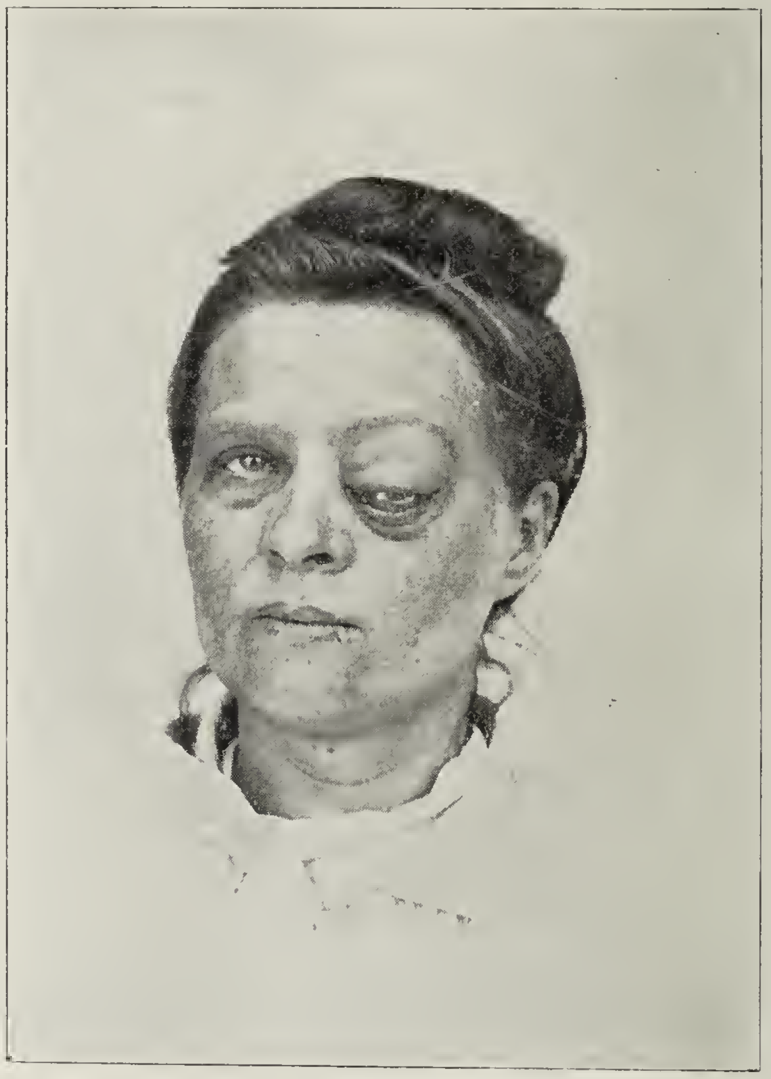

Fig. 1.—Cylindroma of the orbit.

The recurrent tumor resembles the primary tumor except that the cells of the parenchyma are much more numerous, forming the bulk of the mass, and that the hyaline degeneration was not so conspicuous.

Case 2.—Mr. S., aged 46 years, came to the New York Eye and Ear Infirmary in May, 1891, suffering from an ulcer of the right lower lid, situated 3 mm. below the margin of the lid and measuring 5 mm. in its vertical and 8 mm. in its horizontal axis. The margins were slightly raised, thickened, and irregular. The ulcer was shallow, the floor being covered by a grayish secretion and crusts. The ulcer had commenced some years ago as a small elevation with a scaly apex. There was very little irritation. After a time the roughened, thickened epithelium gave place to a small ulcer and a scab. The ulcer slowly increased in size in spite of treatment.

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[5] Jour. of Med. Research, vol. xiii, No. 3, p. 324.
[6] Medicine, November, 1902, p. 881.
[7] Monatschr. f. prakt. Dermatol., xl, p. 89.

Operation.—A diagnosis of epithelioma was made and the growth was excised. The recovery was rapid. The patient was discharged and was lost sight of.

Microscopic Examination.—The growth consisted of epithelial digitations which dipped into the tissue from the surface and margin of the ulcer. The periphery of the growth was composed largely of hyaline bands or tubules which had apparently developed because of changes in the endothelium and adventitia of small blood vessels and of lymph channels. The tissues resembled closely the hyaline tissue that was present in the growth in the case first described.

GENERAL NATURE OF THE ORBITAL GROWTHS WITH HYALINE DEGENERATION.

Aside from the characteristics just described, tumors of the orbit of this nature sometimes develop myxomatous tissue, cartilage and true bone. These are products of mesoblastic tissue and stamp the growth certainly, so far as the stroma is concerned, as mesoblastic in origin. If the cells of the parenchyma are of endothelial origin, the term endothelioma to designate this feature followed by the term cylindroma to denote the peculiar hyaline structure, would be appropriate. The lachrymal gland does not always accompany the growth that results in the formation of cylindromatous tissue; however, I have been unable to find any reports of a case from which epithelial tissue could be entirely eliminated. It is possible, as held by some observers, that the parenchyma of these growths is largely of epithelial origin. The morphology of many of the cells does not contraindicate this supposition. Ziegler writes, "I have classified as endothelioma those tumors . . . which are characterized by the formation of cell cords in the lymph channels on the assumption that these cords of cells arise from endothelium of the lymph spaces and lymph vessels. I must admit, however, that I do not consider this assumption as absolutely proved."

Taking into consideraton the fact that these tumors contain hyperplastic tissue which develops largely from mesoblastic tissue, but that epiblastic tissue is always present and may preponderate, it is evident that the tumors are "mixed tumors." However, since the peculiar hyaline change that takes place in mesoblastic formations in these growths is often so striking a feature, I believe with Verhoeff that the term cylindroma should be retained.

MALIGNANCY.

In regard to recurrences after the removal of tumors of this character from the orbit I am convinced that the reports of cases are misleading in this respect, as they are often made too early to determine whether a recurrence will or will not take place.

Of 56 cases cited by Lagrange[8] recurrences were mentioned in 11. Of 26 other cases, the reports of which I have reviewed, recurrence took place in 8.

In a case observed by Ewetsky[9] metastasis took place in the liver, resulting in the death of the patient.

The reports of these cases lead one to conclude that they are not so malignant as ordinary sarcoma and carcinoma, but they require most thorough removal. If osseous structures are involved, they should also be removed. Metastases occur very rarely. Tumors of the kind described have been observed in individuals from the age of 17 to 72 years. A number have developed after traumatism.

Association of lachrymal and parotid neoplasms has been noted by de Wecker and Masselon[10] and others.

DISCUSSION.

Dr. C. R. Holmes, Cincinnati, reported the case of a patient with the history of painless displacement of the left eye, vision normal. At the upper inner canthus one could feel a mass, hard, yet somewhat elastic. On making an inverted T-shaped incision at the upper inner angle of the orbit, Dr. Holmes found that the mass was not a distinct tumor, but that the partially broken down os planum had been pushed into the orbit. Opening it, he found several small nodular masses extending into the ethmoid cells. He removed everything back to the sphenoid and up to the cribriform plate, and did not sew the wound up entirely, but left space for drainage. The wound gradually contracted and finally closed entirely. Two pathologists who examined specimens could not give a positive diagnosis. Dr. Weeks pronounced it an endothelio cylindroma. To make sure that syphilis played no part in the case and before Dr. Weeks' assurance of the diagnosis was received, the patient had been given a thorough course of antisyphilitic treatment, which, however, made no impression on the local conditions. Dr. Holmes said that the history of the case warranted him in eliminating this factor. Two weeks ago patient was well, but with slight displacement of globe. Vision and ophthalmoscopic examination were then negative.

Dr. E. V. L. Brown, Chicago, referred to the paper read in the Section on Pathology and Physiology by Dr. Zeit, who laid especial emphasis on the tendency to hyaline and mucoid degeneration and the frequent recurrence, but infrequent metastasis. He looked on these tumors as sarcomata of slow growth, as exemplified in Dr. Weeks' case.

Dr. John E. Weeks said that he thought that these tumors constitute the majority of the tumors of the orbit that originate in the lachrymal gland. Such tumors are not numerous, but they form a relatively large percentage of the tumors of the orbit: consequently their study is of great importance.

DIFFERENTIAL DIAGNOSIS OF INTRAORBITAL TUMORS.*

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Professor of Ophthalmology, U. M. C.
KANSAS CITY, MO.

That the subject of differential diagnosis of intraorbital tumors is worthy of consideration is emphasized by the egregious mistake made recently by some of the members of the Association in the case here reported. My object is not to criticise those who saw, examined and made their diagnoses, but rather to emphasize the liability even of eminent oculists to err in their diagnoses of growths of the orbit and consequently to advise treatment which if carried out would be damaging to the patient as well as to the oculist.

Before proceeding to administer treatment for intraorbital tumors, we should arrive, if possible, at a correct diagnosis, as there are several kinds of growths which invade the orbit, and not all are amenable to the same treatment. Among the several kinds of growths of the orbit there exist both benign and malignant. There are bony, fleshy, bloody, nervous, fatty and serous tumors. Among the benign are the lipomatous, fibrous, cystic and osseous. Among the malignant, are carcinoma, sarcoma, epithelioma, glioma, and polypi. The benign may have their origin within or without the orbital walls, but most of them grow from the periosteum of the orbit, or from within the cone of the recti muscles. On the other hand, nearly all, if not all, malignant tumors of the orbit originate from within the eyeball, or from some one of the neighboring sinuses opening into the orbit. Some come from the brain Carcinoma, sarcoma and glioma, as a rule, start from within the eyeball. The fluid or semifluid tumors arise as a rule from the frontal sinuses or from the ethmoid

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[8] Tumeurs de l'Oeil, vol. xi.

[9] Virchow's Archiv, vol. lxix, p. 36.

[10] Soc. d'Ophthalmologie de Paris, Dec. 1, 1901.

*Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

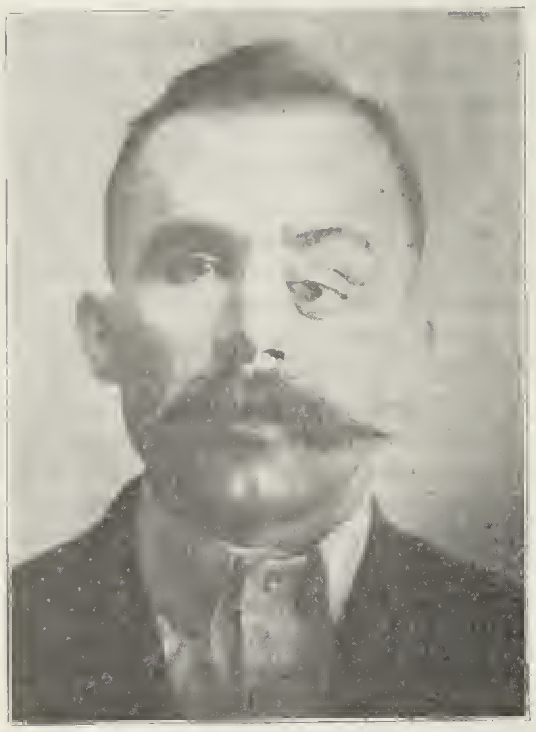
Fig. 1.—Patient two days before extirpation of tumor.

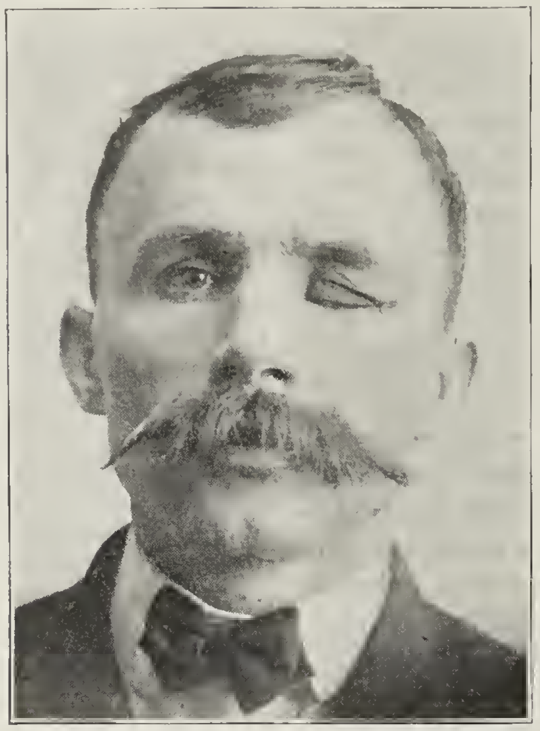
Fig. 6.—Patient ten days after extirpation of tumor.

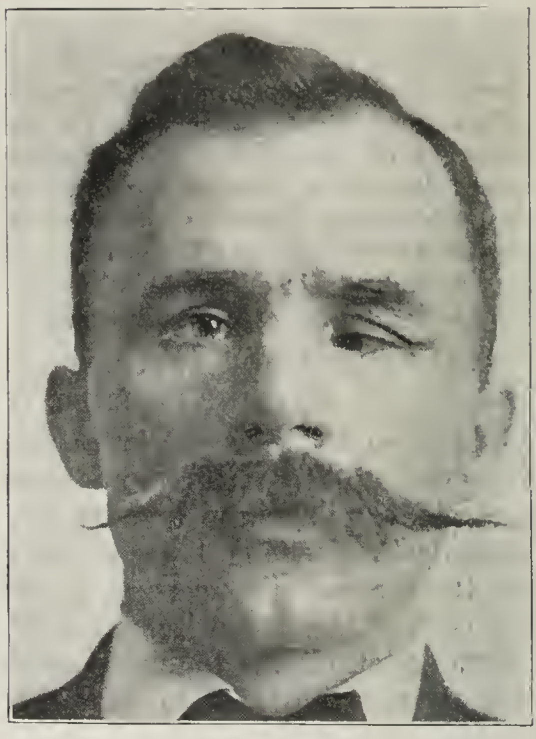
Fig. 8.—Patient two weeks after extirpation of tumor.

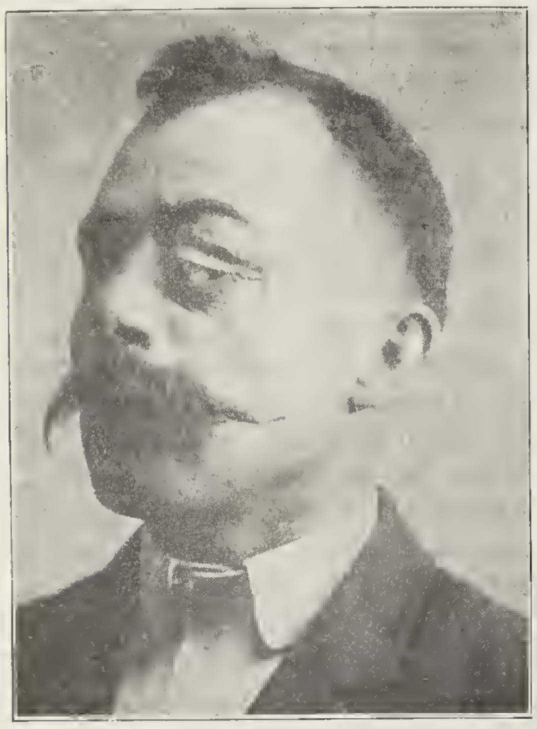
Fig. 2.—Another view of patient, two days before extirpation of tumor.

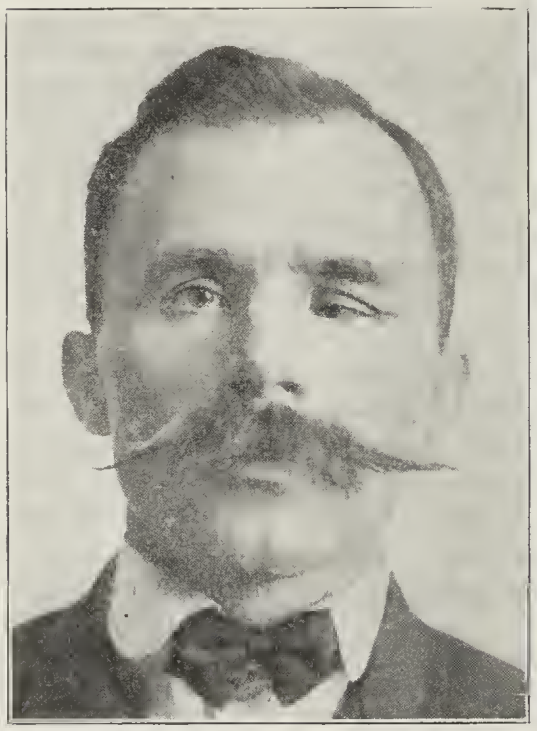
Fig. 7.—Patient four days after extirpation of tumor.

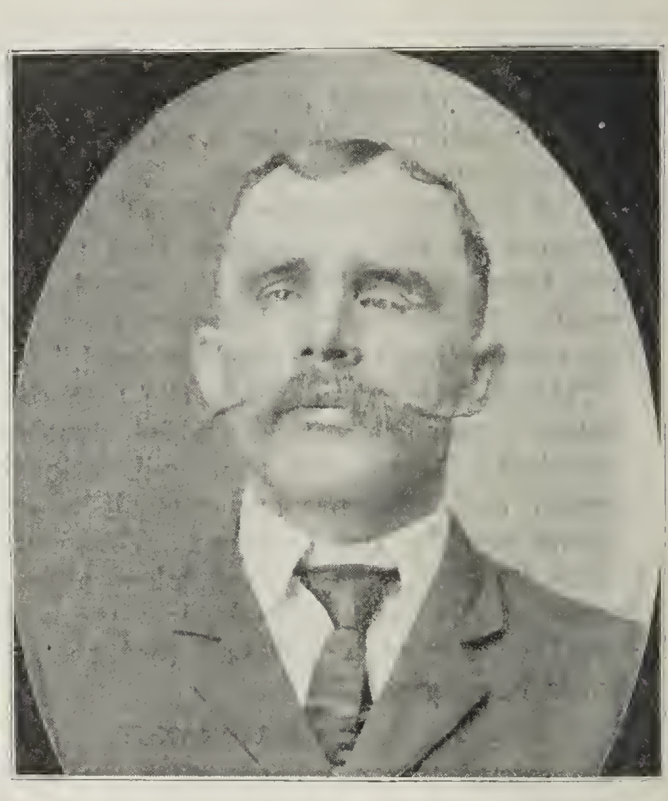
Fig. 9.—Patient six months after removal of the tumor.

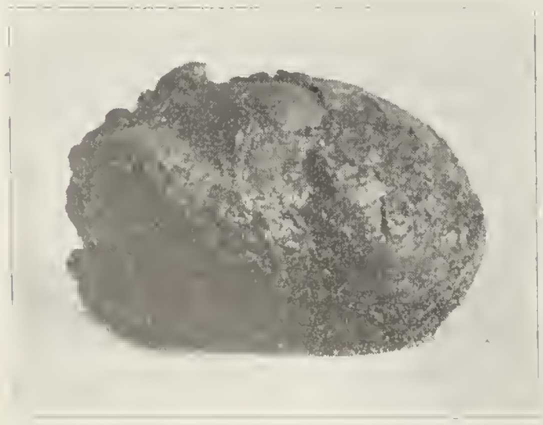
Fig. 3.—Anterior view of tumor.

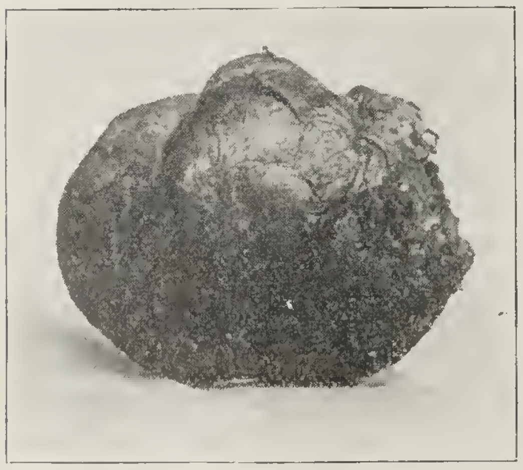
Fig. 4.—Posterior view of tumor.

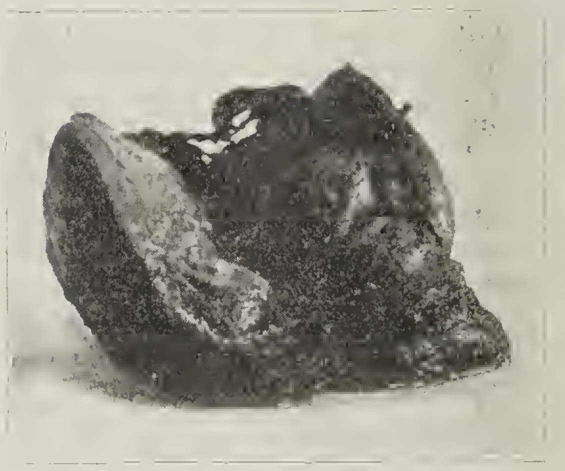
Fig. 5.—View of tumor incised.

cells and contain pus or nuclei. The solid or gelatinous arise from the maxillary, sphenoid or ethmoid. From these latter almost invariably there is scotomata and occasionally there is complete blindness from optic neuritis or atrophy of the optic nerve. Epithelioma comes from the lachrymal duct or canal; polypoids, from the antrum of Highmore; cystic tumors from the frontal sinuses. Osseous tumors more frequently arise from the periosteum of the supraorbital plate, occasionally they spring from the inferior wall. Vascular tumors, such as angiomas, nevi and some of the aneurisms as a rule, come from the intracranial cavity. Most orbital aneurisms arise from the orbital branch of the ophthalmic artery where the latter leaves the internal carotid.

DIFFERENTIAL DIAGNOSIS OF ORBITAL TUMORS.

Of course this can not always be done, as has been demonstrated in the following case, but, as a rule, with a definite knowledge of the symptoms of these various growths and a careful examination, one can be pretty certain of the real nature of the growth. Malignant tumors run a rapid course and sooner or later produce pain, ranging from a slight ache to a most agonizing distress, and if they are allowed to run their course they destroy vision and attain enormous dimensions, pushing the eye out of the socket and extending far beyond the limits of the orbital cavity.

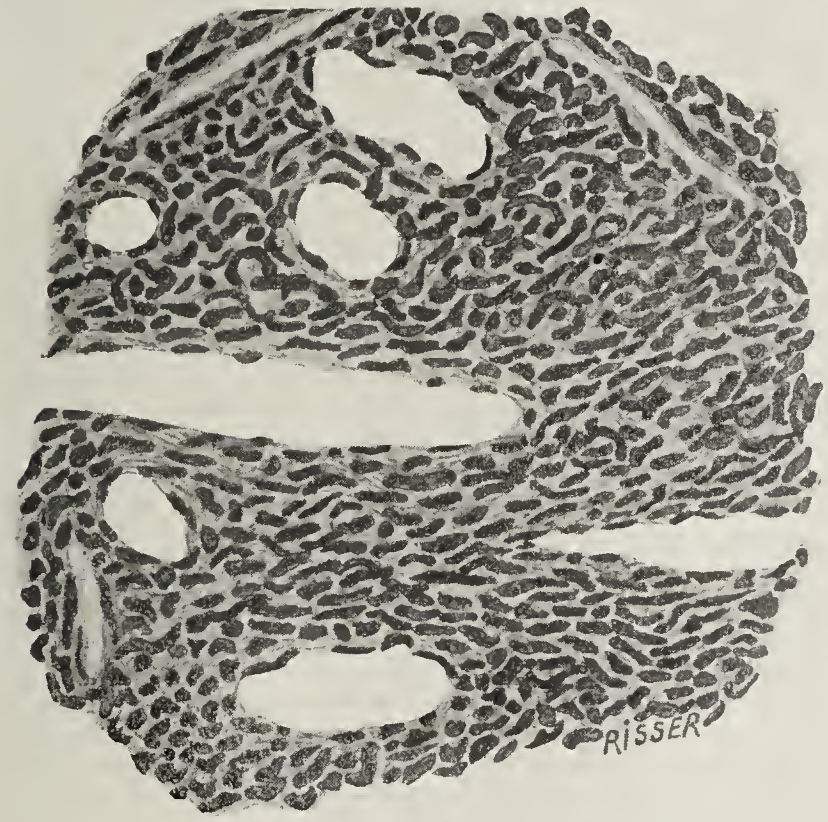

Fig. 10.—One-fifth objective.

On the other hand, benign tumors grow slowly, they may exist many years before attaining any considerable size, they rarely give pain, nor do they as a rule destroy the vision. By pressure on the optic nerve, however, they may produce neuritis or neuroretinitis and finally atrophy of the optic nerve. There is always one symptom common to all forms, excepting a luxated lachrymal gland, namely, proptosis. This exophthalmia takes different directions, and this locates the seat of the tumor. If the tumor is at the apex of the orbit or within the cone of the recti muscles, the extruded eye will take the direction of the orbital axis; if the eye is pushed outward and downward, it indicates the seat of the tumor as being at the upward and inward portion; if the eye is pushed inward and downward it indicates the location of the tumor as being upward and outward. With the little finger, one can get behind the eyeball, and if on palpation the tumor is found to be hard and immobile, we can conclude that it is of an osseous nature, especially if the tumor be of slow development. If the tumor is soft and fluctuation can be detected, it may be of a serous, phlegmonic or sanguinous nature. If it is soft or yielding without fluctuation or pulsation it may be fatty, as a lipoma; or if soft and less yielding without fluctuation it may be fibroid or glandular, as an adenoma. If it is vascular, as an angioma, nevus or aneurism, there will exist pulsation and bruit, especially if the patient takes the stooping position with the head hanging low. Osseous tumors do not change position or size in any change of position of the patient; to a certain extent, however, this is true of all tumors of the orbit with the exception of the sanguinous. In fatty and fibrous growths pressure on the tumor may cause more proptosis of the eyeball; but on the other hand pressure on the eyeball will probably cause more prominence of the tumor. In pulsating tumors, the upper lid is swollen and tense, especially are the veins hyperemic, with an elevation of temperature, both lids frequently being everted. The protruding lids and exophthalmia being replaced will immediately return on removal of pressure. There is a continuous soughing or murmuring; sometimes the sound is of a whistling nature. Pressure on the carotid will cause the pulsation and noises to cease. The ophthalmoscope often reveals a papillitis or atrophy of the optic nerve. Venous pulsation is nearly always present and not infrequently arterial at the margin of the optic disc. Patients with angioma complain of a knocking, roaring or buzzing in the head and ears. This disease is more frequently seen in women than in men. It is difficult to determine the different varieties of pulsating tumors. The vascular are more resistant than aneurisms and their position, as a rule, is out of the line of the axis of the orbit. The pulsating tumor is usually found at the inner and upper part of the orbit and the bruit is of a continuous murmur and is complicated with a vesicular murmur of each systolic action of the heart. There is frequently a paresis of some of the

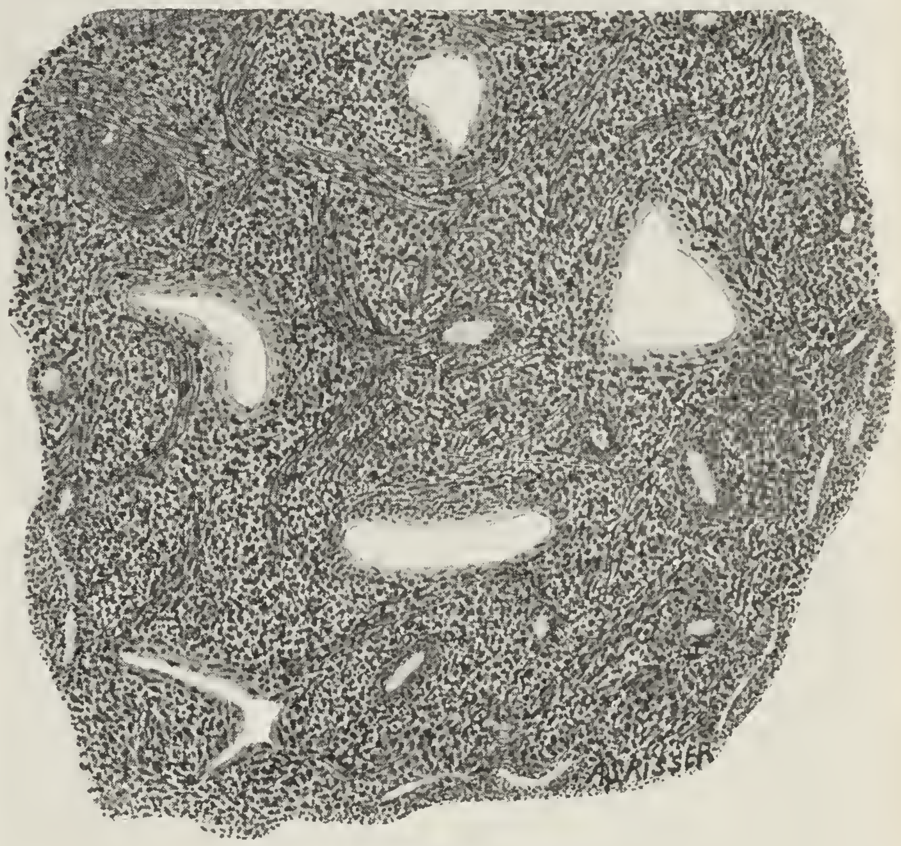

Fig. 11.—Two-thirds objective.

nerves of the eye muscles, ptosis occasionally existing. In pulsating malignant tumors ligation of the common carotid does no good. In angioma, in all cavernous tumors and in aneurisms, on making pressure on the tumor or eyeball there will be a recession of both eyeball and tumor; or, if the patient takes the horizontal position the eye will settle back into the orbit. The principal diagnostic symptom of an angioma or aneurism, however, is the bruit heard by means of the stethoscope together with the pulsation felt by palpation.

REPORT OF A CASE.

The following is a letter received previous to the arrival of the patient:

Dr. Flavel B. Tiffany. Dec. 2, 1904.

Dear Doctor:—I have patient who has been to all the eye men in the western country. His case has been variously diagnosed. Some call it angioma, others aneurism, and one man has diagnosed enlargement of the lachrymal gland. His condition is rapidly getting worse and something must be done soon. The growth is situated behind the eyeball, pushing the latter out to an enormous degree. It is a pulsatile tumor, not painful. The only pain is caused by the accompanying conjunctivitis, which is caused by failure of approximation of the lids. The patient is poor, but very worthy, and his case is one which I am sure would prove very interesting to your class. I would like to have him consult you if you could do it charitably; then if there is any operative work to be done he might be able to pay you something. If you can do anything, would some day next week suit you? Hoping to hear from you soon and trusting that something can be done for the poor fellow, I am, truly, Ralph L. Funk.

The patient consulted me first December 10, 1904. I give the history in his own language:

History.—I am 38 years old, married, and by birth a German. I am a farmer and live at Baker, Kansas. Five years ago my wife first noticed something wrong with my eye. I did not notice it until we had a picture taken of the family group, when I saw that my left eye bulged. I went to the family doctor several times, but he did not seem to know very much about it. I then went to Dr. R., who took out a piece about as big as the end of my thumb. My brother said that the substance was stringy and that he removed it with a hook. Two days after the operation the doctor told me that he had not gone deep enough and would have to operate again, but the chances were that I would lose the sight of my eye. I had lost confidence in him, so I went to St. Joseph to see Dr. W. He described the case to me and told me that it was a bad case of bloody tumor. He used the electric needle five days to clot the tumor, as he said, and then he would pick it out. He said I should have to take chloroform. My brother witnessed the operation, and he said I had a severe hemorrhage and Dr. W. told me that I lost three and a half pounds of blood; he said that he stopped the flow with hot irons. Six weeks after this operation I went back and he wanted me to let him take the eye out and get at the root, but I was afraid. I then went to Dr. B. of Nebraska, and I was in the chair ready for the operation and the assistant ready to give the chloroform, when the doctor, after making a more careful examination, said that if I would rather, he would present the case before the Academy of Ophthalmologists and Otologists at Denver, Colo. Said that the celebrated eye doctors of America were having their meeting at this time at Denver. I went before them and they decided it was angioma. I then had an opportunity to go to Omaha and while there I consulted another eminent oculist, but he could not tell what the trouble was and said if I was in no hurry he would write to Dr. Knapp of New York, who had a case like mine twenty years ago when he was a student of Dr. Knapp's, and the operation was successful. He was to let me know when to come up for the operation, but I have never heard from him. I then went to Dr. Funk, whom I have known for some time, and he advised me to consult you. I have never had any serious sickness nor injury on the head that I can recall. I had la grippe about one year previous to noticing anything wrong with the eye.

A day or two after giving the history the patient received the following letter:

Dec. 14, 1904.

Dear Sir:—Since you left I have looked up the matter of tumors similar to yours and believe that it would be better to try tying the internal carotid artery to see if that will not stop the progress of the disease without operating on the orbit directly. If none of the surgeons there care to do this for you, you can have it done here, or if this does not cure you it will then be time to consider a direct operation on the orbit.

Yours sincerely, ———.

Before operating, I presented the case to our local society, the "Academy of Medicine," and after getting the history from the patient and examining him it was the consensus of opinion that the tumor was an angioma; several declaring that they detected pulsation and bruit; one oculist advised enucleation of the eyeball and extirpation of the tumor. I did not agree with them, as I could not detect the least pulsation, nor could I hear any bruit, nor would the eye or tumor change position with the changing of position of the patient. I said, however, that an operation would tell and we would be ready to stop all hemorrhage. I asked Prof. Jabez N. Jackson to assist and to be ready, if necessary, to ligate the internal carotid artery.

Examination.—The eye was displaced downward and inward, locating the position of the tumor, viz., upward and outward (Figs. 1 and 2). There was little if any change of position or size of the tumor when the patient was in a stooping posture with the head hanging low, or when he was standing or lying in the horizontal; nor could we change the size of the tumor by pressure, all of which went to show at least that it was not an aneurism and to a certain degree not an angioma. The lids showed some venous hyperemia as Figs. 1 and 2 indicate. This I attributed to meddlesome surgery, for, according to the patient's statement, he had had several operations, which with the normally high vascularity of this region would be likely to produce hyperemia. From the history as given by the patient particularly, if we may rely on what he said in regard to the opinions of the physicians whom he had employed, more especially the opinion of the members of the society of oculists who saw him at Denver, as well as the letters received, without due consideration and careful examination I might have jumped at the conclusion that it was a case of angioma; but with careful examination with the stethoscope no bruit was heard and by palpation not the least pulsation was detected, not even with the head hanging low. I was inclined, therefore, to discredit any existing angioma or aneurism, especially as this growth was only of five years' standing, coming on after middle life and without history of an injury. The ophthalmoscope showed no arterial nor venous pulsation at the disc, although the latter was somewhat blanched, this being due, probably, to the pressure of the tumor. There was some hypermetropia, caused also by pressure shortening the antero-posterior axis, but there was no hemorrhage nor scotoma. The tumor was evidently not malignant, as it was of slow growth and had given no pain and had not destroyed the vision. It was evidently benign in nature and did not come from any of the neighboring sinuses; nor was it osseous, for it was movable. By exclusion, therefore, it was logically concluded that it must be one of three kinds: fibroma, lipoma or adenoma. I have had two cases of luxated lachrymal gland in my experience, but the gland being so high in the orbit did not displace the eyeball much, so I was inclined to think that this was a fibroma or a lipoma.

Technic of the Operation.—December 22 I performed the following operation: I first passed a black suture through the external rectus for sake of identification. I tenotomized this muscle in order better to liberate the tumor from the muscles. I then made an extensive canthotomy, cutting through the orbicularis. At the margin of the orbit I went in back of the conjunctiva, taking care not to disturb more than necessary any of the extrinsic ocular muscles, nor the levator palpebræ superioris; then, by traction, I tore the tumor from its mooring, which was somewhat adherent to the recti muscles. There was some hemorrhage, but there was no trouble in controlling it with the hemostats. I finally detached the tumor in its entirety.

In incising it, the pathologist pronounced it an adenoma, thinking it to be the lachrymal gland luxated from its bed in a hyperplastic condition, having increased in size and weight. The dimensions of the tumor taken by the calipers were 28 mm. horizontally, 38 mm. vertically, and 22 mm. transversely. Its weight was 19.5 grams. Figures 1 and 2 show the appearance two days before the operation, and Figure 6, ten days after the operation; Figures 3 and 4 show the bulk and shape of the tumor, the illustration being natural size. Figure 5 shows the tumor cut open. A photograph taken four days after the operation (Fig. 7) shows the swelling of the lids not all gone, with complete ptosis and ankylosis of the eyeball, but it has receded into the orbit, and the vision is even better than before the operation. There is a decided convergence of the eye with ankylosis, indicating a paralysis of all the extrinsic ocular muscles except the internal rectus, but these conditions gradually improved as the swelling subsided. A photograph taken two weeks after the operation (Fig. 8) shows the swelling of the lids and the chemosis of the conjunctiva nearly gone and the eyeball receded into the orbit. There is complete paralysis of the levator palpebræ superioris and of all the extrinsic ocular muscles, the patient not being able to lift the lid nor to move the eyeball in any direction. The tearing of the tumor loose from its attachment evidently disturbed the nerves innervating these muscles, besides there has been some intraorbital cellulitis, which accounts for the ankylosis. The patient says that the whole left temporal and supraorbital region half way back is numb and void of all feeling, but the paralysis and anesthesia were transitory and in time passed away. He handed me several photographs taken at different periods of time for the past sixteen or eighteen years. These pictures establish the fact beyond doubt that the tumor did not start until about five years ago, and that it was of slow growth.

The special thing this case teaches us is not to depend too much on the history of the case from a layman's point of view, but to examine closely and to arrive if possible at a correct diagnosis before outlining the treatment.

I was inclined to rest content and to agree with my colleague, and to call the tumor a dislodged lachrymal gland until I submitted it to our pathologists, one of whom called it a fibrosarcoma, and the other an angiomyoma. After this controversy, the tumor was sent to Chicago. Dr. Emil Ries and Dr. Zeit pronounced it an endothelioma or a perithelioma.

This patient last called on me June 1, 1905, and there was no evidence of the tumor returning either locally or metastatically. The muscles had regained in part their function. His vision is now sufficient to read newspaper print. Figure 9 shows the appearance of the eye at this time.

Microscopic examination showed principally that the blood vessels had no definite walls. (Figs. 10 and 11.)

Patent Medicines in Norway.—It is reported that a new law in Norway forbids the newspapers to publish advertisements or in any way to further the sale of any and all foreign patent medicines.

ONE OF THE CAUSES OF IMPERFECTION IN THE RADIOGRAPHIC IMAGE.*

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SPOKANE, WASH.

Two recent articles on the *x*-ray in The Journal of the American Medical Association have interested me much. One in particular, in which the author, Dr. Stover of Denver, touches on the subject of the formation of *x*-rays at parts of the Crookes tube remote from the target. The belief in the formation of such rays is widespread and, no doubt, has some origin in fact. I wish in this paper to show that in some cases at least these rays are not thus produced, and can not, therefore, be held responsible for the bad effects noticed in radiography which are usually laid at their door. That there is, nevertheless, some obscure cause at work which tends to reduce the sharpness of the radiograph or of the fluoroscopic image is undoubted and it may be stated further that the *x*-rays do reach the photographic plate from directions other than that in which the target of the tube lies. In order to demonstrate the true origin of these interfering rays, I have performed three experiments, the results of two of which appear in the illustrations. The reproduction shown in Figure 1 is taken from a negative in which different parts of the plate were treated in three different ways. The part marked A was used to receive an exposure of the metacarpal bones in the ordinary manner. The part faintly showing the fingers of the hand, marked B, was exposed at the same time, but a sheet of lead 1/16 of an inch thick was suspended between the target and the hand exposed and at a distance of twelve inches from the hand and plate. Over the two narrow strips marked C, strips of lead were placed having the same thickness as the first, but in apposition to the plate. It will be noted in this illustration that the shadow C is much more dense than the shadow B, though the lead in each case was 1/16 inch thick. To account for this difference, we must assume that the rays which produced the image seen at B must have passed around the edge of the lead and not through it.

If they passed around the edge, we may assume three possible methods by which they accomplished their results:

1. They may have come from a different source of light in the tube. accessory rays. 2. They may have bent from their normal straight line, refracted rays. 3. They may have been produced by the action of the well-known rays from the target, striking the air and causing it to give off new rays in new directions, induced rays.

I am unable at present to devise an experiment which will distinguish between refracted and induced rays, but in regard to the first form, the accessory rays, that they, on this occasion, do not exist, is proved by the following experiment made with the same tube, coil, etc.

A completely closed lead box, which may be considered as a photograph camera for *x*-ray work, was placed fifteen inches below the target of the tube. The camera itself being five inches deep, with the photograph plate at the bottom, it will readily be seen that the plate was twenty inches from the target. As is well known, it would be impossible to use a lens by means of which to form an image of the source of *x*-rays in the tube, so that for this purpose resort was had to what is known as pin-hole photography. In other words, the front of the camera was pierced with a minute round hole, which would allow the x-rays to pass through and which at the same time was so small that they would be forced to form an image on the plate at the botttom of the camera. The plate was now prepared in the ordinary way for x-ray work by enclosing it within two light-tight paper envelopes, and then placed at the bottom of the camera. The x-ray was now turned on and a long exposure given. In examining the resulting negative, it is noted that it is perfectly blank with the exception of one spot (Fig. 3). When one examines this spot one sees that it represents a picture or image of the target of the tube, and, on measuring it exactly, I find that its diameters are exactly one-third of the diameters of the target. In the center of this spot there is a far more dense spot, having a slightly oval shape, and the diameter of about $\frac{1}{8}$ of an inch. This dense spot represents an image of the active central part of the target, where the cathode rays come to a focus; this measurement multiplied by three gives the diameter of the focus as about $\frac{3}{8}$ of an inch. Over all the rest of the plate no effect has been produced by the action of the rays, though the various parts of the plate must have been exposed respectively to the effect of any x-rays which emanated from the various parts of the tube other than the target. I feel that this negative, therefore, proves that in this particular instance, at least, no x-rays worthy of notice were produced in any art of the tube, with the exception of the target. In the illustration the faint image of the target has been lost and only the image of the central or focus point is shown.

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* These experiments were performed in February and March, 1905; the paper was read at the April meeting of the Spokane County Medical Society.

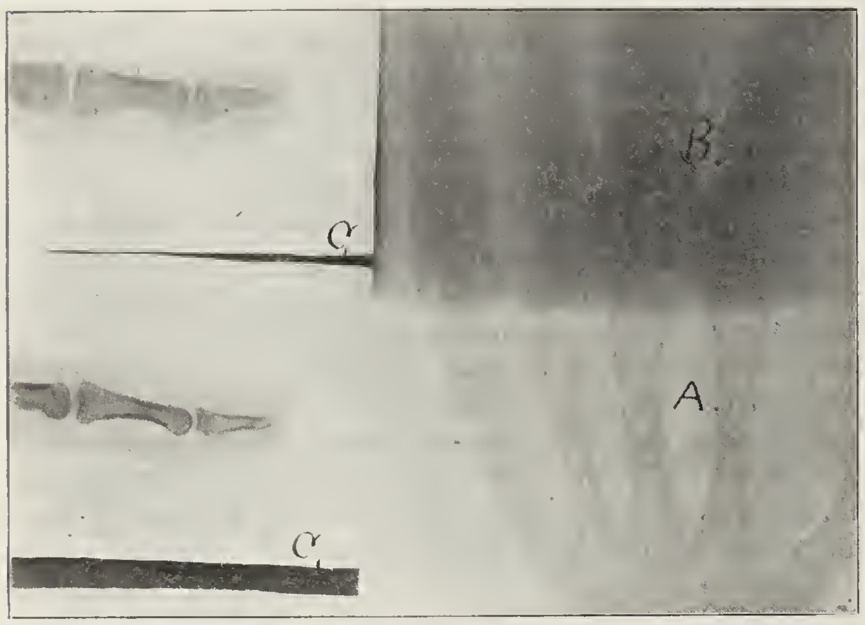

Fig. 1.—Printed lightly to show the image of the fingers produced by the lawless rays which have been induced by the lawful rays which affected the plate at A.

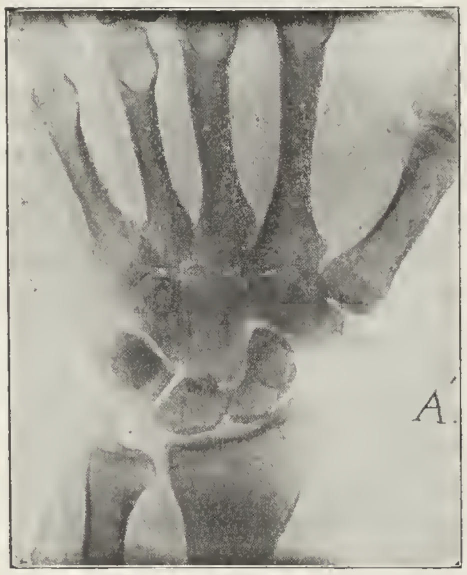

Fig. 2.—Print fully exposed from part A of negative from which Fig. 1 was taken.

Fig. 3.—An image of the source of x-rays in an active tube taken by pinhole photography with a lead camera and a plate protected from ordinary light.

I am therefore forced to the conclusion that the rays which caused the trouble in this work, as illustrated at B in Figure 1, are produced in one of the two other ways, and probably by the regular rays inducing new rays by their effect on the air through which they pass.

OPERATION FOR CANCER OF THE MOUTH.*

W. W. GRANT, M.D.

DENVER.

The advantages claimed for the new operation which I have recommended[1] for carcinoma of the lip are: a better, more useful mouth, and, with less tension, a fuller and more natural lip and expression. There is also the distinct esthetic advantage that the lines of incision are less conspicuous, and in men, the usual victims of carcinoma, are soon covered entirely by beard. Plastic surgery means the free use of the knife in liberal incisions, and infinite patience and attention to details. In some respects this is more important in the surgery of the face than of any other part of the body. I know of no department of surgery which taxes more severely the skill, nice sense of proportion, harmony and delicate technic of the surgeon. In the unusually bad cases I report, the operation is tedious, bloody, of rather extensive proportions, and formidable in appearance during its progress; but results justify every step and effort in its consummation. The disease usually occurs in the lower lip of males. The operation is equally applicable to the upper lip, and to partial or complete excision of the lip.

The ordinary V operation, in common use so long that it seems heterodox to question its standing, is most inappropriate, except in small growths, with large mouths. Though the lips are very elastic, they can not stand the excision of the vermilion border with its broad base and apex on the chin. The sucker mouth results, and the tension and contraction are too great to make a useful mouth or a desirable appearance.

METHOD.

The method of procedure consists of two perpendicular incisions on each side of the growth, connected by a straight transverse incision at the base, which is usually about the crease between chin and lip. This leaves a quadrangular space to be filled by flaps. An incision is now made from each inferior angle of the wound, obliquely downward and backward beneath the maxilla, on a line about equidistant between its angle and apex of chin or symphysis. Its further extension is measured by the extent of lip removed and the glandular involvement. All the submaxillary glands are removed through these incisions except the submental, which may necessitate a separate incision in the middle line. When the lip is extensively involved, the cheek is completely separated from the inferior maxilla to the middle of the masseter muscle. After the glands are cleaned out the triangular flaps are brought together and united first in the middle line. If the tension is great or considerable, from the amount of tissue excised, I am in the habit of inserting one mattress suture about three-quarters of an inch from the central line and tying it over pads of gauze, covered with oiled muslin to prevent soiling. This effectively removes undue tension from the sutures in the center of the flaps. The stitches uniting cheek posteriorly are now inserted, or if previously inserted are tied, care being taken to include entire thickness of cheek or upper border. I use for this purpose interrupted silkworm gut or running stitch of chromicized catgut. A small rubber tube should be inserted in the posterior angle of wound on each side to drain the mouth and for irrigation purposes.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Medical Record, March, 1899.

The stationary chin tissue is of the greatest importance as a point of fixation for the flaps. In uniting the flaps to the chin, in the centers it is well to omit a stitch for drainage of the space between incisors and flaps. When half or more of the entire lip is removed, I am in the habit of perfecting and completing the operation by making an incision from each angle of the mouth backward and slightly downward half to one inch in length, down to the buccal mucous membrane, and then separating the latter from overlying tissues above, below and posteriorly to the extent of half an inch. The lip above and below is now beveled from the inner border in order to conform to natural conditions and also to make it easier to cover. The mucous membrane is now divided in the middle line and the flaps united to the skin by one continuous suture of chromicized catgut.

The orbicularis being cut in this part of the operation, the levator angulæ and superioris muscles will tilt or crimp the upper lip for two or three months at upper angles of the mouth. This is not a serious matter, as it will accommodate itself to the parts by the action of the depressors, and will hardly be noticed, if at all. Still, I am in the habit of cutting away more tissue at this point in order to limit this temporary defect. The operation is now complete in every detail, without leaving a single place to heal by granulation, or to be covered by future plastic work. The operation is completed with the application of gauze and bandage to face and head.

The ordinary method of anesthesia is objectionable in these operations, because in the way of the operator, causing much delay. To obviate this I have devised, and had made, a double nozzle on a single stem, which is attached to a Junkers inhaler in place of the ordinary shield. By this device the anesthetic, usually chloroform, is administered through the nose entirely, while the apparatus and anesthetizer are both out of the surgeon's way and the operation proceeds without interruption. The mouth is also filled, moderately, with gauze, and the swallowing of blood is prevented.

POSTOPERATIVE TREATMENT.

This is of great importance. There is no such thing as perfect aseptic surgery of the mouth. This applies with great force to dirty, extensive carcinomas with usually bad teeth and constantly infected secretions. Consequently, daily change of dressings is necessary, with irrigation of mouth, directly and through tubes, with mild antiseptic solutions, such as boric acid and peroxid of hydrogen. This is continued a week or more as the conditions may require.

The patient is fed in the meantime with milk and soups through a tube attached to a fountain bottle or the nozzle of an invalid mug. Salines are given in the same way when needed.

COMPARISON.

Excepting the V operation, those in most general use are the Langenbeck, Bruns and Diffenbach, with slight modifications. By Langenbeck's method the growth is removed by an elliptic incision, and the flap for the lip is taken chiefly from the chin on one side, leaving a spur from the opposite to stitch to.

Esmarch, Kowalzic and Volkmann perform the same operation, except in making a double flap, which leaves them without a stable attachment. Both are very objectionable in not having a mucous covering for the flaps, or vermilion border. The result is a contracted mouth and inverted lower lip. Furthermore, this hard, thin, bearded tissue is not the most suitable for the construction of a new mouth.

Bruns takes the flaps from the cheeks by incisions from the corners of the mouth. The flaps are brought down and stitched in position for the lower lip. The flaps would have to be retrenched to get mucous covering for the border of the lip. The denuded cheek surfaces are covered by immediate stitching, which leaves two conspicuous vertical cicatrices and necessarily constriction of the tissues below the malar eminences. These are objectionable features.

Diffenbach excises the growth by a V incision and then makes a straight incision from the corner of the mouth nearly to the tragus, then a downward incision beneath the maxillary line, dividing all the tissues, including the mucous membrane. The entire flap is then slided to the middle line and stitched, while the gap in the side of the face is immediately sutured, leaving conspicuous scars, and doubtless a salivary fistula, as Steno's duct is cut. Syme, Buchanan, and Sedillot take flaps from chin and side of face. The method I present is, I believe, the least objectionable of any yet devised. It is the only one, except Dowd's, which permits the extirpation of the glands, through the same incisions, for the formation of the flaps. It has always the advantage of flaps, already fully covered by mucous membrane, and a vermilion border easily and promptly covered by membrane and not taken from the flaps. No denuded surface is left for stitching or granulation. The tension of the lip is slight or negative, especially after a few months. The lip is more prominent and mobile and the mouth more natural in expression.

Finally, there is not a cicatrix beyond the angles of the mouth above the inferior maxillary line in the operation on the lower lip, and the existing ones are soon covered by beard, while use soon erases the wrinkles due to them.

I commend the operation to your most favorable consideration, no matter how little or how much of the lip may be involved, and at any stage of the existence of the disease, while in all cheiloplastic work, regardless of the cause, it is an addition to the surgeon's resources.

CASE 1.—Mary R., aged 13, had a severe attack of diphtheria a few years ago in the mountains of Colorado, which resulted in extensive sloughing of throat and mouth. This resulted in solid adhesion of the lips in their entire depth, except a small opening in the center. I operated Aug. 20, 1901, by excising the linear scar to the mucous membrane, then separating the latter for a third of an inch above and below, divided it in the center and stitched the flaps to the skin as in excision of the lip.

Case 2.—W. H. E., a painter, aged 64. Carcinoma lower lip, extensively involving chin and glands beneath the maxilla, as shown in photograph. Duration two years. Six months previous to the operation treated with x-ray by Dr. Stover of Denver. He had not talked without great difficulty for eight or ten months. Operation April 9, 1904. This was the most elaborate, the most difficult, and one of the bloodiest I ever performed or witnessed. The principle and method were as described, but in such an aggravated case, varied to meet the conditions presented. I made a straight perpendicular incision from the right angle of the mouth to a point well beneath the growth. As the left angle was involved, I first made a slight lateral incision and then a perpendicular one parallel to the former, connecting both by a straight transverse incision, completing the excision by dissecting the tumor from the chin, leaving a large quadrangular space. To this point the operation in all such cases must be done very rapidly on account of hemorrhage. The downward and backward incision was now made from each inferior angle of the wound across the anterior

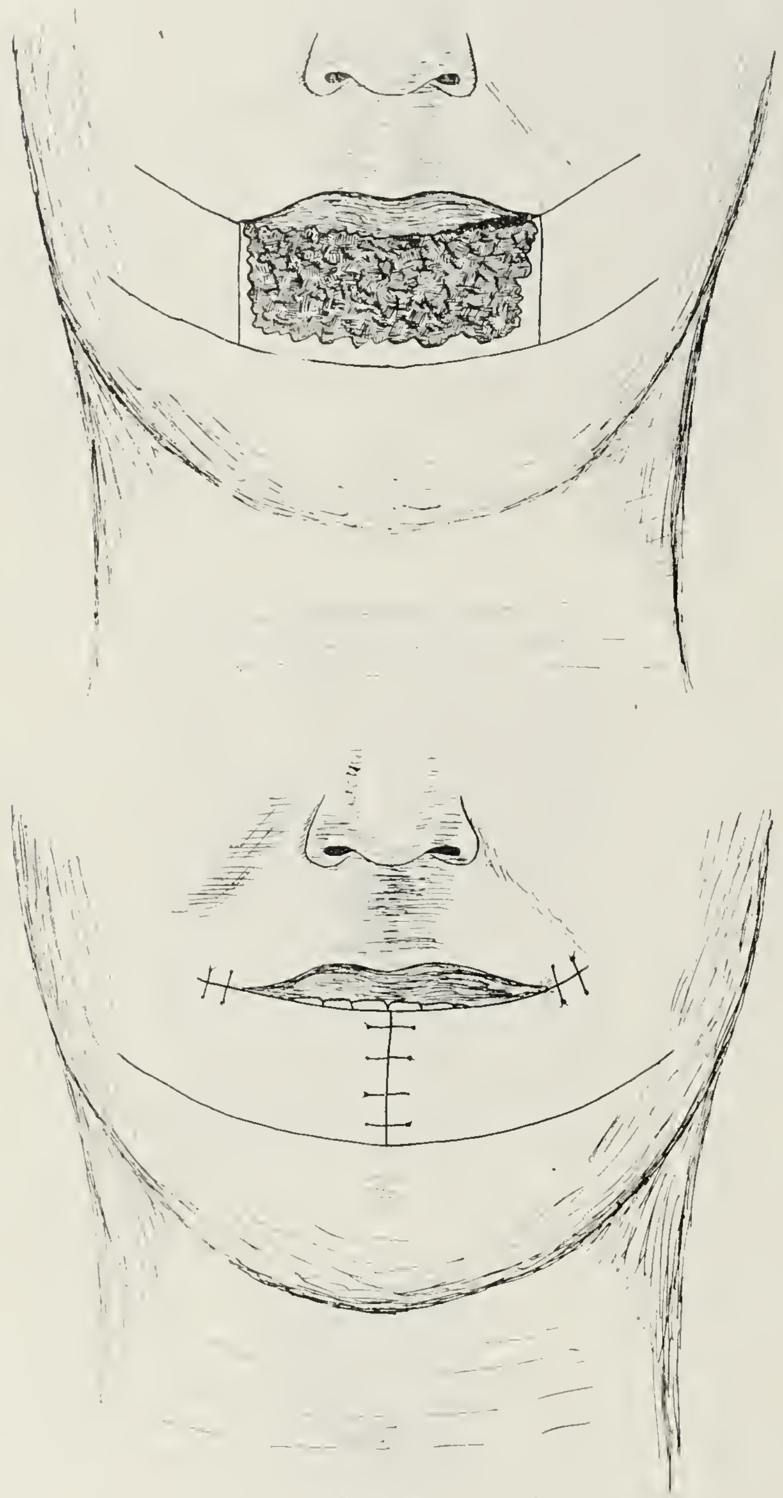


Fig. 1.—Malgaigne's method.

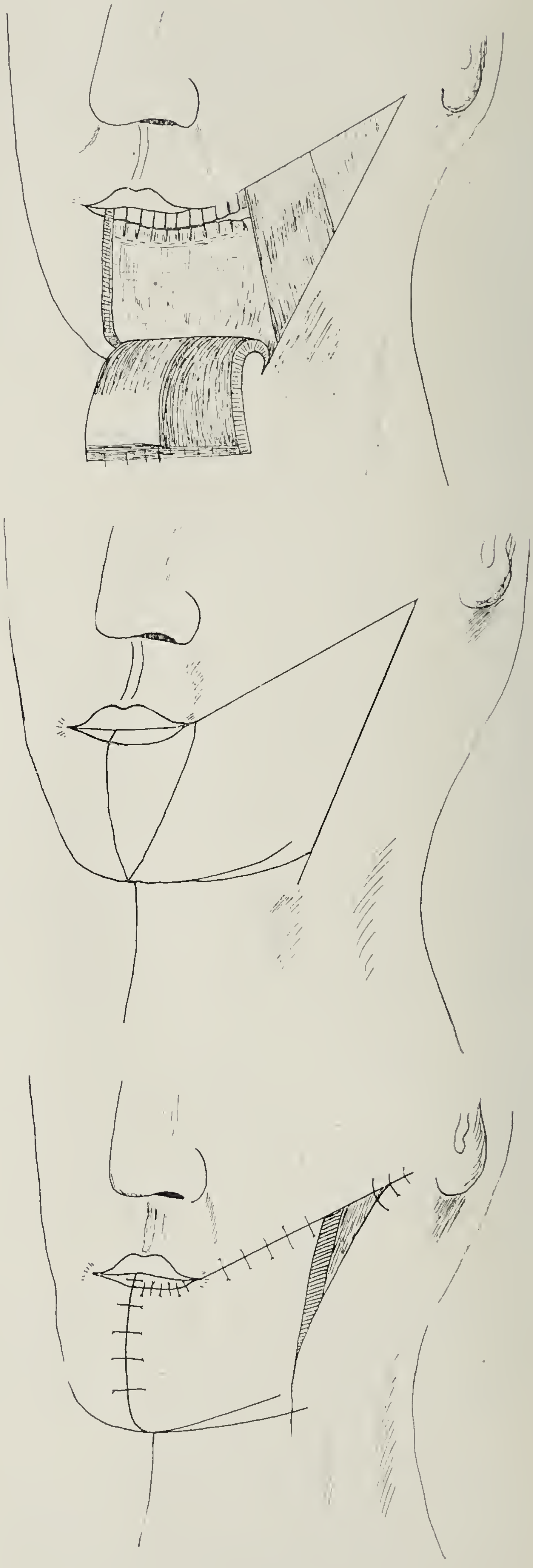


Fig. 2.—Dieffenbach's method.

triangle, the incision being longer on account of the immense gap to be filled. The cheeks were now separated from the inferior maxilla to the angles, cutting the facial arteries. In order to get free access to the extensive glandular involvement, I now made a transverse incision just beneath the apex of the chin, leaving a patch of skin an inch wide perpendicularly and nearly two inches transversely. The object of this being a fixed point to stitch the flaps to, a very important point in cheiloplastic work. The skin flap was now turned down completely from beneath the maxilla and anterior of the neck to the middle of the thyroid cartilage. The task of extirpating the glands was now begun. The superficial and deep glands, from the carotid sheath on one side to the other with hardly a break in the chain, were removed. The flaps for the mouth were now brought forward and united in the middle line with the aid of a mattress suture. Adhesive straps to the sides of the face, laced in front over gauze, may be used if deemed advisable to relieve the tension on the stitches. The operation at the angles of the mouth was now made as described, and the operation was complete, leaving not a gap to be filled by stitching, grafting or granulation. Drainage tubes were inserted in the posterior angles of the wound, and a slit in the flaps drained the submental space. Some infection of the flaps followed. This resulted in impairing the work at the corners of the mouth only, leaving the opening contracted some, but he could talk and eat with ease, and gained sixteen pounds in three months. I deferred securing photograph of mouth until I had an opportunity to repair the angles. This was postponed by the patient until he could make money to pay the hospital expenses. I kept track of him for six months after the operation. His health was good, with no recurrence. He then left Denver and I lost sight of him.

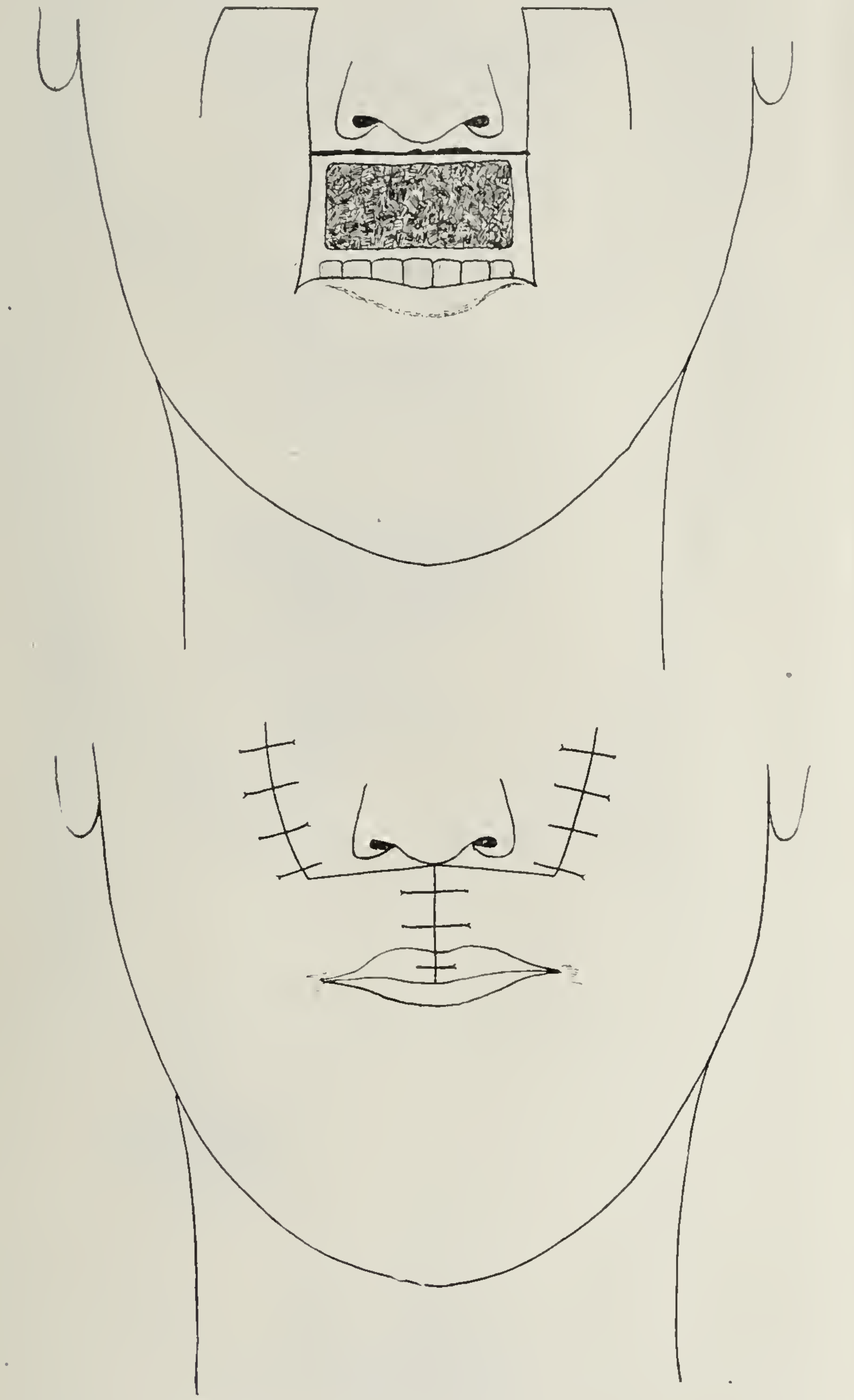


Fig. 3.—Dieffenbach's S-shaped method. Upper lip. Similar to Bruns for lower lip.

Case 3.—M. A. P., aged 50, bookkeeper and commercial salesman. Carcinoma lower lip. Duration, two years. Operation March 30, 1904. Six months prior to operation treated by caustic pastes, which aggravated the condition, and he was advised to try x-ray treatment, but declined. The entire lower lip was involved and excised by the method described and used in all my cases. The submaxillary and mental glands were extirpated. The disease being confined to the lip and few glands being involved, the incisions were not so extensive, the gap not so large, and the operation more easily and quickly performed. The result was satisfactory, the mouth being normal in size and natural in shape. Patient is perfectly well, with no suspicion of recurrence.

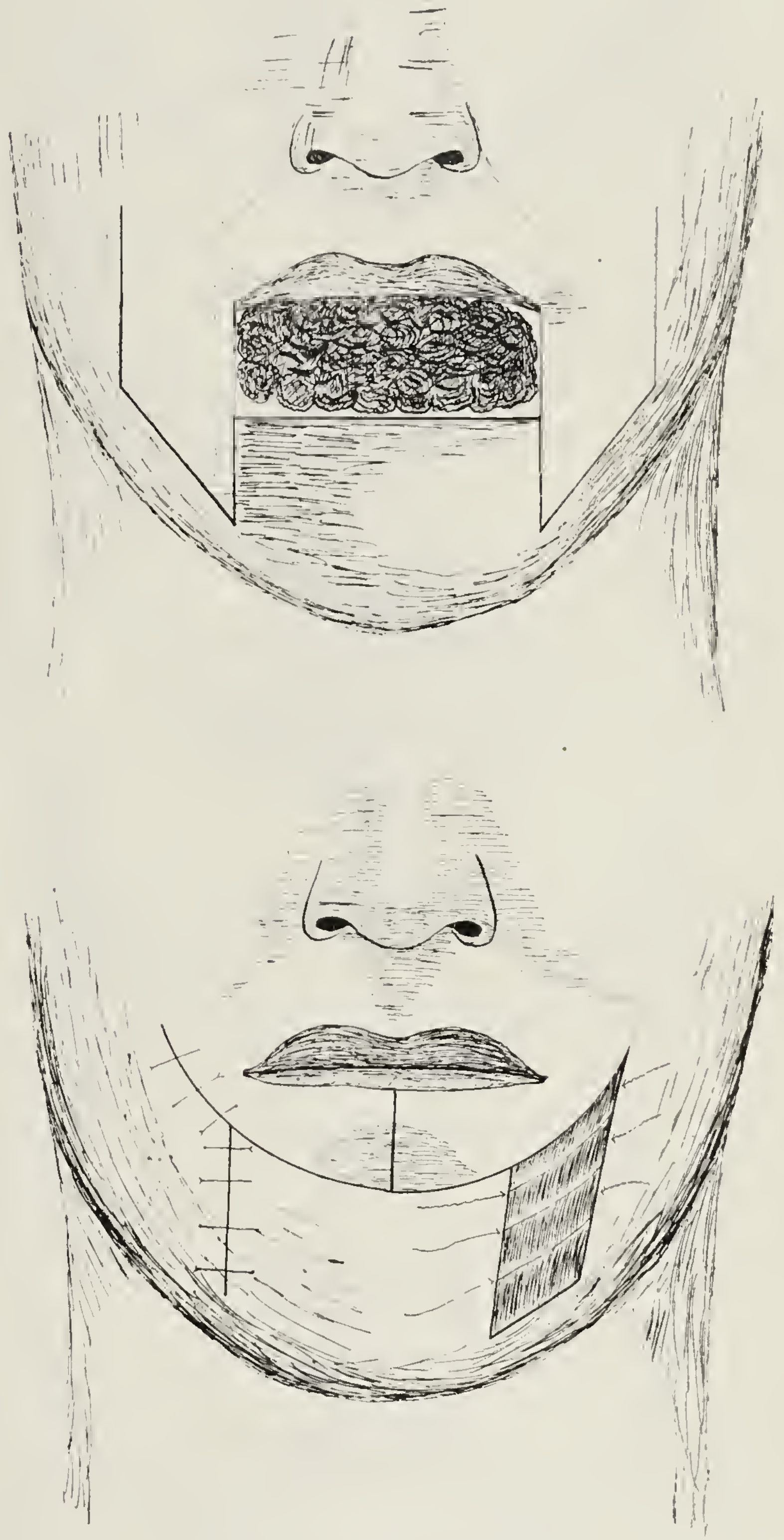
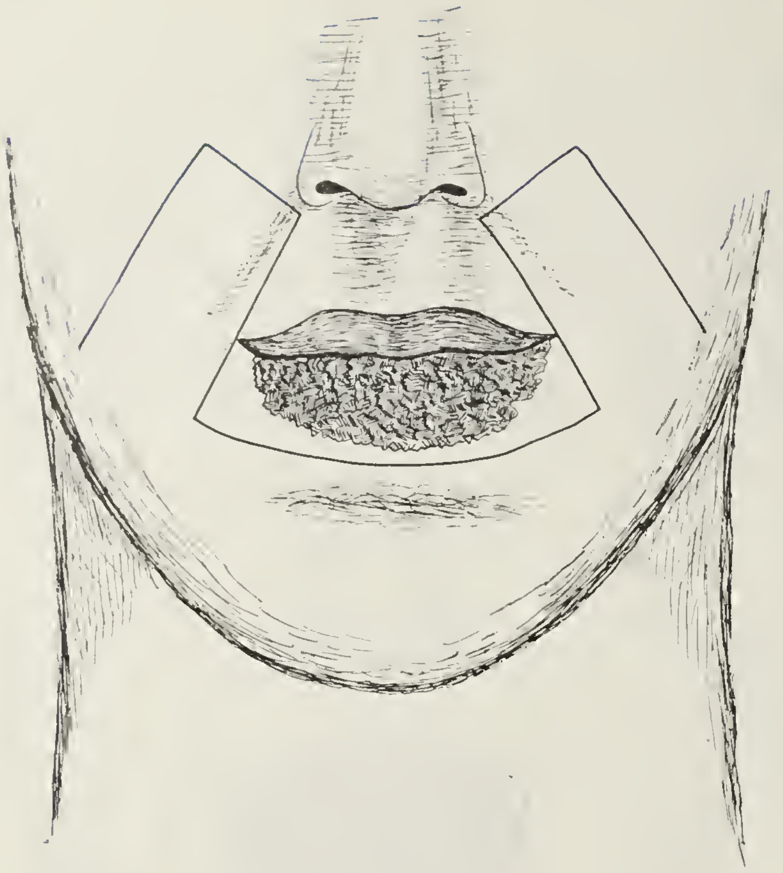
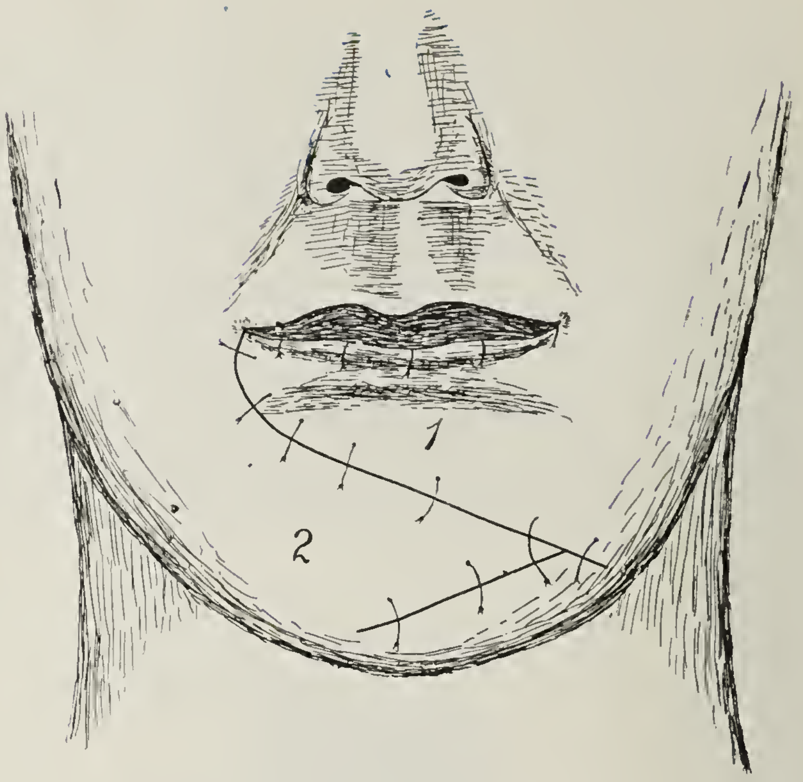


Fig. 4.—Sedillot's method.

Case 4.—W. B. M., aged 67. Occupation, banker and farmer. Carcinoma, involving entire lower lip, of four or five years' duration; also had lupus of left lower eyelid and ulcer below temple, which healed under x-ray treatment. Same treatment of lip, for six or eight months before operation, but aggravated it. Base of growth hard and edges ragged and everted. Operation May 25, 1904. Same as preceding case. Submaxillary glands involved, the submental especially enlarged and hard. Mattress suture used in this case. Progress most satis-





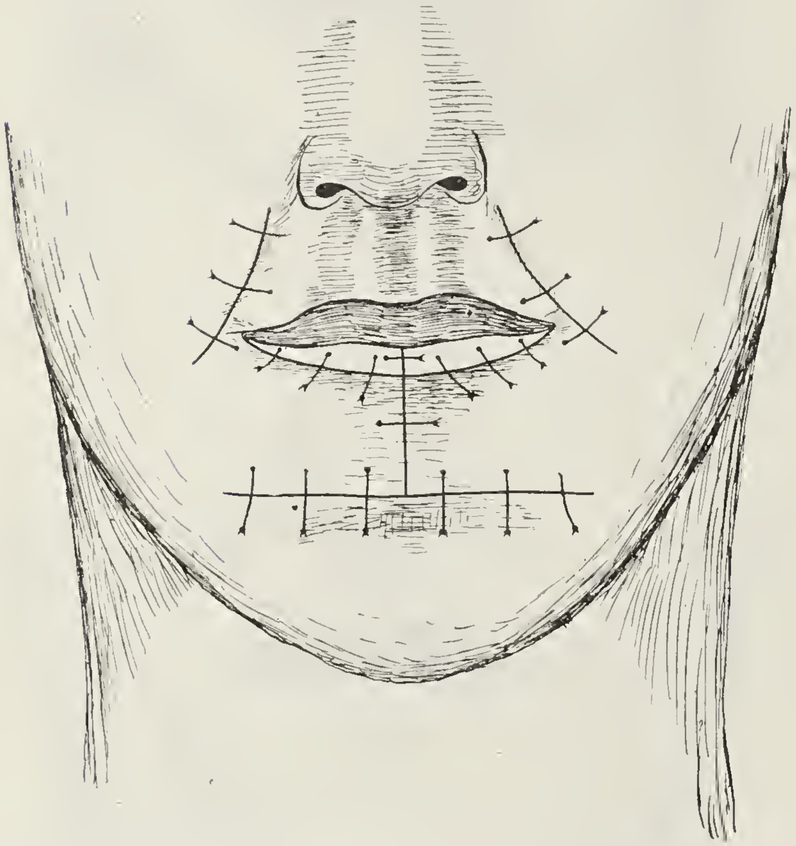


Fig. 5.—Cheiloplasty with the formation of two flaps from the cheeks (Bruns).

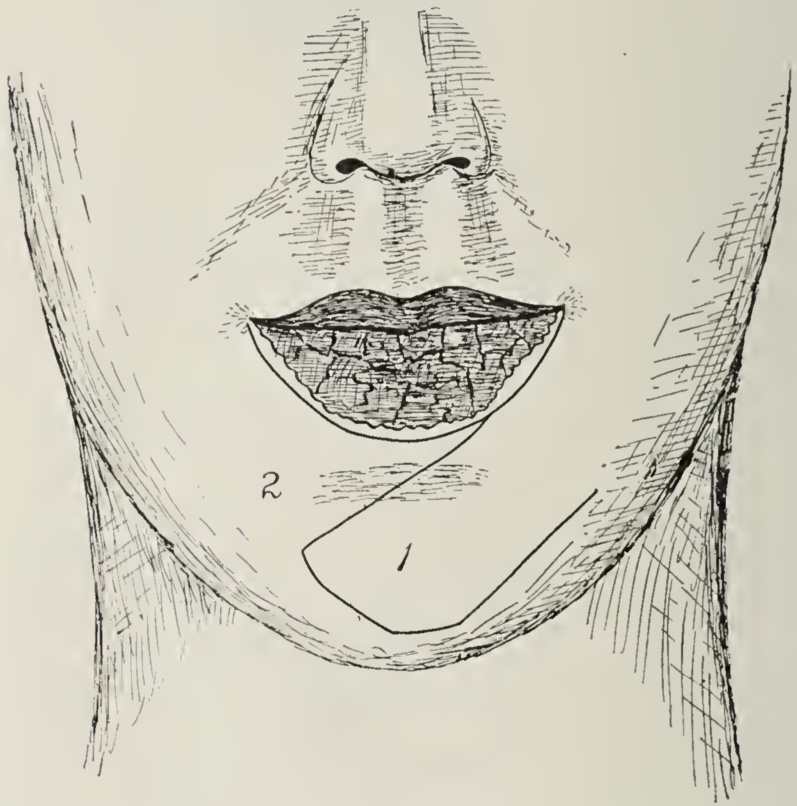
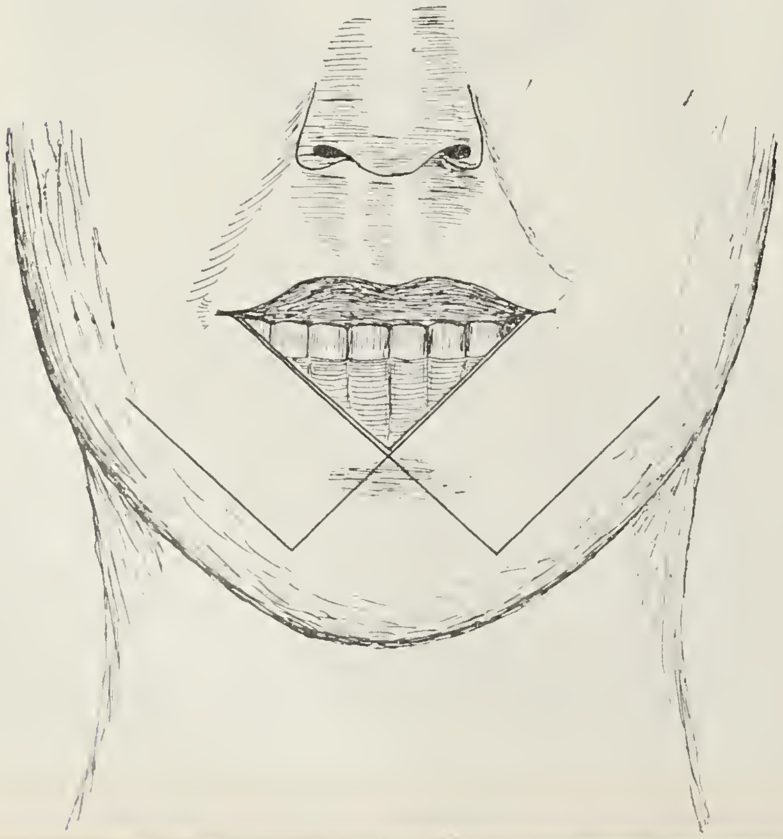


Fig. 7.—Cheiloplasty with the formation of a flap from the chin (Langenbeck).



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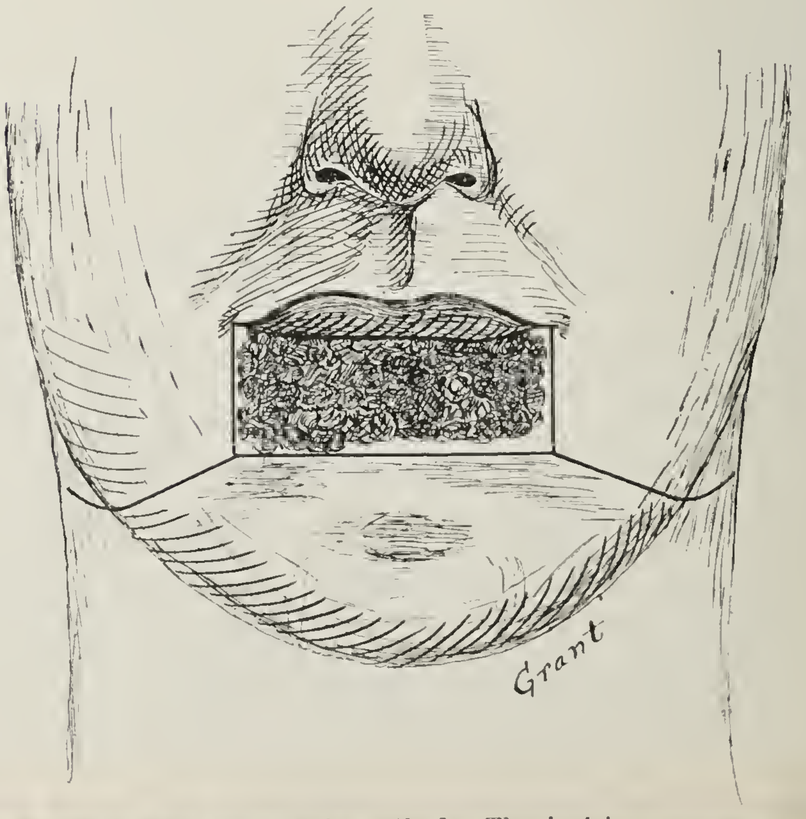

Fig. 8.—Grant's method. The incision.

factory. No infection except slightly at posterior angles. Primary union. Condition before and thirteen months after operation shown by illustrations. Local result excellent. No recurrence and general condition fine. Pathologic examination by Dr. W. C. Mitchell showed specimen to be carcinoma. I deemed this examination interesting and important on account of co-existing lupus of other parts of the face.

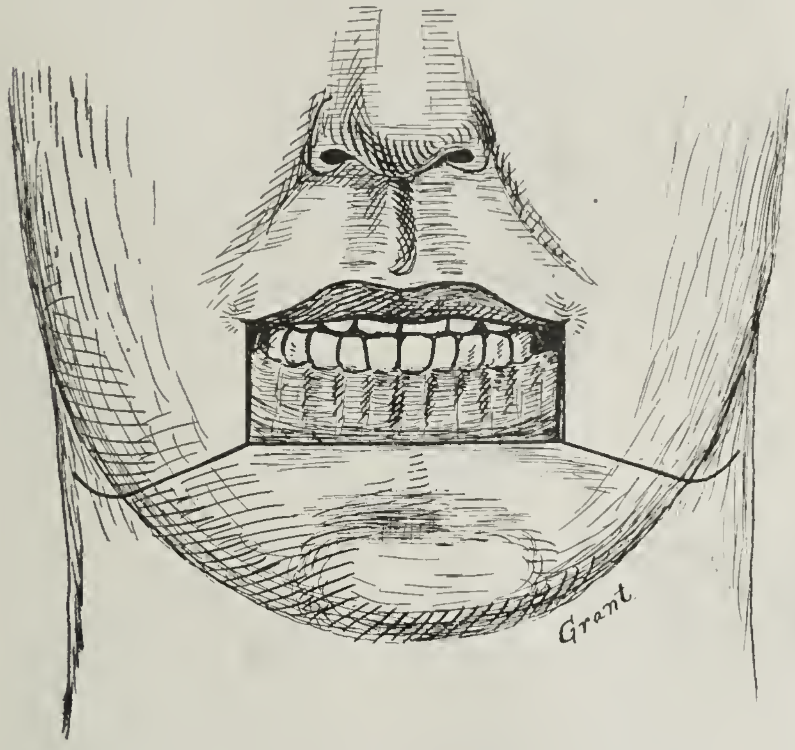

Fig. 9.—Second step of Grant's operation. The mass removed.

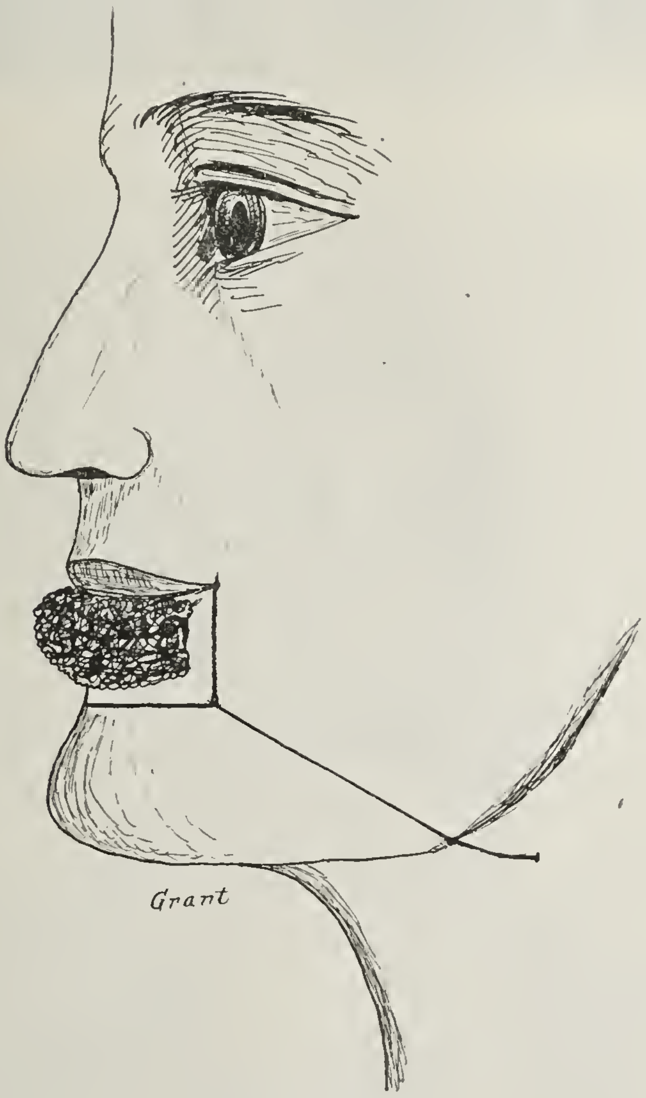

Fig. 10.—Side view.

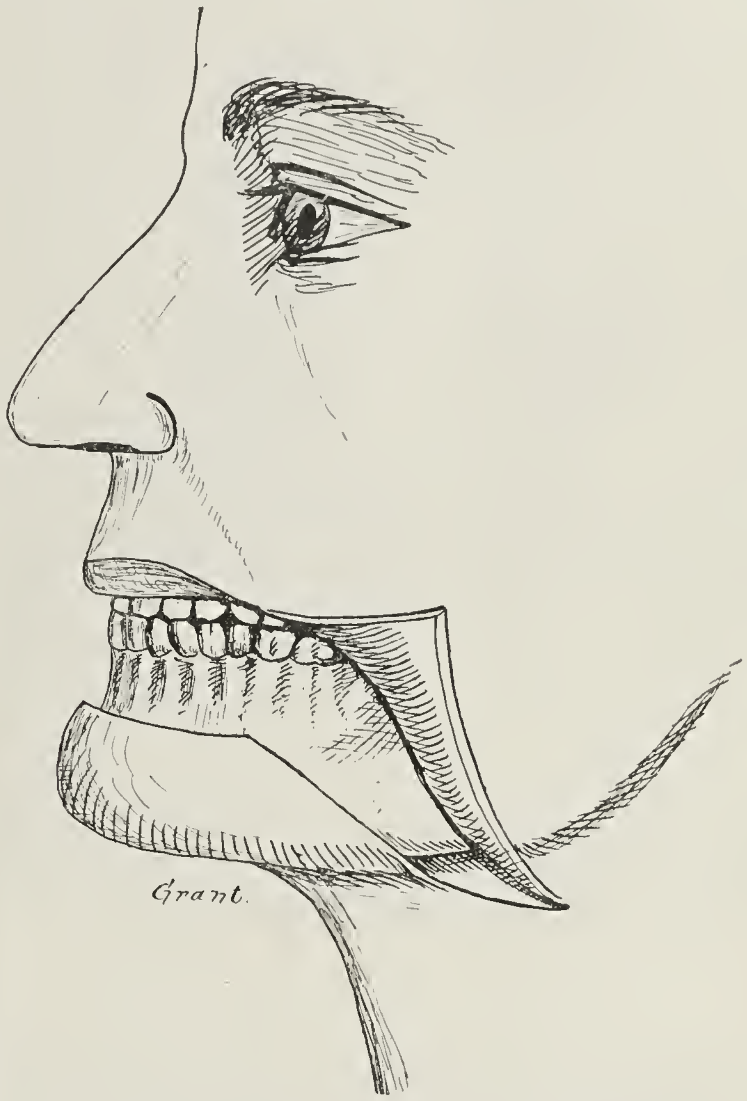

Fig. 11.—Dissection preliminary to suturing.

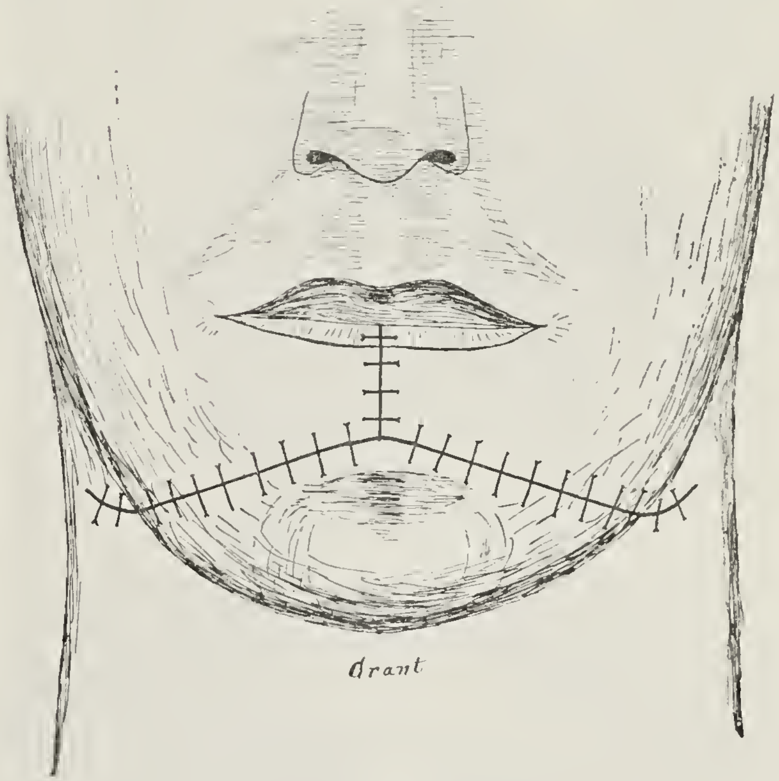

Fig. 12.—Sutured.

Case 5.—W. N., aged 59, came from his home in Chicago to Denver to die among his children. He was referred by Dr. James Nevins Hyde to Dr. J. M. Blaine, of Denver, who referred the patient to me. The carcinoma involved the entire lower lip, extending slightly beyond the left corner of the mouth and invading the chin. It resembled very much in extent and appearance Case 2, but glandular involvement was much less extensive. Its duration is four years; it commenced as a small abrasion or ulcer near the center of the lip. Its progress was slow for a year or two. Three years ago it was treated by a paste in Chicago, and for some time was greatly improved. Beginning fourteen months ago it was treated for three or four months by x-ray in Chicago. This sensibly aggravated the condition. When presented to me in February last, it was an offensive, cauliflower-looking mass. Operation March 5, 1905, at St. Luke's Hospital, Denver, where the other operations were also performed. I was assisted in all the operations by Dr. R. G. Morrison of Denver. There was slight infection of the posterior inferior edges of the flaps in front due to imperfect drainage, and, perhaps, influenced some by the fact that the flaps, being slightly thicker than the chin tissues to which

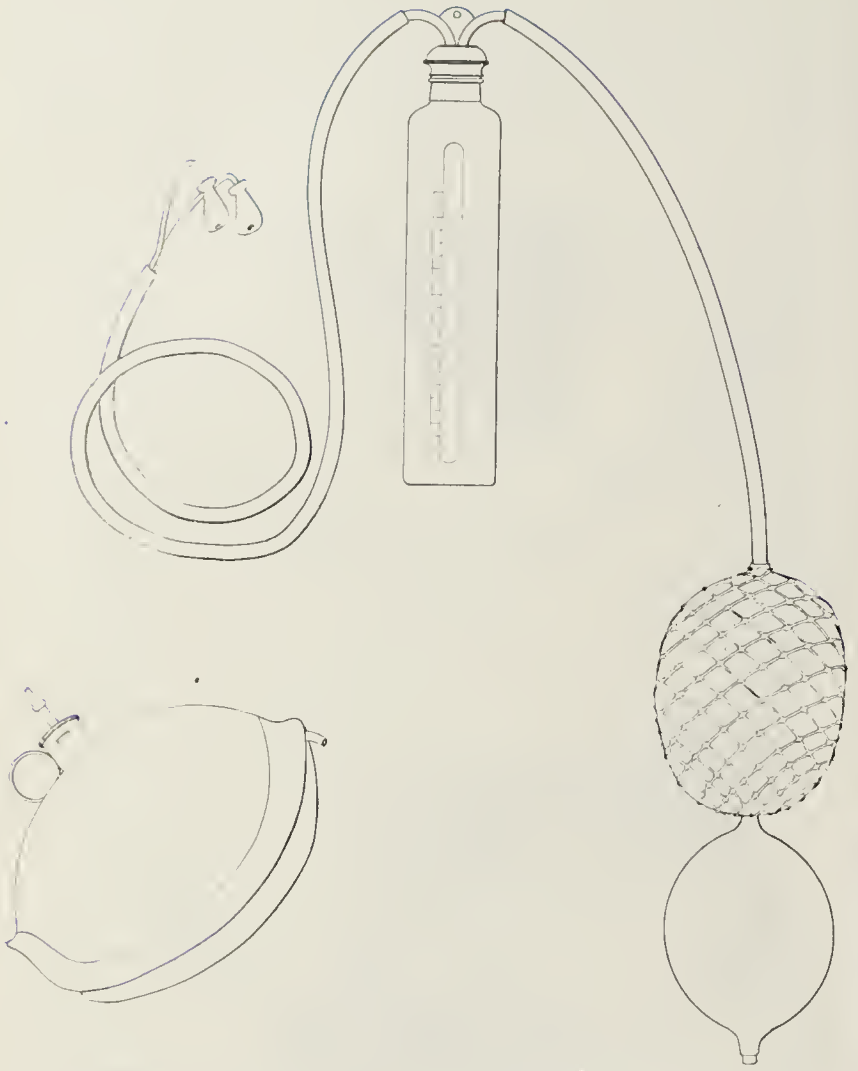

Fig. 13.—Junker's inhaler, modified by Grant.

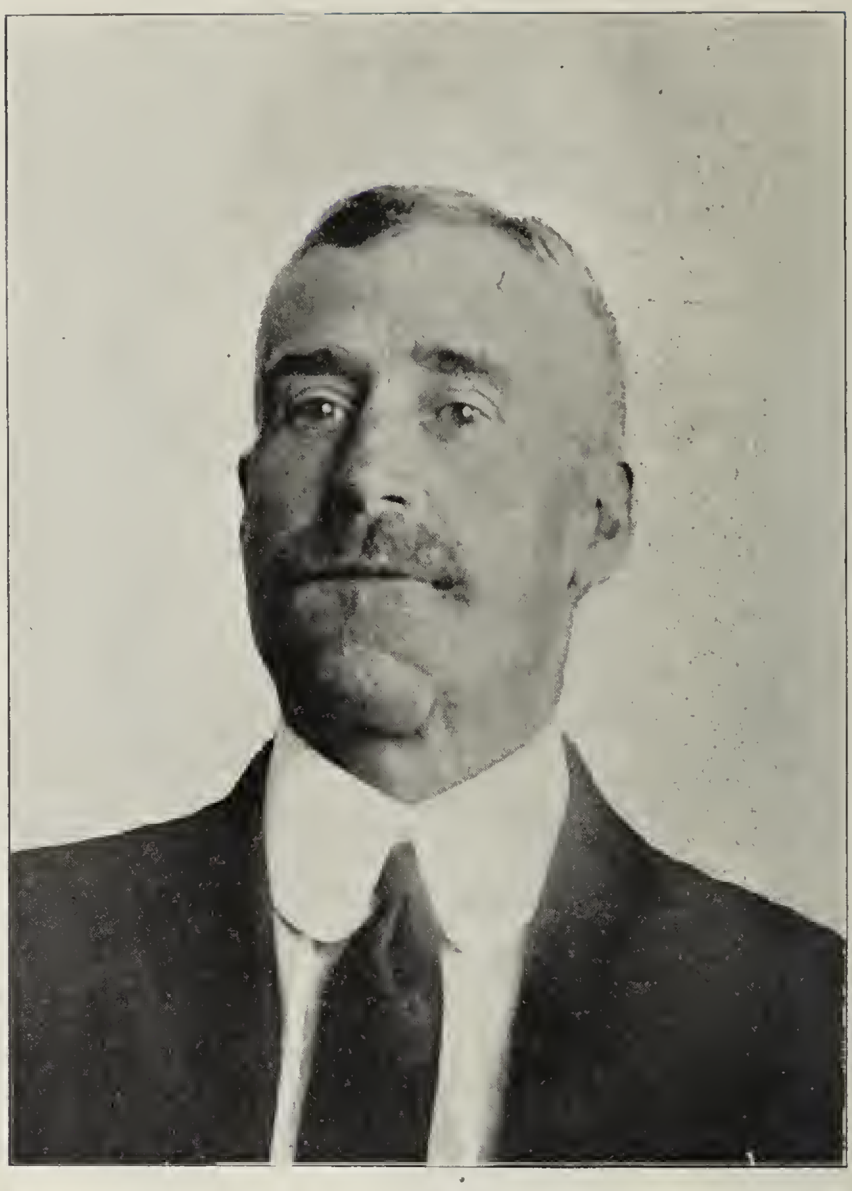

Fig. 15.—Case 3. Three months after operation.

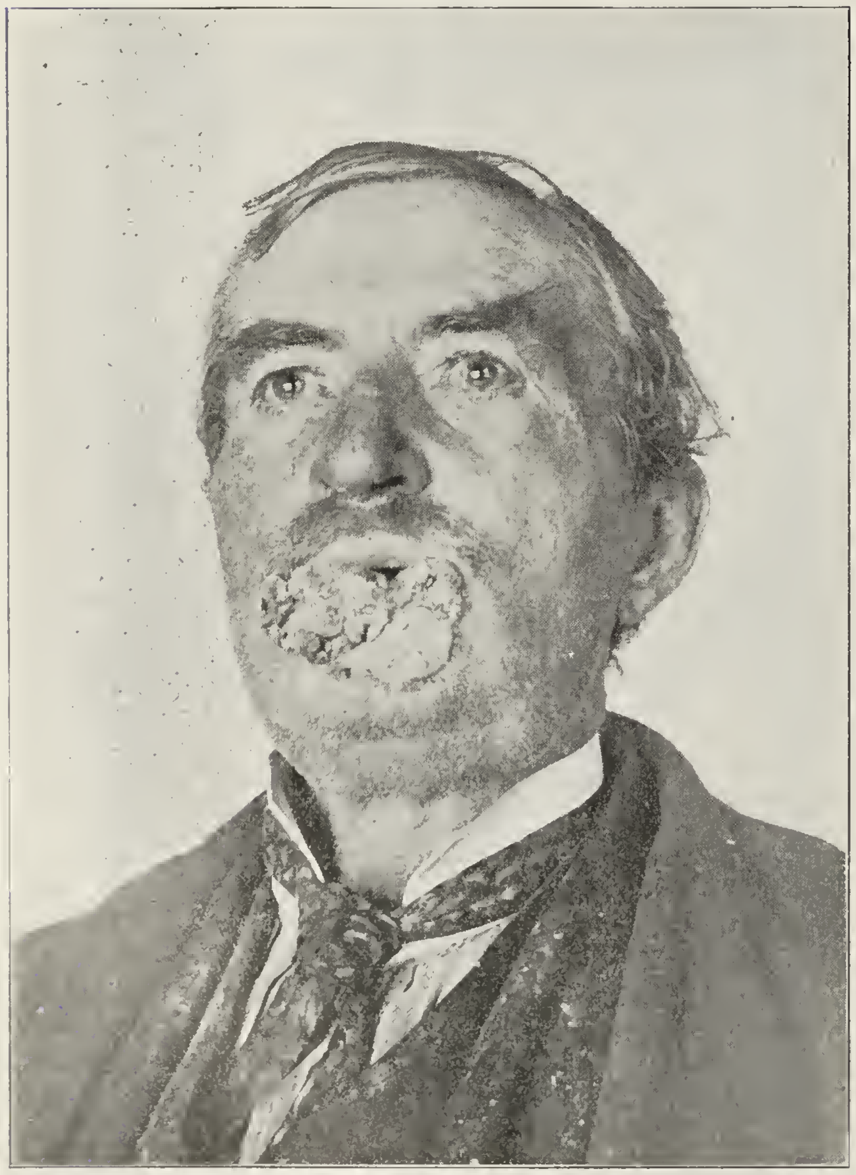

Fig. 14.—Case 3. Carcinoma.

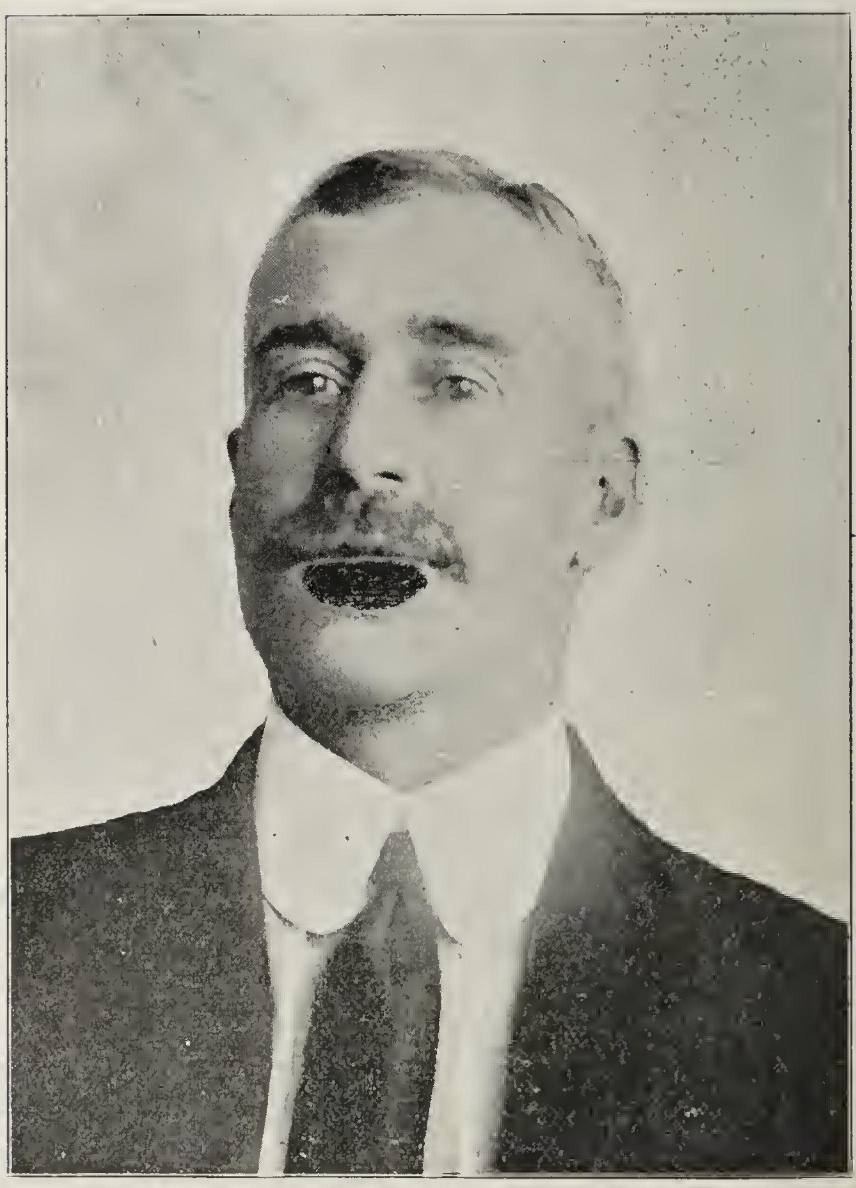

Fig. 16.—Case 3. Carcinoma. Before operation.

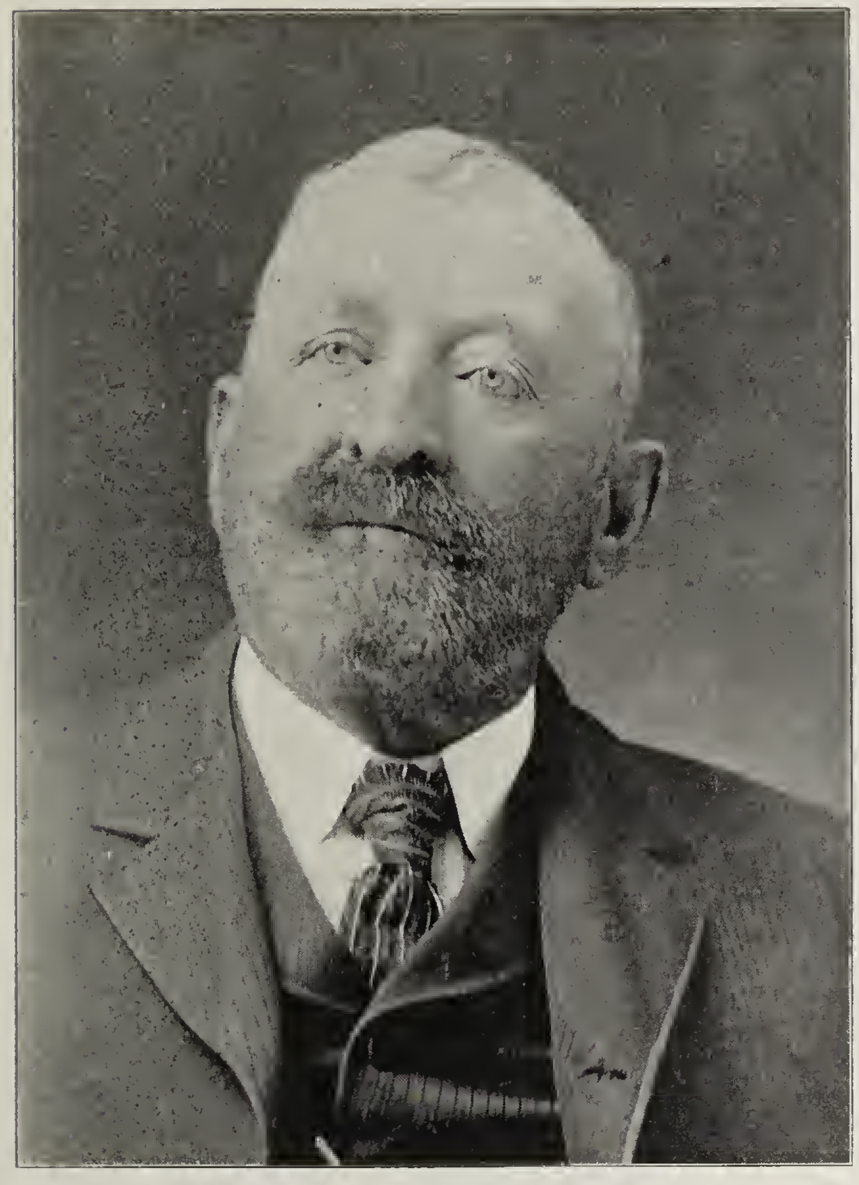

Fig. 17.—Case 4. Thirteen months after operation. Entire lip involved.

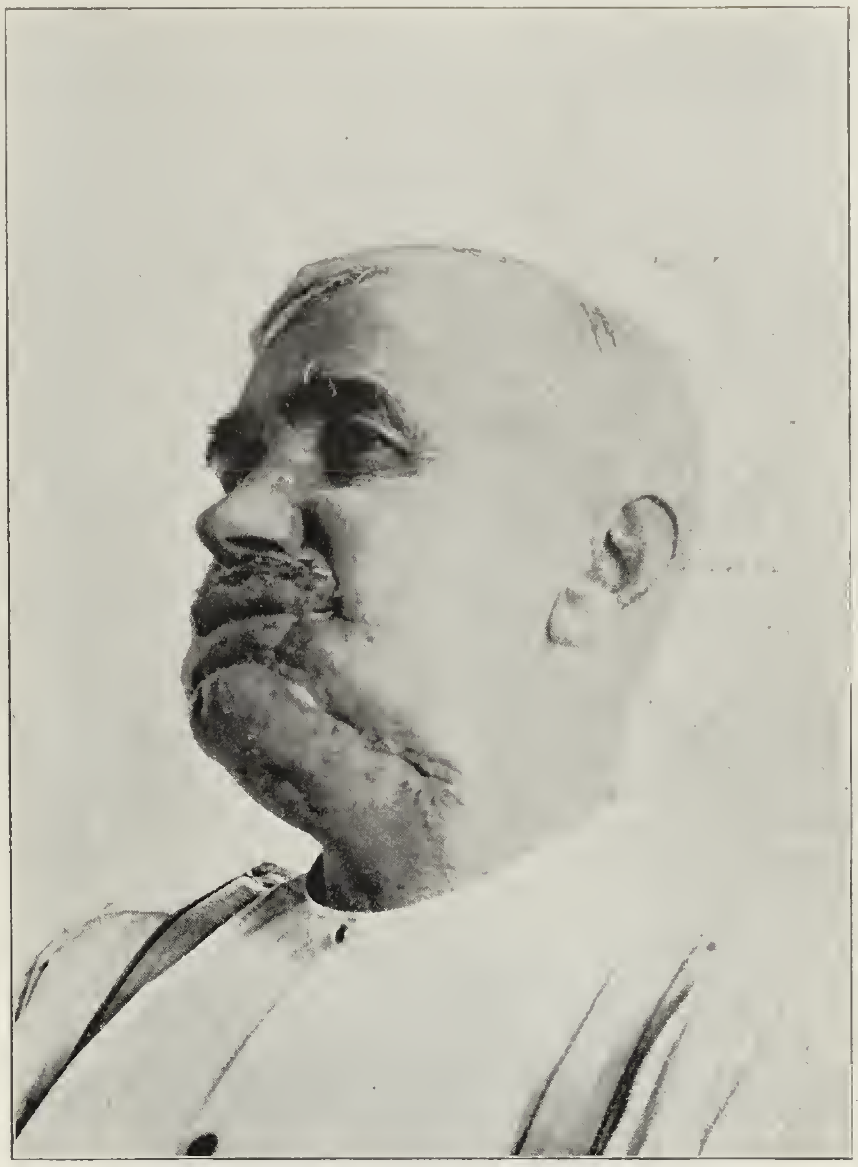

Fig. 19.—Case 5. Eleven days after operation. Shows oblique incision downward and backward and union of flaps a little to left of center, left flap being shorter than right.

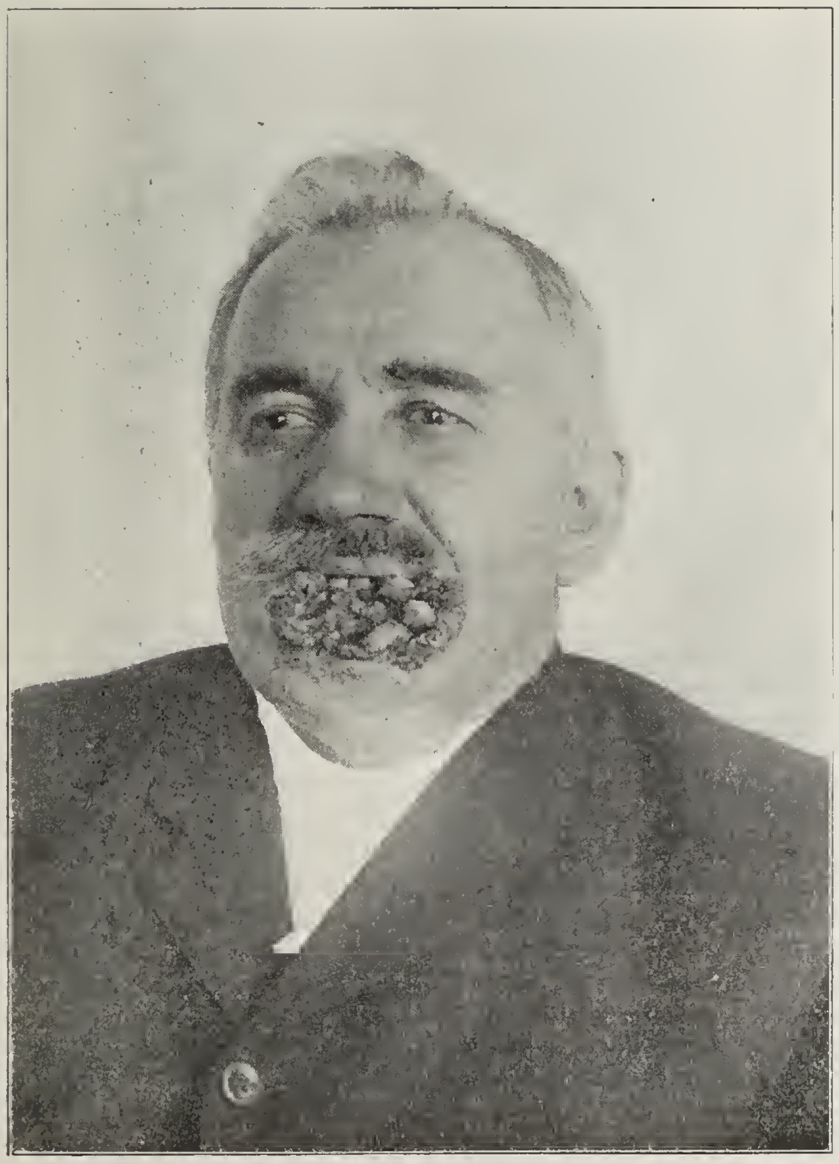

Fig. 18.—Case 5. Carcinoma.

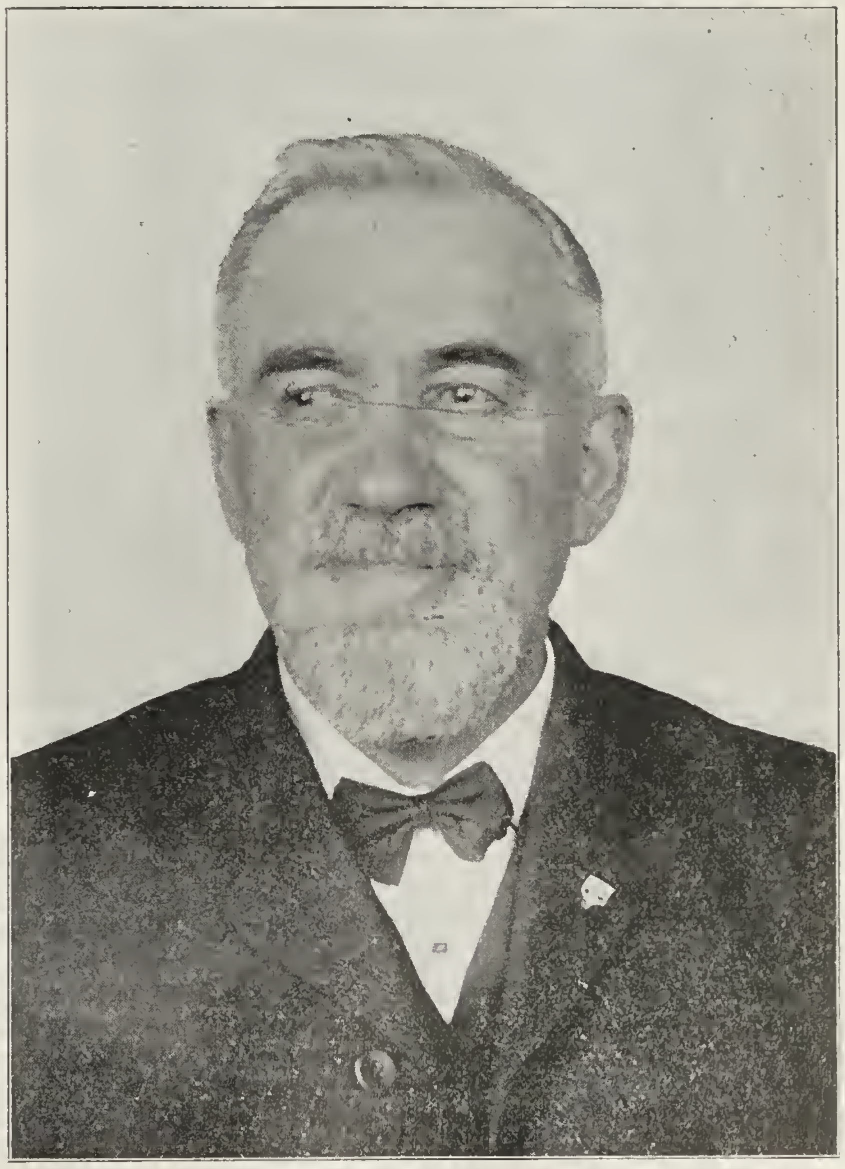

Fig. 20.—Case 5. Eleven weeks after operation.

they are stitched, perfect apposition of both edges is difficult of attainment. Yet this is not a serious matter, for drainage will protect the flaps. The further progress was satisfactory, union prompt and the result beautiful.

A few feet distant from the last three patients one would hardly observe that a serious disease and disfigurement had existed and that a severe operation had been performed on the mouth. The x-ray was advised and used in all cases for several months after operation. Before operation, when there is much thickening and hardening of the tissues, with implication of the glands, its use is harmful.

A CASE OF EXCISION OF THE CERVICAL PORTION OF THE ESOPHAGUS.*

WALLACE I. TERRY, M.D.
Instructor in Surgery, Medical Department of the University of California.
SAN FRANCISCO.

History.—The patient, M. K., aged 44 years, is a native of California and a farmer by occupation. Two years ago he was referred to me by Dr. George H. Powers, of San Francisco, on account of suspected malignant tumor of the larynx. A laryngo-fissure was done and the masses which sprang from the cords were removed, together with much of the mucous membrane of the larynx. The tumor was found to be an epithelioma. Four months later a recurrence necessitated another laryngo-fissure, at which time the wound was left wide open and x-ray treatment of the interior of the larynx was instituted. Despite this, the growth recurred, and in September, 1903, a total laryngectomy was done and the stump of the trachea sutured to the skin just above the sternum. Again, after five months, i. e., in February, 1904, a mass appeared in the scar and was excised. As these operations have already been reported,[1] no further details will here be given.

In June, 1904, the patient returned with a further recurrence in the scar, and on attempting to dissect it out it was found to involve the anterior wall of the esophagus to such an extent that an esophagectomy offered the only hope of its radical removal. The consent of the patient not having been obtained and no symptoms of obstruction of the esophagus having appeared, it was deemed best to defer such an operation. For eight and one-half months the patient lived very comfortably, using the phonation apparatus of Gluck, continuing daily hard work and not losing in weight or strength; then dysphagia became pronounced and he again consulted me. There was a tumor mass about the size of a goose egg in the median line of the neck, involving the hyoid bone above and extending laterally as far as the carotid vessels, and posteriorly the esophagus was invaded, while anteriorly there were two sinuses leading directly backward and discharging thin pus.

In view of the facts that the tumor was slow in growth and that the general condition of the patient was so good, a radical extirpation of the entire mass was advised and agreed to.

Operation.—March 23, 1905, at St. Luke's Hospital, San Francisco. The anesthetic used was ether, given through a tube in the trachea, preceded by a good-sized dose of morphin and atropin. The incisions made were four—two lateral, extending from the angles of the jaw to within an inch of the clavicle and about 3½ inches apart, and two cross incisions above and below connecting these. Through these incisions a block of tissue embracing both submaxillary glands, the remnant of epiglottis, the hyoid bone, the anterior three-fourths of the esophagus, and the thyroid gland were dissected out en masse. The carotid sheaths were first exposed and found to be free of enlarged lymph nodes. Several vessels were here tied off, the principal ones being the thyroids. The two submaxillary glands seemed slightly infiltrated and were removed. Then the hyoid bone and epiglottis were freed by cutting through the muscles above them and opening the pharynx. Raising the mass, the esophagus was split longitudinally to below the thyroid gland. As only the anterior portion of the esophagus was involved, about one-quarter of the lumen was left posteriorly, with the expectation of creating a mucous surface to cover the cervical vertebræ. (That such a result was obtained is shown by the present appearance of the patient.) So much skin was sacrificed that it was impossible to bring the edges together, had such a procedure been considered advisable, so they were united on either side by catgut sutures, in part to the strip of esophagus and in part to the carotid sheaths. The muscles which had been attached to the hyoid bone were drawn together by a purse-string suture, and the mucous membrane at the base of the tongue was attached to the skin margin beneath the lower jaw. The opening of the pharynx was not closed with sutures, but lightly packed with gauze. Small cigarette drains were inserted in both superior angles. Hemorrhage from the operation was insignificant and shock was not pronounced. The next day the dressings were removed and the patient fed through a catheter passed down the esophagus. Thyroid extract, gr. 1 t. i. d., was also begun. Except for some slight infection of the wound and the necrosis of a portion of the mucous membrane at the base of the tongue, con-

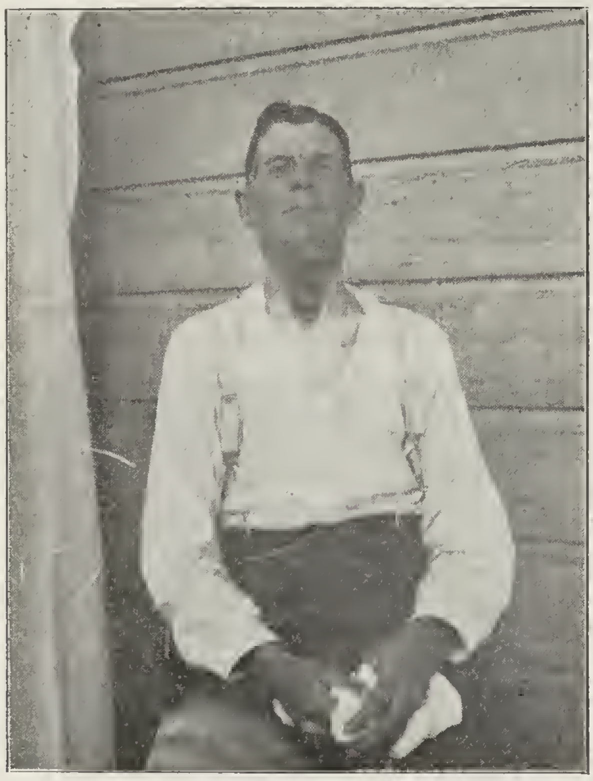
Fig. 1.—View of patient after partial esophagectomy.

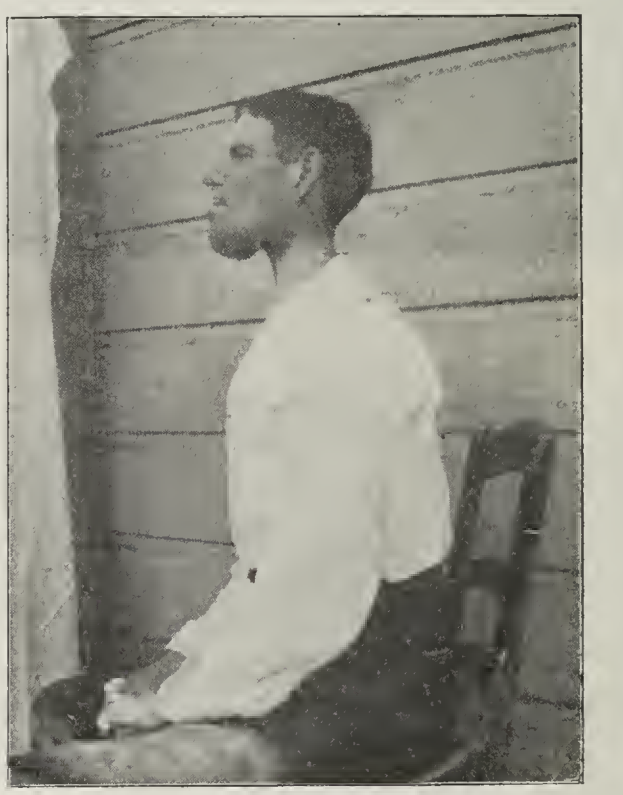
Fig. 2.—View of patient after partial esophagectomy.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] Annals of Surgery, 1904, vol. 39, p. 968.

valescence was uninterrupted. The patient was up and around by the fourth day.

Subsequent History.—July 6, 1905. The patient was seen for the first time in two months. There is a mass just above the sternum which surrounds the upper end of the trachea and invades the esophagus slightly. The lumen of the trachea is only maintained by a silver tube which he constantly wears. He has, however, gained in weight and is but three pounds below his normal weight of 150 pounds. His general condition is excellent and he is able to do all sorts of work about a farm (Figs. 1 and 2). He masticates his food and swallows it by means of a simple funnel-shaped rubber tube, which is suspended above to the opening of the pharynx and below the narrowed portion enters an inch or two into the esophagus. With the kind assistance of Dr. James G. Sharp, of San Francisco, I had made a number of prothetic appliances of various materials and shapes, but we found that the rubber funnel best met the requirements. We also constructed another funnel with a valve, through which a phonation tube can be passed from the trachea to the pharynx. This is not very successful, however, as the air leaks back from the pharynx. Any apparatus which occludes the pharynx brings on a reflex spasm, causing nausea and hypersecretion of mucus and saliva. It is probable that this reflex can be brought under control by further practice, in which case a more satisfactory phonation apparatus can be employed.

I have considered the feasibility of forming a new anterior wall for the cervical esophagus, by means of skin flaps, but have rejected the idea because such flaps would have to be taken from some other part than the neck, and, moreover, they would mask the early evidences of a recurrence.

I did not temporarily close the pharynx, as advocated by some authorities, as I feared that sutures might imperil the integrity of the strip of esophageal mucous membrane, which I desired to leave.

It is to Gluck of Berlin that we owe so much in the technic of these extensive resections of the neck for malignant growths involving the larynx and the esophagus, and I feel that this paper would be incomplete without the mention of his name.

CANCER.*

W. L. RODMAN, M.D.

PHILADELPHIA.

Before proceeding to discuss the question of mammary carcinoma, it will not be far afield to consider the subject of cancer in general, especially its etiology and treatment, about which much has been written within the year, new claims having been made and old theories revived in modified forms. Perhaps the most notable communication on the subject of cancer during the past year was that of Doyen, who claimed not only that he had identified and made cultures of the germ, which he named the *Micrococcus neoformans,* but that he had prepared and used successfully in a number of cases a serum which was antagonistic to the parasite and curative of the disease. His claims have been reported on, favorably and unfavorably, by committees appointed for the purpose. The favorable report, not positive in its character, but mildly so, was made by Metchnikoff, a bacteriologist of commanding rank, but not a medical man, and, therefore, not a practical clinician. Other reports, and they have been more relevant and to the point, are adverse in every respect to the claims of this original surgeon. Attractive as the parasitic theory of cancer is and much as there is in its support, it can not be said that we are any nearer the goal than has been thought many times before. Possibly the strongest argument in favor of the germ theory of carcinoma is its supposed and apparent ever-increasing frequency in all countries where systematic records are kept, and that in this tendency barriers hitherto recognized, racial and geographic, are rapidly being broken down. In saying supposed increase, I do not mean to question the fact that cancer is increasing in America, England, everywhere, though there are many who do, and the observant must admit that this question, like all others, has two sides to it. When we reflect how common appendicitis, gallstones and gastric ulcers are to-day in comparison to what they were thought to be twenty-five years ago, when none of them were operable diseases, and, therefore, not studied with the accuracy with which they are at the present day, it is not difficult to see and to admit possibilities of error in cancer statistics. Who believes that appendicitis, gallstones and gastric ulcers are greatly more common to-day than they always have been? Who believes that they are vastly more common in one section than another? That minor differences, racial, dietetic and otherwise, are operative, perhaps to a certain extent, none will deny, but all will admit that each of the previously mentioned diseases has always existed about as commonly as they do at present. We look for them now and find palpable evidence of what we were formerly blind to. Is it believed that gastric ulcer and gallstones are more common in one section of the country than in other parts of America? Yet two surgeons in a small town of Minnesota have reported 1,000 operations for gallstones and half as many for ulcer. They have been pioneers and epochmakers in gallstone and gastric surgery, and have taught the rest of us how many such cases we have necessarily overlooked. So it may be with cancer. Certainly many cases now clinically and microscopically demonstrated to be cancer would formerly not have been thus recognized and recorded. On the other hand, as many, perhaps more, cases formerly denominated cancer are now easily demonstrated by the microscope to be sarcoma, actinomycosis, tuberculosis, syphilis, etc.

Simultaneously with the announcement of Doyen's discovery, there came a strong article before the Surgical Section of the International Congress at St. Louis, September, 1904, from Professor Orth, of Berlin, combating the germ theory of carcinoma and announcing his adherence to the cellular theory in the most positive way. It is very clear that if parasites are present they are intracellular and play a secondary, and not the chief, rôle as an etiologic factor. They certainly do not and, according to Orth, it is simply impossible that they should, bear the same etiologic relation to cancer that the bacillus of Koch does to tuberculosis, and that pyogenic cocci do to suppuration. The language of Orth could not be stronger and, considering its high source, is, therefore, quoted verbatim:

> In order to produce pus, or tuberculosis, etc., it is sufficient for the pus cocci, or tubercle bacilli, to reach suitable media; to bring about a secondary cancer it is absolutely necessary that cancer cells from the primary or from a similarly created secondary tumor shall reach the particular spot, and there continue their growth. In the case of secondary cancers we have to do with a successful transplantation of cancer cells; in the case of pus foci, or tuberculosis, there occurs a transplantation of the parasites, which do not themselves form the new focus, but they impel the local tissue, without any cooperation of the tissue of the primary focus, to certain pathologic changes. Therefore, there is an important difference between these two classes of phenomena; and one can not conclude, that since in the case of pus foci, tuberculosis, etc., parasites play a rôle, this must also necessarily be the case in the carcinomatous new growths; one can say, however, that if in cancer parasites should happen to play a part, then these

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

> parasites must be of an entirely different kind than those above mentioned, because they must bear the closest relationship to the cancer cells which characterize the growth. I do not consider it impossible for an intracellular parasite to play a part here; but it is impossible for it to play an independent part. It can not possibly in itself be the decisive factor in the new growth; it can not determine the variety and character of the new growth, since the cells themselves, and only they, do this.

The transmission of a cancerous tumor from one individual to another, though often cited as evidence of the parasitic nature of the disease, proves absolutely nothing further than that a successful grafting has taken place. The tumor thus formed is the result of the multiplication of the cells introduced and is analogous in every way with epidermis when transferred from one person to another, as in skin grafting. Until cultures from the supposed germ can, alone and of themselves, independent of cells, cause a primary tumor, it is useless to insist on the infectious nature of the disease. Cases of so-called autoinfectivity prove even less, for here the host has tissues admittedly prone to epithelial degeneration, and it is easy to understand how a successful graft can follow prolonged contact.

The rarity, if not unheard of, infection of operating surgeons by cancerous patients is the strongest possible evidence against the parasitic nature of the disease. Even, however, if the parasitic nature of cancer were established beyond question, we should still be largely in the dark as to other essential etiologic factors. Every one in densely populated cities is probably daily exposed to the tubercle bacillus, and yet only a small minority are affected with tuberculosis.

That the old theory of continued irritation of epithelial tissues is almost, if not quite, necessary to explain the development of cancer I do not question. One has only to reflect that all forms of carcinoma are very generally found at points subject to persistent irritation, viz., the lips, tongue, esophagus, stomach, cecum, rectum, uterus and mammary glands. At least one excellent book has been written during the last year emphasizing the importance of heredity as a predisposing cause of cancer and showing that at least one-third of all these patients give a cancerous history. There is no question, I take it, that, with the passing of the constitutional theory of cancer and the demonstration and acceptance of its local origin, about thirty-five years ago, there began a tendency to minimize the influence of heredity as a predisposing cause. This has been carried too far, just as has been the case with tuberculosis. The disease, of course, is not inherited, but the soil is prepared and made ready should the seed be sown at a time when epithelial tissues are prone to run wild.

That race, environment, temperament, habits, trauma and possibly diet are at times influential may be allowed, but it would seem that more than one cause is usually operative.

PRECANCEROUS CONDITIONS.

Much is written, more is thought, judging by statements one hears made in private conversation and from discussions in medical societies, concerning the precancerous state, yet comparatively little seems based on indisputable facts. We hear a great deal about malignant degeneration of benign tumors, and, while it does occur, though much less frequently than is generally supposed, a careful investigation reveals the fact that very generally it is sarcomatous and not carcinomatous degeneration. Beyond the fact that superficial moles and warts, congenital or acquired, not infrequently late in life undergo malignant transformation, there is little trustworthy evidence.

J. C. Warren[1] reported a series of cases of breast cancer, 100 in number, and in only a single case was there the slightest evidence showing that a benign growth had undergone cancerous change. A small fibroma, the size of a horse chestnut and of twenty years' duration, became the seat of carcinomatous change.

I know of no other series of cases so accurately and conscientiously reported, and nearly all were examined by one microscopist of national repute, Dr. W. F. Whitney. If such malignant transformation can be shown but once in a hundred cases of breast cancer, the region of all others where it is supposed to occur most frequently, are we not, in recognizing its possibility, too strongly accentuating the probability of such change? According to Mr. Raymond Johnson, of London, the general opinion that breast tumors originally benign are prone to degenerate into malignancy, is incorrect and can not be proven. In a series of lectures delivered at the Royal College of Surgeons, of England, Mr. Johnson devoted considerable time to combating this well-nigh universally accepted view. He asserts that adenoma, which is by most authors supposed to be exceedingly liable to cancerous change, never does so, and says that no one has ever reported a case where an encapsulated tumor, as the adenoma, has been seen bursting through its capsule and infiltrating the surrounding tissues. Until he has seen such specimens and examined them macroscopically and microscopically he can not believe they are of common occurrence, if, indeed, they exist at all.

PAGET'S DISEASE.

There is, perhaps, no opinion more general or more tenaciously adhered to by physicians, surgeons and pathologists than the one that eczema or psoriasis of the nipple and areola, the so-called Paget's disease, frequently leads to cancer. The commanding position of the surgeon first promulgating this view at once caused it to be generally accepted and taught. In a paper read before the Surgical Section of the American Medical Association at Baltimore in 1895,[2] I questioned the accuracy of the observation and expressed the opinion that the Paget's disease was secondary to tubercular cancer and that the discharge from within caused the irritation without. Since then I have operated on one patient with Paget's disease, and it was undoubtedly secondary to duct carcinoma. This is the only case of Paget's disease that has ever come to operation at my hands and, in a measure, confirms the theoretical opinion I had formed. This question has become an acute one since the excellent Bradshaw lecture of Mr. Mayo Robson, of London, in December last, in which he made a strong plea for operation in the precancerous stage. His position has been challenged by several, notably by Roger Williams, who states that in only 0.5 per cent. of areolar diseases is there subsequent cancer. Two thousand cases were analyzed. Of the 100 cases of Warren, there was but one in which Paget's disease was or had been present; so at most the association between the two conditions is infrequent, and, when it does occur, the probabilities are that the external areolar disease is secondary to, and not the cause of, duct cancer. This view is supported by the investigations of Thin, Roger Williams, Raymond Johnson and others.

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1. Annals of Surgery, Dec.
2. The Journal A. M. A., July 20, 1905, p. 90.

PHIMOSIS.

As fixed in the professional mind is the belief that phimosis is frequently antecedent to and causative of cancer of the penis. This would seem theoretically to be so, but is it?

Phimosis is too common a condition the world over and cancer of the penis too rare a disease for there to be any close connection between them. Less than 1 per cent., according to the registrar-general's statistics, of the deaths from cancer in Great Britain resulted from cancer of the penis.

In 1898, in my Chairman's address[3] before the Surgical Section of the American Medical Association, I called attention to the rarity of cancer of the penis in negroes. I have never seen a case; none had been treated in the Louisville City Hospital, and the recorder of the health office for the city of Louisville for a period of thirty years recorded no death from cancer of the penis in a negro. I also pointed out that the negro far more than the Caucasian was affected with phimosis; in fact, almost universally so and often to an extreme degree.

The census statistics of the United States for 1900 are even more cogent and to the point and show that, although the death rate for male negroes was 28.6 per 100,000 living, no death resulted from cancer of the penis.

This can not be explained by racial insusceptibility, for the African is more liable to both cancer of the uterus and of the mammæ than the Caucasian.

Further, the Jews, according to Roger Williams, are as liable to cancer of the penis as non-Jews. There is, at most, only a potential relation between phimosis and cancer of the penis.

In his position that gallstones may cause cancer of the gall bladder, I believe that Mr. Robson stands on ground better chosen, and yet we should not forget how rare primary cancer of the gall bladder is and how frequent gallstones are, occurring, it has been said, in 10 per cent. of all persons examined at autopsy. It is doubtless true that in only those cases of infection and chronic ulceration, with its subsequent cicatricial tissue, of the gall bladder that the danger of cancerous implantation is great. Too many such instances are reported by accurate observers to be ignored. It is only of recent years that gallstone disease has been studied with care and accuracy, generally followed by operation, and supplemented by careful microscopic examination of the viscus when cholecystectomy has been performed. That increasing and incontrovertible evidence sustaining Mr. Robson's position will be forthcoming, now that cholecystectomy is so frequently resorted to, I have not the slightest doubt. The statistics controverting this view cited by Mr. Williams and others are convincing to those who rely entirely on statistics, but, as I have already said, it should be recalled that we are almost at the very threshold of any accurate knowledge on the subject of gallstone surgery, and old statistics, while not valueless, are not necessarily conclusive.

ULCER OF THE STOMACH.

While the possibility of gastric ulcer terminating in carcinoma has always been admitted since Cruveilhier's classical work in 1839, it is only recently that such change is believed, anl only now by a few, to be frequent. Opinions have yet to be crystallized on this point. Zenker thinks that practically all cancers originate in ulcers, whereas his pupil, Hauser, estimates that only 6 per cent. of all carcinomata have their origin in gastric ulcers. Mayo Robson performed gastroenterostomy for cancer 64 times, and in 38 (59.3 per cent) there was a "long history of painful dyspepsia suggesting the possibility of ulcer preceding the onset of malignant disease." Of 157 patients with gastric carcinoma operated on by William J. and Charles H. Mayo, 60 per cent. gave a good history of previous ulcer, almost exactly the same number shown by Robson's experience. The opinions of such experienced clinicians and practical surgeons are far more weighty, because they are reinforced and confirmed by direct exploration, than merely theoretical opinions or even observations made at autopsy. I called attention to this point in the Address in Surgery[4] given before the American Medical Association at Atlantic City in 1900. Subsequent experience has taught me to believe that a greater number of ulcers than I even then supposed undergo malignant transformation.

The topography of ulcer and cancer is the same, and there is no room to doubt that many of the latter have their inception in the former. This is one of the strongest possible reasons for the surgical treatment of all chronic or rebellious ulcers, preferably by excision of the ulcer, or, if multiple, of the ulcer-bearing area, pylorectomy. Gastroenterostomy, satisfactory as it is for a time, does not remove the lesion and, therefore, prevent malignant change. I have never doubted that it must, in such cases, either give way to or supplement more radical procedures.

The frequency of cancer of the cecum, and the fact, now pretty well established, that it often begins in the appendix, is an additional reason for removal of the organ when it has suffered repeated attacks of inflammation. I have operated twice in elderly men during the past six months for advanced cancer of the cecum and the evidence was positive in one case, and next to it in the other, that the malignant disease had its inception in the appendix. That cancer frequently originates in the inflammatory and cicatricial tissues about the caput coli, resulting from previous appendiceal attacks, I have not the slightest doubt. So this already fertile surgical region has within the year become of even greater interest on account of the fact that tubercular peritonitis often has its beginning in a tubercular lesion of the appendix, as demonstrated by Mayo, and the further probability that carcinoma not less frequently has its inception in a neglected chronic inflammation of this viscus.

It will be seen later that no one believes more than I in early, as early as possible, and complete operation in malignant disease, but I do not go so far as to advise operation in many of the so-called precancerous states. It is first necessary to show that a precancerous state exists and then our duty becomes reasonably clear. I would not operate on a leucoplakia of the tongue or lips, because such condition has been supposed to invite epitheliomatous change. I have seen hundreds of epitheliomas about the mouth, and have no trustworthy evidence that any, if preceded, resulted from leucoplakia. I certainly would not operate in a case of Paget's disease in a young woman of child-bearing age on account of any tendency *per se* for it to be followed by cancer. I would operate on a chronic ulcer of the stomach, preferably excising it, for the evidence here is more convincing. Further, aside from the danger of cancer, there are other even greater hazards, as perforation, stricture, dilatation, hour-glass stomach, etc.

We have been told that it is also best to operate in the preperforative stage of typhoid fever. Most of us, I fancy, find it difficult enough to make a diagnosis when perforation has actually occurred. If in doubt we should perform an exploratory operation, and the same rule should obtain in suspected cancer, the danger of delay being immeasurably greater.

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[3] The Journal A. M. A., Sept. 3, 1898, p. 491.

[4] The Journal A. M. A., Dec. 1, 1900, p. 1383.

MAMMARY CARCINOMA.

Diagnosis.—He who advises a woman with a tumor of her breast, especially a woman past 40, to wait and see if it be malignant is guilty of an unwarrantable and, therefore, censurable act. If he can not make a diagnosis there are others who can in nearly every case, and in all cases, by a perfectly easy, safe, and quick exploration. Let the public be educated, as they will be in time, to believe that an early diagnosis and prompt operation are both as necessary. I go further, more necessary in cancer than in appendicitis, for the latter may recover, and frequently does, without an operation, the former without surgical intervention inevitably leads to one of the most painful, lingering and loathsome of deaths. We are just beginning in America to see an awakening on the part of laymen to the hazards of appendicitis, and nearly every enlightened person knows something of its symptoms, its dangers, and the conservatism of early operation. Though the surgeon be ever so assiduous and discrete in his efforts to shield the practitioner who has dallied with the case, as is so frequentl done, the patient and his family hold the physician, not the surgeon, responsible for an adverse result. Physicians realize this and, having become more astute diagnosticians in this affection, advise early and, therefore, safe operation. There has been a most remarkable improvement in this respect in Philadelphia in the past few years. My own experience shows but 3 pus cases in 49 operations for appendicitis, most of them acute, since Sept. 1, 1904. That all were successful is largely due to the fact that, in most instances, an early diagnosis was made. In this disease we are far ahead of the English and Continentals. I was surprised to find, three years ago, that cases of appendicitis going to some of the very best English hospitals were sent to and kept in the medical wards until pus formed, when they were considered for the first time surgical cases and transferred. While this is true, however, the English are keen on the subject of cancer; they have studied it carefully and, as a general thing, rank and file, are more alive to the possibilities of surgery for its relief than are we. I am satisfied that practitioners throughout Great Britain are more impressed with the importance of and do make earlier diagnoses in breast cancer than is the case with us.

The late Sir Mitchell Banks, while I was his guest in Liverpool last July, assured me that there had been an enormous change in his practice in this respect in the preceding five years. I saw him do several operations and all were early, what we would call good operative cases. In none was there an evident tumor to the eye, though distinctly so to the touch. Two patients had moderate axillary infection of the lower glands, one little, if any, glandular involvement at all. Remarking on the favorableness of his cases, he told me of the great change for the better which had come in recent years. We can not say that this is only true of Liverpool and its environs where the great influence and teaching of that forceful and charming man were most directly felt. Everywhere I went it was the same, and I now understand, better than I could before, the operative results of English surgeons. Although the radical method of operating for breast tumor was introduced by Moore, of the Middlesex Hospital, in London, in 1867, the English were slower than the Germans, Austrians and Americans to give attention to the teachings of Moore and to put them into practice. Banks, of Liverpool, was an early champion of Moore's operation, which consisted in a large incision, free removal of skin, sacrificing the entire gland in every case, and a free axillary dissection. The muscles were not disturbed, not even the fascia covering the pectoralis major. This step was introduced by Volkmann a few years later. The English were particularly sensitive about the most important step of the operation, a free axillary dissection and removal of all diseased glands and fats. They both overrated its danger and underrated its necessity. Notwithstanding the fact that they were slow to put into practice the teachings of Moore, Banks, Volkmann, Grass and Halsted, their ultimate results were as good as those of the surgeons of other countries. This can only be explained in one of two ways: First, incomplete operations are as satisfactory in their ultimate results and yield as great a percentage of cures as complete operations; second, their patients were operated on earlier. Certainly no one believes the first proposition. At the present time, and it gives me pleasure to record it, as many, perhaps more, English surgeons are doing a thorough operation, usually Halsted's method, than is the case with us.

In addition to the usual signs and symptoms of cancer of the breast, there are two methods by which a positive diagnosis can be made: 1. Aseptic incision into the tumor has been advocated and practiced. It is neither accurate nor safe, and many cases have been reported in which infection of the adjacent tissues occurred through cells and juices thus liberated. It is unquestionably a dangerous practice unless followed by immediate operation. 2. It is much better to get the consent of the patient to a complete operation in all cases where malignancy is suspected, provided both macroscopic and microscopic examination prove it to be necessary. A competent microscopist is asked to be present, and in ten minutes he can give a reliable opinion as to the nature of the growth. During the short period of waiting, the wound should be plugged with gauze, the knife and instruments which have been used laid aside, and the hands of the operator again sterilized. It is best to send either the entire tumor to the pathologist (or to cut a portion from its center). If the report comes back *benign,* nothing further is necessary beyond suturing the wound; if *malignant,* a complete operation, preferably by Halsted's method, should at once be done. I have used this method for many years, have never known ill result from it, and by it, moreover, have, more than once, been saved the possible humiliation of removing needlessly a breast in young, child-bearing women. Twice have I been made to recognize cancer in two of the youngest subjects I have ever operated on, 23 and 27 years of age, respectively, when it had hardly been suspected. One of the best disquisitions on this subject to which I have listened or of which I know was by J. Clark Stewart[5] in his paper before the Surgical Section of the American Medical Association in 1904. I can not understand why this practice is not a more general one. It is practicable, of course, only in a hospital, it is a little troublesome and is tedious on account of arranging for and awaiting the pathologist's report. There is, moreover, I admit, the bare possibility of autoinfection when the surgeon is careless, leaving an open wound and failing to resterilize instruments and hands; but these objections are as nothing, mere trifles as light as air, in comparison to the weighty reasons for an absolutely safe diagnosis, that it may be followed immediately by a complete operation. If we limit the exploration to aseptic incision, closing the wound and waiting indefinitely to remove the breast, if malignant, then the objections that have been made are quite to the point. Such practice can not be too pointedly condemned. Aside from its immediate dangers, this procedure encourages procrastination, and this, in mammary growths, is always hazardous. Removal of the entire growth with capsule, if there be one, in the absence of a capsule the adjacent tissue, then plugging the wound with gauze and waiting ten minutes is an entirely different proposition; yet the two procedures are generally, almost always, confounded, and the palpable and admitted dangers of the one have lessened the popularity and usefulness of the other.

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[5] The Journal A. M. A., Aug. 6, 1904, p. 365.

Prognosis.—There are three conditions, none of them sufficiently dwelt on by authors and, therefore, not appreciated as they should be by operators, materially influencing the prognosis of mammary carcinoma.

1. The pathologic variety of the growth, more than anything else, influences the prognosis for better or worse. The tendency to axillary and other lymphatic involvement is much greater in both encephaloid and scirrhus than in adenocarcinoma; hence, the more favorable results of operations for the latter.

2. The age of its host materially influences the rapidity of a mammary cancer. In the young, lymphatic vessels are numerous and patent, whereas in the old many have atrophied. Therefore, metastases occur quickly in the young, often before they are suspected, and this fact should prevent procrastination and encourage complete removal. For a better understanding of the lymph-bearing vessels of the breast in the young and old relatively, we are mainly indebted to Charles H. Mayo, Poirier and Cuneo.

3. When carcinoma involves either of the sternal quadrants or the inner hemisphere of the gland, other things being equal, the prognosis is worse than when it is in growths suited in the outer hemisphere or axillary quadrants. This is due, of course, to the danger of mediastinal infection. I must here insist, as I have done on former occasions, that malignant growths are more frequently thus situated than is generally believed.

Treatment.—It is easier to understand than to excuse the pessimism still too frequently expressed by surgeons, as well as physicians, as to the curability of cancer by operation. Some, fully abreast with the times in other respects, are far behind in this one. Internists can not be blamed for their lack of faith when surgeons frequently, and teachers occasionally, express doubts as to the beneficent results of a timely operation. There are some doing abdominal operations which were known five years ago, and yet they are apparently ignorant of the possibilities of a rightly done operation for cancer. This is most unfortunate, as it encourages physicians to undervalue the importance of exactness in diagnosis when the growth is strictly local and, therefore, entirely amenable to operation. Moreover, it encourages the running after false gods, the chief of which is the treatment by x-rays, which is responsible for the loss of many valuable lives that might easily have been saved. It is almost inconceivable that relatively so few surgeons are doing a complete operation for mammary cancer. Yet it is eleven years since the publication of Halsted's epoch-making paper containing the most positive and convincing proof as to our duty when dealing with this pitiless enemy of womankind, and thirty-eight years since Moore advocated not so complete a procedure it is true but still a far more radical operation than is frequently seen at the present day. Operations for mammary cancer if performed, as they should be, in the first stage when the growth is small and strictly local, should furnish 75 per cent. and upward of cures. This is even less favorable than operations for cancer of the lip.

In cancers of the second degree in which the neoplasm has become adherent to adjacent tissues and in which there is moderate axillary involvement, the condition nearly always encountered at operation, are curable in 50 per cent. of the cases.

In cancer of the third degree, in which the entire breast is adherent to the chest wall beneath and the enlarged axillary nodes have coalesced into one large mass, possibly adherent to everything about them, but little can be promised. Still, operation should be undertaken, for now and then an unexpected cure is witnessed. I have had one such case myself, and recently Prof. W. W. Keen told me of a case of his in which he at first declined to operate; the cancer was so far advanced. Yet a complete operation gave perfect relief, and the woman died five years later of apoplexy, entirely free from recurrence.

The experience of another year has increased the conviction expressed in my paper before the British Medical Association at Oxford, in 1904, that the supraclavicular glands should be explored and removed, if enlarged, in all cancers situated in the upper hemisphere of the gland. It has been shown by Poirier and Cuneo that a chain of superficial lymphatic vessels passes from the breast directly over the clavicle and empties into the glands in the posterior triangle of the neck. In three such cases treated in the past year all were explored. In one there was unmistakable involvement, in the other two absolutely normal glands and fat were found. Unless there is macroscopic involvement I do not make an elaborate dissection of the neck, as I believe it to be unnecessary and to prolong needlessly an already lengthy procedure.

Extensive as these operations seem, and really are, the operative mortality can almost be ignored, as it is less than 1 per cent.

DISCUSSION

ON PAPERS OF DRS. GRANT, TERRY AND RODMAN.

Dr. J. G. Sherrill, Louisville, Ky., said that two years ago he presented a report of two cases of cancer of the intestines and was surprised to find that this condition is quite frequent. The resemblance of these cases to appendicitis is often noticeable. The glandular involvement which so frequently follows cancer is not present in carcinoma of the intestines. Sarcomata of the gut shows involvement of the lymphatic glands in the neighborhood, which is not generally believed to be true. He agreed that exploration of the breast is a dangerous procedure unless the breast is removed immediately thereafter. He has abandoned these explorations. Making a diagnosis before operation is very important, and he operates by beginning always in the axilla. If this were done constantly better results would be attained. An incision may be made into the breast and the procedure mentioned by Dr. Rodman followed with good results.

Dr. J. E. Boucher, Hartford, Conn., reported six cases of resection of the bowel for cancer; all the patients recovered from the operation, but one died later from a recurrence. Five of the six operations for resection of the bowel were for cancer. Five of the operations were performed without any contrivance save a needle and silk, the other with a Murphy button. Five patients are living after intervals of from two months to three years. All have been comfortable. Two of these cases were advanced, one involving the abdominal wall; in one which seemed hopeless the patient lived for six months and died from recurrence. It would seem that it is much better to resect and to remove cancer of the bowel, even at a late period, if at all operable, rather than to do a simple anastomosis around the growth, as the latter procedure at best promises very little in the way of increased length of life and, after all, is quite as dangerous as a complete removal with anastomosis. These cases all seem to indicate that complete removal of the growth is advisable on account of the slow return of some varieties of malignant growth involving the intestines.

Dr. C. O. Thienhaus, Milwaukee, Wis., does not remove a wart because it might become malignant. For cosmetic reasons, or if inflammation or irritation is present, warts should be removed. Since it has been definitely proved that all the lymph channels of the breast unite on the deeper fascia, it has become an absolutely essential factor of operative procedure to remove the pectoral major and minor muscles, and it has been somewhat surprising to Dr. Thienhaus that an attempt has recently been made to save a part of the pectoralis major muscle for the purpose of supporting the function of the arm. Furthermore, since it has been shown recently that lymph channels to the epigastric region exist which must be held responsible for the not so seldom found recurrence in the epigastric region it may be essential to extend the incision to the linea alba for the purpose of dealing with this lymphatic extension. In regard to the diagnosis of cancer of the breast, if there should be any question at all before operation, Dr. Thienhaus believes that a freezing microtome used during operation may sometimes give us the needed information.

Dr. J. J. Hamilton, Caldwell, Idaho, said that he has an old man under treatment for cancer of the rectum, who suffers very much. He does not expect to get well, but he wants to suffer as little as possible, and Dr. Hamilton would like to know what to do for him. He does not think a man of 71 could stand an operation. Although the patient is still living, Dr. Hamilton would like to have some idea of the probable length of time he is likely to be able to hold out. Would the creation of an artificial anus be wise?

Dr. J. Clark Stewart, Minneapolis, Minn., said that he knows of no operative procedure so generally neglected as a properly devised one against lip epithelioma. Epitheliomas are disseminated through the lymphatics like other carcinomata, but much more slowly. Physicians can never say by any examination that dissemination has not yet begun, and for this reason it is imperative to remove the lymphatics in every case, just as is done in the Halstead breast operation. An ideal operation against malignant disease must include certain factors. First, sufficient tissue must be removed immediately about the malignant growth; second, all lymphatics and nodes must be removed without section in one mass with the primary growth; third, a suitable plastic procedure should be done so as to secure union by first intention. Dr. Grant's operation fails in violating the second point in cutting across the lymphatics, as they run downward from the lip. Dr. Stewart has been doing and teaching for the past six or seven years a somewhat similar operation which avoids this fault. He carries the deep incisions on each side of the growth down to the point of the chin, and then backward and outward under the line of the jaw far enough to expose the submaxillary glands. These lateral incisions are then joined by one cutting the skin only, and the whole skin flap is dissected free down to the hyoid bone. From this point the connective tissue, lymphatics and lymph nodes are dissected upward in one piece, including the submaxillary glands, and the accompanying lymph nodes on each side, and last the portion of the chin between the original incisions, including the epithelioma, is cut loose from the underlying jaw. He finishes the operation as Dr. Grant has described his procedure and finds the cosmetic results very good, indeed. With this operation done early, recurrences should be very few, indeed, a striking contrast with the V operation, which deprives the patient of all chance unless the lesion is purely local.

Dr. A. McGlannan, Baltimore, said that in cancer of the breast we have about reached the limit of operative interference. Any improvement in ultimate results will be due to earlier diagnosis. Every single tumor of the breast should be explored. If it is benign, it could not be removed at a better time. The recognition of cancer by exploratory incision can be done by the naked eye. If the appearance of benign tumors is known a malignant one can readily be recognized, although in the breast the recognition of parenchymatous hypertrophy may be difficult. With practice, however, this can be learned, and it avoids waiting for the pathologist. The naked eye is just as good as the frozen section, and is safer because instantaneous. When cancer of the breast is found it should be immediately operated on. The glands of the neck should be taken out in all early cases. If the nearest chain of glands is not removed the operation for cancer is only palliative, and a cure is more certain to result if the glands are removed. One symptom of onset in cancer of the breast is pain, and pain in connection with a lump in the breast is frequent, so that women come complaining of the association of these symptoms. Dr. McGlannan would not make a diagnosis of carcinoma simply from a pain in the breast, but if the pain is present for three months, and there is no tumor to be found, the physician can safely say it is not cancer, but probably neuralgia or something of that kind.

Dr. Martin, New Orleans, recently was surprised to find that Dr. Warren's statistics give cancer of the breast as being rare in the negro, as statistics in New Orleans show that they are about equal; although the negro is less liable to come for treatment. Dr. Martin believes the negro is more likely to have this disease than the white. He has seen about 200 patients and operated on 80, but every now and again he has to refuse operation. If one only stops to think of the ramifications of the lymphatics, operation would be done only with the idea of relieving pain. The absolute necessity of removing all neoplasms of the breast as soon as they are discovered is a good point, and Dr. Martin called attention to this, as he does not think they should ever be allowed to remain. Physicians and the public alike should be educated. The gynecologists have educated their patients to the importance of tumors, and surgeons should do the same.

Dr. A. H. Levings, Milwaukee, said that it is pretty well established that traumatism, chronic irritation and chronic inflammation are at least predisposing causes. It has seemed to him that the long continued hyperemia incident to these processes with the return of the cells to their embryonal state, their rapid proliferation and unstable condition, might explain the sequence of events in many of these cases. In three cases of cancer of the penis that have come under Dr. Levings' observation there was in each a long adherent, troublesome prepuce. He could but think in these cases that the long-continued irritation was at least a predisposing factor. In regard to the relationship between cancer and tuberculosis, it has generally been held that there is a certain antagonism between them. This seems to be incorrect, for postmortem records show that healed tubercular lesions are quite frequent in persons who have died of cancer. The family history of two brothers who consulted Dr. Levings a year ago with carcinoma of the stomach gave him food for reflection in regard to the relationship between cancer and tuberculosis. In the family there were seven children, with two, probably three, suffering from carcinoma of the stomach. The mother died at the age of 39 with pulmonary tuberculosis. The father remarried. The second wife had eight children, and she and the children are all well up to the present time. Since that, in so far as possible, Dr. Levings has carefully taken the family history of every case of carcinoma that has come under his observation; 70 per cent. show a family history of tuberculosis, whereas in non-cancerous individuals a tubercular history is present in only 25 per cent. of the cases. Some patients showed the two diseases to have been present in the same individual, either at the same or at different times. In one there was, when 5 years old, a tubercular inflammation of the hip joint, with abscesses and destruction of bone. The process healed after two and a half years. At 40 the patient had carcinoma of the breast. Another patient had chronic inflammation of the knee joint when a girl. The process became arrested after a year, and at 50 the patient had cancer of the breast. Two patients had lupus, and after several years an epithelioma was engrafted on the lupus patch. Dr. Levings thought that Koch's bacillus, working within the tissues even of the ancestors, might leave such a cellular weakness as to predispose the individuals subsequently to the cancerous condition.

DR. EMMET RIXFORD, San Francisco, declared that there is no question of the truth of the dictum of Watson Cheyne, "the patient's chance is in the first operation," and, therefore, the earlier and the more radical the removal of the cancerous breast the less the probability of recurrence. Patients with recurrence are not altogether in a hopeless condition. It is a matter of common experience that when the axilla is carefully cleaned out, even if it contained extensive metastases, further dissemination in that direction is frequently stopped. The majority of recurrences take place in the scar, but a considerable number alongside the sternum. Dissemination toward the mediastinum is stopped by the mediastinal glands, and it would seem to be possible in some cases to remove these glands sufficiently radically to prevent further extension, just as in the case of axillary metastasis. It has been Dr. Rixford's lot to see a number of cases in which the only detectable recurrence after radical operation was at the edge of the sternum. Resection of a portion of the chest wall in these cases showed that the tumor had penetrated the wall, but had not involved the lung or pericardium. In three cases mediastinal glands and fatty tissue were resected. In four cases in which resection of the chest wall was performed two patients are free from recurrence at the end of six months, and one at the end of two years. In five operations there was no mortality and no serious trouble incident to the acute pneumothorax.

DR. F. W. PARHAM, New Orleans, called attention to a plastic procedure described in the *Deutsche Zeitschrift für Chirurgie* a few months ago. This procedure is that of Schulten and consists in borrowing from the upper lip a sufficient breadth of mucous membrane and submucous muscular tissue attached at both commissures and containing the coronary artery, distinctly pulsating when loosened and grasped between two fingers. This flap, when sufficiently mobilized, can be easily brought down with a twist of only 90 degrees and approximated accurately to the flap which has been previously brought into place by any method the surgeon may prefer. Dr. Parham did this in one case with admirable approximation and complete covering with mucous membrane, but unfortunately a mistake in technic, in dissecting too narrow the outer part of the flap in order to bring it down with less strain, resulted in cutting of the coronary artery and the death of part of the flap. This can be avoided by steering widely when approaching the commissures, from the midline of the lip in making the two parallel incisions which mark the width of the flap. It might be supposed that the upper lip would be much damaged, but it is remarkable how little appears to have been removed when the margins of the gap in the upper lip have been accurately approximated. Dr. Parham said that in New Orleans the now well-known Doyen serum was given a rather extended trial in some eight cases. Dr. Doyen furnished enough of the serum for test by a commission to be appointed by him. The results will be given in fuller detail on another occasion, but the conclusions in these cases were absolutely negative.

DR. E. M. SALA, Rock Island, Ill., reported the case of a man who cut his throat with a razor, cutting through the larynx and esophagus, but missing all the important blood vessels. He was brought to the hospital after having been sutured up on the outside with silk. Forty-eight hours after the first sutures were inserted the entire wound gaped open; it was then sutured with silver wire. These sutures also gave way and they had to deal with an open wound. The man was fed through the neck with a tube for two weeks. He wrote a note, asking if milk was all he was going to have to eat, and was told "yes." He wrote: 'Well, I can take that without the tube." A nurse brought him a pitcher of milk and he doubled his chin close to his chest and drank the entire contents of the pitcher. From this time on the tube was abandoned, and by closing the false opening in the esophagus the man was soon able to eat anything. He remained in the hospital six weeks and the cut opening in the esophagus entirely healed up. He left the hospital with a small external opening in the larynx, which no doubt also healed soon afterward.

DR. JACOB FRANK, Chicago, stated that he had a case similar to Dr. Terry's about five years ago, which he exhibited to the Chicago Medical Society. He operated for cancer of the larynx, removing the larynx and the esophagus. The important point is, that after the operation the patient was able to articulate sufficient to be understood in a room with a seating capacity of 300. There are some other cases on record of a similar nature. The first person to have called the attention of the profession was Dr. Solis-Cohen of Philadelphia. In Dr. Frank's case the operation differed in one respect, as he tried to close the wound, but Dr. Terry did not. It might possibly be that this was the reason for the re-establishment of false vocal glands. He could notice in the granulating of the wound the formation of little bands which took the place of the vocal cords.

DR. CHARLES A. POWERS, Denver, did not agree with Dr. Rodman that cancer is not liable to develop at the site of leucoplakia of the tongue. He thinks that a patient at or beyond midlife with a persistent lingual leucoplakia is in greater danger of cancer sooner or later than one who has no such lesion.

DR. RODMAN said that it is always a disadvantage to have the hands of the assistant in the way, and he has a scheme for controlling hemorrhage in harelip operations which could very well be employed here. It makes the operation practically bloodless. He said that Dr. Stewart misunderstood him; he said nothing about the removal of the glands. All operations should be supplemented by removal of the glands, and he never operates on the penis without exploring both groins. Dr. McGlannan spoke of pain in mammary cancer, but pain is no more a feature of cancer of the breast in the early stages than it is of an adenoma or a fibroma. That is the reason why early diagnosis is not made more frequently than it is, as people expect there should be pain. It is only when the cancer has become adherent or ulcerating, or both, that there is pain, and if one waits for pain the propitious time for operation has passed. Dr. Rodman agreed with Dr. Rixford that resection of the costal wall may be necessary. He had one such unhappy experience, where he resected a part of the sternum. This is only justified in a small percentage of cases. He did not say that leucoplakia was not followed by cancer of the lip; he said it is not followed by cancer so often as to make it wise to operate in all cases of leucoplakia.

DR. GRANT said that there is no difficulty, by any of the methods in use, in removing all the diseased tissue of lip, cheeks and chin. It is a more serious problem to secure suitable flaps, and to make a good, presentable and useful mouth. If the flaps should, as might happen in all methods, be too broad, it is easily remedied by retrenching the flaps. The hemorrhage in the first stage of the operation, in bad cases, he controls partially by tissue pressure forceps. The posterior blade, long and conical, is thrust through the cheeks or tissues from inside, and clamped to the broad anterior blade. The temporary ligatures suggested by Dr. Rodman are always convenient and useful. Dr. Grant cut both facial arteries in three of the cases reported, and it did not interrupt the satisfactory healing of the wounds. In the upper lip the diseased tissue is excised by same method as the lower, and the triangular flaps are formed by making the incisions from the superior angles of the wound, upward and outward. Only very exceptionally is the upper lip the primary seat of disease. In the usual condition he has an absolutely reliable, fixed point for the flaps in the preservation of the chin tissues, to which the flaps, with a mucous membrane already intact, are secured; and when necessary for enlarging the mouth (to fit loosely the first three fingers of the hand when inserted flat), the operation at the corners of the mouth is ample and gives a ready, easily applied mucous membrane to the vermilion border of the lips. It is better than the procedure of Langenbeck, in which the mucous membrane is taken from the upper lip. In order to make this flap secure it is best to leave the base or stump adherent to the upper lip while adhesion is taking place to the lower. When this has occurred the stump is freed from the upper. This necessitates fixation of both lips in the meantime, and necessarily interferes with feeding the patient, and with cleaning and irrigation of the mouth. A detached flap is never so certain to adhere and heal satisfactorily in this locality; while the operation at the corners of the mouth accomplishes the double purpose of perfecting the size and shape of the mouth, and giving a well nourished, certain covering to the lips, and interferes in no way with the care of the parts and administration of food during the healing process. The suggestion to remove lymphatics with the primary growth *en masse* is impractical in this locality. Neither is it important, as the submaxillary glands, which are the new foci of infection, are promptly extirpated. The *x*-ray was used in all these cases except No. 3, and aggravated the condition in all, causing a more acute inflammatory condition, and, Dr. Grant is satisfied, more rapid extension of the disease. He believes this true in all cases except when the disease is recent and superficial in extent, while after operation it may be useful in preventing recurrence, and for this purpose he advises its postoperative use in all cases. Dr. Grant said that he purposely refrained from discussion of the causation, as he has nothing new to offer. All the patients were inveterate smokers, using the pipe, except the last one, who for twenty years had displaced it with a cigar. Dr. Grant has never doubted the evil influence of persistent irritation as a causative factor in the malignant degeneration of an ulcer, or tissue, originally benign; and he does not think it inconsistent with the existence and influence of a specific cancer germ.

Dr. Terry declared that we need something to urge us to more radical measures. He does not feel discouraged by the condition of the patient which he showed, and still hopes to be able to do something further of value to him, perhaps by resection of the upper part of the sternum.

A PLEA FOR NATIONAL AND LOCAL BOARDS OF SCHOOL HYGIENE.[*]

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The altruistic ideal is the noblest conception of man, and preventive medicine is its most practical application. Thus, altruism is the natural rôle of physicians, in that it is their natural function and their duty to be guardians of the public welfare; to see to the eradication of diseases and their attendant evils; to influence public opinion, public sentiment and public action in all questions pertaining to the health and education of the people, and to make the public familiar with the causes of disease, degeneracy and crime, together with the most important measures for their eradication and prevention.[1]

Science has clearly demonstrated that much of the disease and misery of mankind is avoidable—that disease is a terrible punishment inflicted on the human family for living out of harmony with the laws of health. When one pauses to consider the enormous annual loss to the government and to society through disease; the terrible suffering attended by the temporary or permanent, partial or complete disability of individuals; the tendency to degeneracy and crime in succeeding generations; the deaths, the losses in the business world, due to the serious interruption to business; the money value to the government from the wasted lives that are needlessly sacrificed, it becomes evident that it is the duty of the government to protect its people from these perils—preventable diseases.

Let us consider, briefly, the enormous loss to this government through disease. It is estimated that the minimum value of each wasted life is, at least, one thousand dollars to the government. Professor Osler estimates that of the seventy million people of these United States there are always one million two hundred thousand people afflicted with tuberculosis, out of which number at least one million will die of this disease. Thus the value of lives lost from tuberculosis would be upward of ten billion dollars—and this does not reckon with the physical disabilities that appear in the offspring of parents so afflicted.

Then, too, think of the numerous other preventable diseases which collectively claim a much greater number of victims each year, and some conception will be formed of the appalling loss to the government through disease.

Because of the relation of school hygiene to the science of human development and to preventive medicine, and because of their interrelations with the problems of government and of law, of the business world, of criminology and of sociology, there are no subjects of such vital importance to mankind as the education and hygiene of the developing child.

All through infancy, childhood and youth, there is a struggle for existence, due to the development of the alimentary and other systems. During this time, great strides are made in physical, intellectual and moral growth. It is a period of stress, in which the vital resistance is lowered against the inroads of disease; a time when permanent disability is most likely to be incurred.

Every human adult is a composite result of heredity, prenatal influence, environment and disease. Consequently, because of the unfavorable heredity and home environment of many children, the close connection between their mental and their physical development, and the fact that these children spend a greater part of their waking hours at school—in cities the average school year is two hundred days, in villages one hundred and eighty days—it seems reasonable to impose on the public schools of our country the burden of ameliorating these conditions. Thus, not only does school hygiene become intimately associated with the evolution of the individual, but it seems also to be one of the most important factors in the problem of education and of preventive medicine—indeed, of society itself, since the progress and vigor of nations largely depend on the education and environment of childhood and youth.

For the year ending June 30, 1902, the Commissioner of Education reports that the total enrollment in schools and colleges, public and private, was 17,460,000. Of this number, there were enrolled in public institutes, supported by taxation and funds belonging to states and municipalities, 16,041,016. Moreover, in addition to the enrollment in schools and colleges, as given above, there were pupils enrolled in special institutes, more or less educational and practical in character, 620,840, making a total of 18,080,840. Thus between 20 and 21 per cent. of the entire population and about 72 per cent. of the entire number of persons from 5 to 18 years of age are enrolled in the common schools of our country —all of whom are receiving the education and physical development that shall determine their value to society and to themselves.[2]

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[*] Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

[1] I have quoted rather extensively from my paper, "A Study of School Hygiene, Development of Children, and preventive Medicine," Amer. Med., Nov. 7, 1903. Again I must acknowledge my indebtedness to the various authorities from whom I have imbibed many of these ideas.

[2] The aggregate of common school property is more than $601,571,307 in 1902, its increase being $25,000,000 over the year 1901. Expenditures for sites, buildings, furniture, etc., $41,758,488, or a percentage of 17.7 per cent. The population for 1905 was 84,000,000.

Each year adds to our knowledge as to the causation of disease. When we think of the homes from which many of the children come—homes which are hotbeds of disease and filth—and that these children bring in their clothing and on their bodies the germs of disease, body vermin, and other insects, we must realize that if all matter rich in pathogenic bacteria and insect dangers probably none can equal or compare with the average dust of school rooms as a source of the preventable ills from which we suffer. Then, too, there are other evils of a faulty school hygiene due to defective heating and ventilation, to overcrowding, to the mechanical irritation to the respiratory apparatus from the dust, or from dirty lavatories, to eye-strain, ear troubles, coryza, catarrh, infectious diseases, postural diseases incident to faulty school furniture and to faulty positions in sitting, writing, studying and standing; all of which may cause avoidable diseases leading to permanent disability, degeneracy, crime, or even to death.

Is it not, then, imperative that a better system of school hygiene be instituted in order that children may receive their "absolute civil rights"—the right of personal security and protection from the government against avoidable evils which cause more or less suffering and permanent injury to their physical or moral health—preventable injuries against which neither parents nor children have any redress; and also that they may receive every opportunity to develop sound minds and sound bodies by means of a school environment, education and physical training that shall minister to their maximum development and place them in right relation toward society?

The defects of the present system are: The ignorance of the average school board of special technical and scientific knowledge as applied to the science of human development and progress; the phenomenal extravagance incident to this ignorance and to so many separate managements; the want of organization; the lack of proper medical supervision of the school hygiene and of the needs of the individual children, and the ignorance of parents and teachers of the requirements of children for their best physical development. Is there not, then, a need of radical reform? To bring about this reform will require long, intelligent and persistent effort on the part of the medical profession, that the public may be made to realize that the individual welfare depends on the general welfare and vice versa, and that no one class can be made to suffer without producing a certain reaction on every other class.

The momentous question, then, becomes: What are the changes essential to the evolution of a better system? They are many and radical. This evolution of a better system implies a practical working ideal very much in advance of the present conditions. There must be an elimination of those elements inimical to the social welfare and such improvements as may be found expedient, if the school ideal is for every child to attain perfectly his maximum development, normal impulses, and such self-control that he may become a useful member of society. It is, then, self-evident that the essential reform needed in the evolution of a better system is the practical application of preventive medicine and that broadly educated physicians must become the chief directors and supervisors of such a system.

If preventive medicine is to assume its legitimate place among the social forces, some method of procedure must be adopted which shall place physicians in authority over these matters. This can only be brought about by organization, local and national. To this end, I would submit suggestions as to the establishment and work of such an organization, leaving the details and perfecting of the system to be worked out by the profession and by the public.

Such a system should be supported by the general government and not by the school fund; therefore, there should be a national board of school hygiene and preventive medicine to be composed of representative, nonpartisan physicians, selected because of their general efficiency and knowledge—the commissioner of education and the commissioner of public health, when we have one, as members *ex officio*. It should be the duty of this national board to make investigations in school hygiene, in education in its relation to human development, and into the causes and means of prevention of contagious and infectious diseases and of degeneracy and crime; to indicate measures of national importance in preventive medicine; to frame laws for the protection of the public health; to be the center of information of all matters relating to the development of children, school hygiene and public health; to be an authority on the scientific and sanitary construction of school buildings and school furnishings after the most approved pattern, and to furnish architectural plans and estimates of cost for the construction of these school buildings and their furnishings. It should superintend the civil service examinations of all physicians employed in the various departments of the service, and it should have charge, also, of the examination for school janitors; afterward issuing certificates to the successful candidates for examination; and it should publish circulars and bulletins of information to be distributed by the various departments of the service, etc. The several departments of investigation of such a board should be assisted by advisory boards composed of intelligent and broad-minded men and women, experts in the work of their special department; men and women, in a word, who have attained to success because of their special ability in their own line of work.

A state board of school hygiene and preventive medicine should be established whose duty it should be to supplement the work of the national board. It should supervise the choice of location and the construction of the school buildings of the state on the best hygienic principles and plans outlined by the national board; it should help the national board to frame laws for the protection of school children and the public health, and it should promote the necessary legislation to make them effective in the state; it should have general oversight as to the efficiency of the work of the physicians who hold public offices under this system; it should have the power to close insanitary schools; it should determine the fitness or unfitness of incorrigible children for attendance in the public schools; it should be the final repository of all statistics and records of children after they have left the schools; and it should make a special, careful, systematic classification and study of these records with reference to their sociologic value in the science of human development.

The local board of school hygiene and preventive medicine should be composed of non-partisan and successful business men and physicians, and the municipal commissioner of health, or health officer, should be a member *ex officio*. It should be the duty of this board to supplement the work of the national and state boards; its duties should be such as are ordinarily performed by the school board of the municipality and not otherwise provided for by the state and national boards. It should be the repository of the individual records of all school children while they are enrolled in the public or other schools; and when the children leave school permanently it should forward these records to the state board, where they should be kept on file during the lifetime of the individuals whom they concern. Should the child leave the municipality during school life, his record should be transferred to his new school board of hygiene and preventive medicine.

Another important feature of this system should be the establishment of a complete federation of all boards of school hygiene and preventive medicine in the state with the state board, with the local, state and national boards of health, and with the state and national boards of education. Such a federation should be so perfect in all its details that the work of one board would supplement the work of the other in all matters of common interest; and if for any purpose the school record of any given individual be desired for the department of justice or for scientific research in sociologic problems it should be possible to obtain it on very short notice.

As the education of teachers in the principles of hygiene and preventive medicine must necessarily be very superficial, and as the school age includes the period of greatest development, during which the children must spend a large part of their time in the school buildings, it would seem imperative that if only one principal can be afforded in any school building this individual should be a graduate physician from some reputable medical school. It is certainly to be supposed that the well-qualified teacher is better able to supervise the general education of the child without the constant oversight of the superintendent than to care for its physical needs in accordance with the principles of hygiene and preventive medicine without medical supervision.

The work of a medical principal, apart from the oversight of the general educational work of his teachers and co-operation with the local and state superintendent of schools, would be to keep a vigilant guard over the health of the pupils and thoroughly to examine physically and otherwise every applicant for admission to the school, after which examination the grade, class, exercises, diet, amount of sleep, amount of study, etc., should be prescribed, and, if there should be any disease, malformation or other physical defect present, requiring the services of a physician, the child should be referred to the family physician for treatment, and such treatment should be insisted on as long as need be. It should also be the medical principal's duty to inspect the hygiene of the school building and of the grounds and to supervise the heating and ventilating systems and to control the work of the janitors. He should have the power to close insanitary schools. It should be his duty to report to the local health board officer all pupils who are absent from the school because of contagious diseases, and no pupil absent from such cause should be allowed to return to school without a written permit from him. All private schools should come under these public-school regulations.

There should be some systematic plan followed in making the physical examinations admitting pupils to the schools. The following outline is only suggestive of the scientific possibilities which this work opens up for the promotion of a social ideal through scientific investigation and the application of preventive medicine in the development of children.

Such an examination should ascertain the hereditary data. This should include the nationality, family record and the home environment, and would aid in determining the relative importance of any physical abnormalities found in any individual case. It would also aid in determining the probable reaction to educational influences of those who are naturally weak, backward, degenerate, depraved and criminal. The first physical examination should include the Bertillon system of physical measurements and descriptions, modified and expanded until they best meet the morphologic, physiologic, pathologic and sociologic requirements. This and subsequent examinations should investigate the physical states as to diet, quantity and quality; condition of digestive system; general metabolism; condition of the blood and organs of circulation; condition of excretory organs; the response of the muscular system to dynamic tests; the reaction and reflexes of the nervous system; the physical and neurologic activities, including the physiologic data, which deal with the fundamental elements in the character, morality, education, religion, reason, memory, and the sentimental bias; the relative capacity of the various organs to the physical demands made on them; the pathologic data, which includes the summing up of all the abnormal findings; and the prognosis as to the probable development of the individual along normal or abnormal lines. The fatigue of children at various times during the school day should be registered by means of the ergograph.

There should be a county medical superintendent whose duty it would be to visit the country schools and perform such duties as would devolve on the medical principals and superintendents of city schools. He should also give out literature and printed instructions for the aid and education of the parents, that they might know the best home care to give their children.

Further, to aid this campaign for the maximum development of our school children, it would be necessary to enlist and organize the various social forces to help on the work of preventive medicine. This means education—the education of parents and others as to their responsibilities toward the children and the public.

Club women should be interested in forming health societies and sanitary squads for the inspection and improvement of the neighborhood and home environment of weak, backward, sick, degenerate, incorrigible and vicious children, and to raise funds, that those needing special medical care may be provided with the means for such treatment. There should be efficient factory regulation and inspection regarding minors; and dependent, sick children should be provided with efficient medical, surgical and hospital treatment. So, too, discrimination should be practiced in favor of the nervous, weak or backward child. When children are known to be subjected to constant ill treatment from their parents, measures should be taken to have the parental rights forfeited.

The pamphlets of instructions on home and public hygiene and preventive medicine, treated in a popular manner, issued by a national board of school hygiene and preventive medicine, should be distributed to parents through the medium of the local boards of school hygiene and preventive medicine. Each school should be made a distributing center, from which these pamphlets would be carried by the children to their parents.

There should be printed forms, or circulars of information, on the special hygiene corresponding to the normal development of every period of school life. These periods should be divided into six months or a year each. These circulars should be given, one to each child, according to his age, by the medical examiner, for comments in regard to the care needed in any given case. In this way there could be brought about intelligent co-operation between parents and educators.

Finally, special provision should be made by the state for the separate education of the idiotic, depraved, insane, epileptic and the natural criminal.

There should be industrial homes for the incorrigible, friendless, and homeless girls and boys; a state board of correction and charities; a public school for dependent children; a public school system of compulsory education; and more stringent laws for the protection of the health and lives of children. Such a medical supervision of schools and school children should do away with the closing of schools in epidemics and should be one of the most important measures for checking the spread of contagious diseases. Crime would be diminished, because those children with the stigmata of degeneration and the natural criminal instincts would be discovered early in life and every effort known to science, ethics, and education used to reclaim them. Moreover, those who are subjected to frequent punishment would have justice done them if physical causes were found to be the basis of their various troubles; nervous children would not be forced to practice music or other nerve-racking exercises, tending to the irreparable injury of their nervous systems and general health. So, too, diseases would be discovered in their incipiency and the curable pathologic processes checked or cured, thereby saving many to lives of usefulness.

Such a system of school hygiene and preventive medicine would not only develop the mental, moral and esthetic status of children and transmit a better heredity to posterity, but it would also put physicians in their true professional relation to society and open up a very broad field of usefulness to an overcrowded profession.

DISCUSSION.

Dr. C. F. Wahrer, Fort Madison, Iowa, said that Dr. Smith's paper reminded him of a question that once came from an unknown place: "Cain, where is thy brother Abel?" And the answer was, "Am I my brother's keeper?" Physicians, school teachers, and a good many other people are always trying to do something for the betterment of mankind, even if it does make a strong hit at their financial success. It is a question how much we are responsible for our fellowmen, in how much we are our brother's keeper, and how much we are bound by the ties of humanity to better conditions in general, and how much we can really do. It seems in our law-ridden country, which has so many laws on its statute books, that our laws are increased and modified in various ways, and yet the Utopia of our ideas has not been reached. Legislators usually do nothing they are not compelled to do. The legislator would far rather introduce a river and harbor bill, in which millions are involved, than to see that a thousand or fifteen hundred or two thousand dollars are appropriated for some such schemes as that advanced by Dr. Smith, and he does this because he is importuned to do it. Dr. Wahrer advised adopting the methods used by those who want river and harbor appropriations, or things of that sort, namely, addressing county senators and representatives or the national representatives and senators in Washington. Dr. Wahrer then commended the organization of the profession in the United States, and said that the people must be taught that there are physicians who can do more than sell compounds and make visits at a stated price. He said that the physician must be a factor in the community for morality and for everything that stands for the betterment of mankind.

Dr. A. W. Fairbanks, Boston, agreed with Dr. Smith that there is great opportunity for work in the schools. He belongs to a city that was the first to introduce medical inspection in the schools, and is one of the physicians appointed by the Board of Health for this work. He said that, although there has been medical inspection of schools so long in Boston, the peculiar condition of things is that as yet physicians have little or no control over those features of school life affecting the general health of the child, such as the seating room, the physical exercises, etc. They are required to be on the watch for contagious or infectious diseases and to decide on the attendance or non-attendance of any child so afflicted, and, to a certain extent, have some power of advice as to the attendance of cases of other than contagious affections. As to physicians being principals of schools, Dr. Fairbanks thinks there is too much detail, of a non-medical character, so that the physician would have most of his time taken up with technical details of administration. In regard to the Utopia which Dr. Smith depicts, Dr. Fairbanks thinks the system would be one of great expense, and he could not, in the five or six hours of school work, cover all these details. There are 2,700 children in the schools over which Dr. Fairbanks has jurisdiction, and he finds it very hard to look after the ordinary medical details alone, and he gives a great deal more time to it than he can afford in doing that. In his work, simple as it is, it is sometimes almost an impossibility to gain the co-operation of the family physician. In reply to a question, Dr. Fairbanks said that he is one of the medical inspectors of schools and has a certain school district. There are others who have the inspection of pupils in their districts. He thinks that the physician's power ought to be greatly extended, and that all matters affecting the health of the school child should be under the jurisdiction of the boards of health.

Dr. C. F. Wahrer, Fort Madison, Iowa, in regard to Dr. Smith's remarks about the ignorance of the average school board, said that the remark is not original. He asked how school boards and the laity are ever to be enlightened in regard to the things which physicians wish them to know unless the medical profession undertakes to educate them. He advised each society to have a publication committee composed of five or six members, who would give to the press the consensus of opinion on a given subject and said that in this way the garbled and incorrect statements on medical topics now found in daily papers would give way to plain statements of facts and the public would thus be educated.

Dr. Harriet Garrison, Dixon, Ill., said that in treating of child hygiene one important point which was not brought out is that every physician should educate his immediate families. When Dr. Dixon goes into a family and sees a child needs a certain regimen for his hygienic development, she prescribes it, and gives the necessary instructions for carrying out the treatment. If she meets a girl from one of her families on the street, walking in an unhygienic manner, she asks her to hold her head erect, to throw out her chest and to step out firmly, and calls the attention of the parents to the child's defects. Every physician should be responsible for his own clientele. In this way the laity can be educated, and if physicians do not instruct each family they never will be.

Dr. J. M. McGavin, Portland, Ore., thinks that as we come in contact with the laity we will be more and more surprised how quickly they take up ideas. Dr. McGavin has had some experience with the Chinese here, and in one case in which a child was dying of pneumonia they said: "We want you to get that stuff that blows the air out of their lungs." They meant oxygen. He finds that the Chinese adopt new ideas very quickly. If physicians do their duty they will be astonished at the rapidity with which the laity become educated along sanitary lines.

Dr. Alice M. Smith declared that preventive medicine rather than curative medicine should be the ultimate ideal in practice, and that physicians would lead more entirely successful and useful lives if this system of school hygiene were to be established, because people would so much rather pay to prevent a disease than to pay for its treatment after it becomes incurable. Moreover, Dr. Smith said that in this system the details would not be insurmountable, because the teachers would assume the responsibility of those duties properly belonging to them. Indeed, many teachers are just as enthusiastic and just as anxious to promote the best interests of their pupils as we are. These teachers, under the present system, are often greatly hampered by interference of principals, who insist on some procedures not suited to the best work of the individual teacher. If the school board will gage competent teachers and demand a certain standard of excellence in results, the teachers will naturally adopt the plan best suited to obtain those results. Thus the medical principal would be enabled to devote the greater part of the time to the hygiene of the school. Dr. Smith believes that the system could be made thoroughly practical in its application and that its direct and remote results would be of incalculable financial gain to the profession and to the public.

THE RELATION OF THE WATER SUPPLY TO DISEASES OF THE ISTHMUS.*

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The attention of American sanitarians has recently been directed to the Isthmus of Panama, and it was therefore thought of interest to this Section to present the following observations relating to the water supply, also the diseases studied while I was on duty with the U. S. Marines at Obispo and Empire last year.

During the days of the old French canal company the water supply of each section was obtained from the adjacent rivers or streams and pumped into tanks and relay stations to be distributed to the buildings occupied by the French employes. The native quarters were supplied by street hydrants. The official charts indicated the position of each pumping station, tank, and their connections with the liberal network of lead piping. All these had not been in use for years and were found in need of extensive repair. After the missing parts of pumps and pipes had been obtained from the section storehouse, the marines, by several weeks' work, were able to utilize this original means of supply. The ships at Colon provided distilled water for drinking purposes, which was sent to the camps in tank cars, sterilized before filling by steam. The river and rainwater were at first only used for washing and cooking, but eventually all drinking water was supplied by filtering the river water and sterilizing it with the Forbes-Waterhouse field sterilizers. Former employes of the canal company said that rainwater collected from the galvanized iron roofs through broad gutters into tanks and cisterns, was always an important source of potable water. The marines were quite dependent on it for washing and cooking before the river water became available. The several sections along the line, with their native population of Jamaicans, Chinese, Indians and Columbians, rely on rainwater to a great extent for their potable water. Every house has its unique collection of old barrels, tanks, dredge buckets and cans filled with rainwater containing myriads of larvæ and pupæ of the *Culicidæ* and *Stegomyiæ*.

A few springs and wells were found in use in the canal zone and vicinity of the cities. The springs are surface drains and readily contaminated, illustrated at Obispo, where two such springs were condemned for use, having been polluted by a garbage sink and latrine of the camp. The well at Empire, draining a square of houses and stable, was prized for the sparkle and flavor of its water. Needless to add, it showed, on examination, a rich nitrite contamination, and was condemned for the town use when an epidemic of dysentery appeared.

The sanitary condition and water supply of Culebra, as we observed it under the control of the new French company, was probably a good example of these features of each section during the days of the original canal company. It was not surprising to find that several epidemics of yellow fever, smallpox and dysentery had occurred here. The hill at Empire was occupied the year before the arrival of the marines by a battalion of Colombian soldiers and I learned they had many deaths from disease, particularly dysentery. In this connection it is of interest to mention that no deaths occurred among the marines, although for two months there were nearly 1,500 men on the isthmus.

At Obispo the river furnished a liberal supply of muddy water. By qualitative tests it contained an excessive amount of sodium chlorid, calcium and organic matter, probably vegetable, although the drainage from the native shacks along its banks and the river's general use for washing and bathing were sufficient cause for its contamination. The water from the stream at Empire above the pumping station did not indicate contamination by qualitative tests. Samples from several small streams in the vicinity also did not show contamination except lime and vegetable matter. The lake at Culebra during the dry season had considerable chlorid and organic contamination, probably vegetable.

From Obispo to Colon the Chagres river is available as a source of supply. The sample examined did not show contamination. It was not a sparkling water, had a peaty taste, and contained considerable sediment of vegetable residue. Following the river to its head waters near San Juan it was seen how innumerable were the small streams that flowed into it and it could be more readily understood that after a heavy tropical rain this river might become a swollen torrent difficult of control. Along the banks the native villages depend on its supply. Some of the natives have curious superstitions regarding this river water, which they say causes fever and death. Usually the natives trace the beginning of every ailment to bathing.

Another river not far from Panama and available for supply is the Juan Dias. Here we found a sluggish stream, dark and stagnant. Its waters showed only vegetable contamination.

Nearer Panama is the Rio Grande, which crosses the old Spanish road and during the dry season seems hardly more than a swiftly flowing brook. Its waters are clear and sparkling, containing many small trout. Qualitative analysis indicated this water to be the purest of all the samples submitted for examination by the engineer in charge of the canal.

In the interior the villages are usually situated close to one of the many streams. During the dry season the majority of these dry up, and even the mighty Chagres shrinks to a small rivulet flowing through its broad, stony bed. At such times the water is carried a long distance and left inside the shacks for many days. At a certain village where we arrived one night, tired and thirsty after a long ride, we were only too glad to buy a can of such water, and, after boiling, drank of it freely. In the daylight we saw that it was not unlike pea soup in color and consistency. Some of our officers who were in an expedition to Yavisa and Real, far in the mountains, said there were many streams and brooks with pure, cold and sparkling water in that vicinity. During the dry season the tendency of all these Panamanian rivers to vegetable contamination is to be expected when we find the small streams shut in by dense overgrowth, constantly shedding leaves and twigs into the water beneath. For all purposes of water supply in the canal zone it would appear that the Chagres river is the most suitable, but this question must be satisfactorily settled by the chief sanitary officer and the engineer in charge. This problem pertains not only for the canal zone but for the cities of Panama and Colon. The proximity of the Rio Grande to Panama and the excellent quality of its waters suggested, if the quantity was sufficient, its use for a local supp'y. During the height of the dry season its rate of flow calculated into gallons was said by the engineer in charge to be more than enough for all purposes.

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

The disposal of sewage and garbage and their relation to the water supply will be among the most important questions of the future. The marines depended on field latrines and garbage sinks, but these were considered to be a constant menace. There has never been a sewerage system on the isthmus in connection with the canal sections. Among the natives primitive methods prevail. Solid and liquid refuse are thrown out on the surface of the ground, where the hogs and the buzzards, self-constituted boards of health, devour it. Adjacent woods and bushes serve as privies for the majority of the natives, but a few have outhouses, the condition of which testified in favor of the primitive methods. The French section houses had been provided with stone vaults and earth closets or had used the barrel system. Their garbage and kitchen waste had been led by brick drains some distance from the kitchens or was deposited on the surface at a convenient spot. In the cities of Colon and Panama we saw the same methods. There were also local flushing systems and drains for modern closets and daily co'lections of garbage. Usually the native houses have a privy vault at the back of a central court-yard or, if an apartment house, this could be used in common by several families. A sewerage system, not only for Colon and Panama, but for the entire canal zone, will undoubtedly be planned and constructed by those who have charge of the future sanitation.[1]

Having control of the water and food supply of the marines and being ab'e to compel obedience to sanitary regulations, it was not surprising that, by comparison, there was little sickness. The results accomplished show more reasonable hope for the future. The principal diseases were malaria and dengue. As our drinking water was beyond suspicion, we therefore looked for other causes of infection. The two cases of dysentery which occurred in camp probably came from the use of town water. One small epidemic among the natives at Empire was believed to be due to the well water previously mentioned. Isolated cases of dysentery were treated at the clinic of natives. Strange to re'ate, typhoid fever was not seen and even on investigation in the hospitals at Colon and Panama no cases could be found. An American physician practicing in Colon told me that he never had a case of typhoid to treat since he had been on the isthmus, and this statement was repeated by physicians practicing in Panama.

The relation of the water supply to the frequent presence among the natives of intestinal parasites, especially the *Ankylostoma duodenale*, is more apparent. In view of the careless methods for the disposal of excreta, it is readily seen how ova from an infected case could contaminate the adjacent stream, also how epidemics of dysentery had spread, and how easy it would be for a disease like cholera to sweep over the isthmus, as it did in the early fifties.

There was no other disease treated which could be directly traced to the water supply, but indirectly the present system of allowing the natives to collect water in open receptacles about their dwellings causes disease by acting as breeding places for mosquitoes which transmit malaria, filariasis or ye'low fever. By noting the location of each case of malaria among the marines, it was demonstrated in both regiments that the greatest number occurred in the company houses nearest to the native dwellings, on the outskirts of the camp. A noticeable decrease in cases was observed when the natives were forced to vacate their dwellings. The supposed immunity of the native from malaria is probably due to repeated attacks in childhood. From among the children treated, examination of the blood revealed the parasite constantly in those varying from 6 weeks of age to 15 years. Such children are a constant menace to the community. The cause of the so-called "banana-belly" in native children was found to be either an enlarged spleen from malaria or due to the *Ascaris lumbricoides.*

Many patients who came to be treated for dysentery were found to have ova of the *Ankylostoma duodenale* in their dejecta. The Indians and the Colombians, both young and old, are the greatest sufferers. When diarrhea was not complained of and the blood was being examined for a supposed malarial infection, the diagnosis of hook-worm disease was frequently made by the eosinophilia and hemoglobinemia.

Filariasis was not common. One case of recurrent lymphangitis failed to reveal filaria in the blood taken after 8 p. m., but there was decided elephantiasis of the affected leg. Three other cases of elephantiasis were seen.

It has been definitely proved that the transmission of malaria is through the agency of the anopheles mosquito and not due to drinking water or miasmatic influences. Additional proof of this was given among marines who, while using distilled water, continued to be infected with malaria. Our ignorance of the isthmian fevers caused us from the first carefully to study and tabulate each case in order to differentiate and throw some light on this so-called Chagres fever. Malaria was recognized by the parasites in the blood. The presence of another fever with symptoms resembling malaria, but without parasites in the blood, was suspected. This was dismissed on differential diagnosis. It was believed that they were cases of malaria without the parasite being found. At the beginning of the rainy season such cases became frequent, and it was soon evident that we had a dengue epidemic.

It is important to emphasize the difficulty of diagnosis between malaria and dengue. It is also believed some dengue cases would be difficult to differentiate from yellow fever. Examination of stained specimens of the blood proved to be the surest method for differential diagnosis between malaria and dengue. There were a few cases necessitating a long search or repeated examinations. Quinin was not given until the parasite was found. There is no question of it being the safest antipyretic for use in the tropics if blood examinations can not be made. In dengue it was found apparently to have no effect on the typical fever, and in a few cases it evidently increased the symptoms of cerebral congestion.

Many authorities state that examination of fresh specimens of blood are most reliable. Stephens and Christopher insist on stained specimens, and the conclusion we reached agreed with them. Fresh specimens proved to be misleading, for it was found that in the blood of these dengue cases there were irregularly shaped, brownish-yellow, intracorpuscular forms, often seen in shrunken brassy corpuscles, appearing not unlike estivo-malaria parasites. Some of these resembled the *Piroplasma bigeminum,* and may be the blood parasite described by Graham of Beyreuth. They also resemble artifacts which occur in normal blood as it dries. Their presence in the fresh specimens was thought by us to be due to necrobiotic changes in the corpuscle, possibly from a toxin in the blood. We reached this conclusion when in 45 cases of dengue the blood counts indicated no destruction of the corpuscles. In fact, there was more often a polycythemia. Moreover, these piroplasma forms did not appear in the stained specimens. Finally, by feeding experiments with several species of virgin mosquitoes and after varying intervals of time examining the stomach and salivary glands, these piroplasma forms were not found. We also conducted several inoculation experiments by virgin mosquitoes fed on dengue cases at various stages of the disease. The details of these experiments, tables of blood counts and urine examinations, have already appeared in The Journal A. M. A., Jan. 21, 1905.

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[1] Since this paper was written I have been informed that the city of Panama is being supplied with water led by pipes from a lake or reservoir near Culebra. A standpipe at Ancon is to be built. A sewerage system has also begun at Panama.

During epidemics, when there are many blood specimens to examine, the stained preparations are easier to make than fresh specimens. The technic used was simple: A damp rag to cleanse the ear, a quick needle jab, a large drop of blood on the edge of a cigarette paper, and this applied to one end of a clean glass slide, where it spreads out by capillary attraction, after which it is slowly drawn the length of the slide. After the film is dried, 10 or 15 drops of Wright's stain are added, remaining 20 to 30 seconds. An equal amount of water is then added and the specimen stained 3 minutes. The slide is then washed and dried. It can be examined at once or put aside until convenient. Such a smear contains 5 to 10 times the number of corpuscles in a fresh preparation and is therefore equal to that many specimens. It is moreover available for a differential count of the leucocytes. The distinctive staining of the malaria parasite at once arrests the eye and there can be no danger of confusion if we keep in mind for young forms, first, the red chromatin nucleus; second, the vacuole, and, third, the blue protoplasm. Everything else must be excluded. Adult segmenting forms, rosettes, and presegmenting forms cause no trouble.

During the first rise of fever in dengue the blood fairly spurts from the pricked ear, but during the second rise and convalescence it flows sluggishly, coagulates quickly, and is dark and thick. The series of cases selected for blood count indicate that dengue is one of the few fevers with leucopenia. During the course of the disease the differential count of the white corpuscles shows a gradual decrease of the polymorphonuclear neutrophiles and a corresponding increase of the small mononuclear lymphocytes. This by contrast with malaria in which there is no leucopenia and generally a large mononuclear lymphocytosis, furnished us a valuable aid in diagnosis when the malaria parasite was not found. It takes but little more time when examining a specimen to record its differential count and estimate the number of leucocytes. To recapitulate: Evidence of leucopenia, a normal differential count, and no malarial parasites are in favor of the first rise of fever in dengue. If a malarial blood in which no parasites can be found there will be no leucopenia and the differential count will probably show a lymphocytosis of the large mononuclear and transitional lymphocytes. If there is leucopenia and a decided lymphocytosis of the small mononuclear lymphocytes it points to the second rise of fever in dengue or convalescence.

We investigated other causes of our dengue fever. This disease did not prevail as an epidemic on the isthmus except at our camp. We noted that a number of cases had catarrhal symptoms of the respiratory tract. The increase of dengue at the beginning of the rainy season and a decided fluctuation in the number of cases coincident with dry or rainy days pointed to a direct relation. Our explanation of this was that on rainy days all doors and windows were closed and the houses being overcrowded became poorly ventilated. This would tend to lower the resistance of the mucous membrane of the respiratory tract and favor infection by virulent bacteria. Working on this hypothesis measures to relieve overcrowding were recommended and immediately improvement was observed. Our conclusions were, therefore, that this epidemic was due to a contagious, congestive fever with catarrhal symptoms of the gastro-intestinal and respiratory tract. It resembled influenza in the selective influence of the toxin on the nervous system, in the leucopenia of the blood and also we believe by the possibility of contagion through the respiratory tract. The enlargement of the cervical and inguinal glands in many cases, suggested invasion of the body through the lymphatics. The leucopenia and increasing lymphocytosis might be explained by such infection.

Some of the cases of malaria were of unusual interest. One man had eight attacks of quotidian fever, constantly showing numerous small estivo rings (1/7 diameter corpuscles). He then had a typical attack of dengue with a characteristic chart and not a parasite to be found in the blood. Next he had an attack of fever with a tertian chart and typical tertian parasites in the blood, evidently a superimposed malarial infection, and finally another attack of quotidian fever with the reappearance of the tiny estivo rings. Many of the malarial cases had attacks of dengue and during such attacks the malarial parasite could not be found in the blood. Several cases of malaria were evidently pure infections by the subtertian estivo parasite and the charts were typical of that type of malarial fever. Single and double tertian infections were the predominating malarial fevers with almost the same number of estivo infections. Crescents were rarely seen in these latter cases. No quartan malaria occurred.

The majority of dengue charts are characteristic of that disease, consisting of a fall by lysis in from three to five days from the initial rise and then a secondary rise. A few of the cases would only have the secondary fever on admission. There were two cases, classed with the dengue cases, which had irregular fever charts and considerable albumin (0.125 to 0.5 per cent.). These might have been called yellow fever in the presence of an epidemic.

In concluding this paper the following analysis of symptoms as they occurred in the dengue cases may be of help to us as sanitarians. The eruption, when present, varied from a faint erythema to a profuse measles-like rash. It would often appear with the primary fever. A few cases had an urticarial or purpuric rash and suggested the dengue eruption to be a disturbance of the vasomotor nerves. The eruption was absent or not discovered in many cases otherwise typical. Desquamation was only observed in two cases. A marked congestion of the eyes and face was usual, but also observed in some of the malarial cases, especially in first attacks. Severe neuralgic pains in head, back and limbs, complained of so bitterly by the dengue patients, were described by patients with malaria, but those who had had both diseases said that the dengue pains were more intense and different in character. A peculiar pain on moving the eyeballs, especially when looking up, with tenderness to pressure, is almost diagnostic, yet a few cases of malaria had this symptom. The onset of fever was usually sudden, but in malaria more gradual. Diarrhea and gastrointestinal irritation were particularly noticeable at the beginning of the epidemic of dengue. A few complained of chills, but the majority had merely chilly sensations. Definite chills were common in malaria. Anorexia and vomiting occurred in both diseases. In one case of typical dengue there was fresh blood in the vomitus. Bleeding gums were noted in many. The scleræ looked muddy and in an insufficient light might be easily called icteric. In a few of the cases of malaria there was decided icteric scleræ and jaundiced skin. Such cases were carefully watched in the view of the constant expectation of yellow fever.

Pains in the joints, especially the knees, were occasionally noted, but there was no evidence of swelling. Pain in the epigastrium was commonly complained of in dengue, and over the spleen and liver by those who had malaria. Parasthesias, loss of sensation and numbness of the extremities, increased or diminished patellar reflexes, neuralgic pains in the shoulders, back of neck and chest, muscular cramp, substernal oppression with a sense of suffocation, tachycardia, and even a feeling of impending death were some of the nervous manifestations. Insomnia was common and restless sleep with horrible dreams, mental uneasiness, vertigo, photophobia and frontal headache indicated a decided cerebral irritation. Indefinite neuralgias and loss of power in the legs were seen in few cases and had to be differentiated from beriberi, which exists on the isthmus.

The pulse usually followed the fever, but in the more severe cases during the second rise of fever it was slow to respond. In one case there was an actual divergence of pulse and temperature, an important symptom of yellow fever. At first the pulse was full and strong, often dicrotic, later it became soft and weak. Profuse sweats were common in both malaria and dengue. During the first rise of fever in dengue the skin had a peculiar dry, congested feeling. Herpes of the lips, eyelids, and neck were noted. The tongue was usually dry, with a brownish white coat at the base and a clean tip and sides. In malaria it was swollen and white. The spleen in some, but not all cases of malaria was tender and palpable. This symptom was present in dengue cases who had had malaria. Epistaxis was noted in three cases. In a few of the dengue cases who had diarrhea, blood, pus, and mucus were found in the feces and caused anxiety as to the possibility of dysentery. This condition quickly disappeared.

Among all the 279 cases of fever which were tabulated and analyzed there is, of course, a possibility of there being mild yellow fever. The two cases mentioned as having atypical dengue charts with excessive albumin, one of which presenting a diverging pulse and temperature curve, were decidedly suspicious. It is believed, however, that all were due to either malarial infection or dengue. The chief sanitary officer of the canal, Dr. Gorgas, who kindly examined the data and charts of these cases, did not think that we had had yellow fever.

In closing, I wish to express my indebtedness in collection of data and assistance in blood examinations to Assistant-Surgeon Richard L. Sutton, U. S. Navy, who was associated with me at Empire.

DISCUSSION.

DR. DENSLOW LEWIS, Chicago, said that the first and most important subject that has to be considered in this connection is the sanitation of the Isthmus, and that we are fortunate in having on the ground so competent a medical officer as Dr. Gorgas.

DR. CARPENTER said that we can feel that the future is safe in the hands of Dr. Gorgas. He has been very energetic recently, but Dr. Carpenter understands at present that yellow fever is now generalized on the Isthmus. Quite a number of non-immunes were sent down a little before the country was prepared for them, and in consequence there seems to have been a generalized infection. He thinks that the success of the sanitary authorities rested on the fact that they were able to enforce obedience to sanitary regulations among men under military control, and it seems to him that if in the future the Isthmus is placed in a sanitary condition. the engineers and employes living under proper conditions could get along very well. The same means for destruction of stegomyia mosquito larvæ will do away with malaria also. Dr. Carpenter thinks this is of great importance, and Dr. Gorgas, he believes, recognizes the menace, so far as malaria is concerned, from the antives. The natives in the vicinity of the camp were forced to move from their houses. This cause was very evident; plans were drawn of every company house and the cases were tabulated and in this way it was found where the greater number of cases were occurring. Everything at first was in the dark. The native physicians gave no light. Of the so-called Chagres fever little was known. Dr. Carpenter thinks that malaria when it is recognized early and is properly treated, is not particularly dangerous. The Marine-Hospital surgeons had no fatal illness among their patients. There were the benign, the tertian and the pernicious infection. Dr. Carpenter was also particularly interested in being able to differentiate in a few cases between the quotidian estivo-autumnal and the subtertian estivo-malaria. The Italians differentiate between these, but he does not think Americans have generally accepted this classification. In reply to a question, Dr. Carpenter said that he did not know how the sewage is being disposed of. He has not been in communication with the physicians on the Isthmus. He heard that they have started to dig up the streets to put in a sewer system for the city.

THE NASAL SEPTUM; A DESCRIPTION OF THE AUTHOR'S PRESENT MANNER OF PERFORMING THE WINDOW-RESECTION FOR DEFLECTIONS.*

OTTO T. FREER, M.D.,

CHICAGO.

TYPES OF DEFLECTION.

The mucous membrane incisions in my method of performing the submucous or window resection vary with the type of deflection and for this reason I precede the details of the operation with a description of deflections as I have seen them, employing for them as much as possible the names in common use and grouping them according to their form.

Angular Deflections.—The double-angled deflection: This variety of deviation I have found by far the commonest. It possesses a vertical and horizontal angle, joining near the base of the septum and forming a projection on the convex side not unlike the corner of a box. The vertical angle (Fig. 1) occupies the quadrangular cartilage and ascends to a varying degree, sometimes into the perpendicular plate of the ethmoid bone. The vertical angle may jut out so strongly that it presses into the inferior turbinated body. The horizontal angle in the usual type of double-angled deflection begins in the cartilage in front of the vertical one and extends backward and upward in the form of a wedge into the bony septum, its apex following the superior border of the vomer in most cases, the crista nasalis inferior and vomer curving outwards above the nasal floor to make the lower plane of the horizontal wedge. (Fig. 2.*b*.)

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

On the concave side of the deflection a deep trough with a V-shaped bottom is seen ascending backward and slightly upward and corresponding to the projection of the horizontal angle on the convex side. The site of the vertical angle is usually merely indicated by a gentle depression easily overlooked.

The Crestlike Angular Deflections with a Single Angle.—This variety of deflection I have found next in frequency to the double-angled kind and it is distinguished from the latter by the absence of a vertical angle, the horizontal one alone existing. (Fig. 3). It is this type of deflection that is so commonly designated a "ledge, crest, exostosis or spur" under the supposition that it is entirely or mainly a solid projection with little or no concavity to correspond to it on the other side of the septum. The skeletonizing of the deflected septum incident to the window resection soon showed me the rarity of massive prominences arising from a plane septum and I found that the supposed ledges or crests which I used to saw away were really merely the summits of evenly hollowed deflections in cartilage and bone.

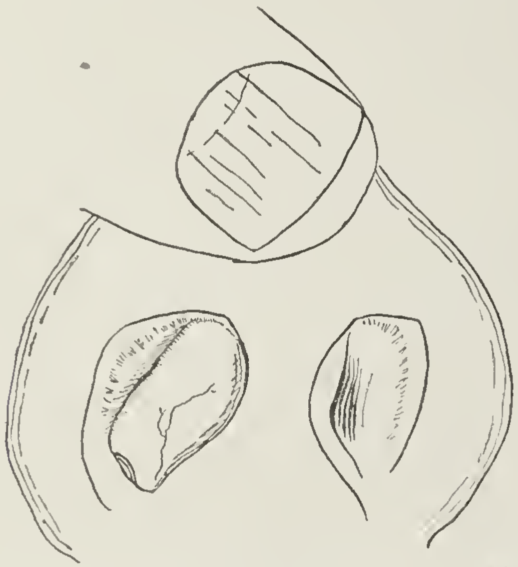

Fig. 1. Deflection in right naris showing vertical angle. From life.

The posterior part of the horizontal angle of deflection may often be seen by posterior rhinoscopy as shown in Fig. 4*a*.

Sigmoid Deflections.—This type, in my experience, is third in frequency, being comparatively rare. The septum may be S-shaped horizontally or vertically. In the horizontal variety the anterior part of the deflection presents a vertical angle or bend like that found in the double-angled deflections, but the posterior, hidden plane of this vertical angle is unusually long so that it crosses the median line and creates behind the first bend a second vertical angle of deflection, usually partly or wholly in the bony septum, and with its convexity in the other naris.

In vertical S-shaped deflections two bends exist with their concavities reversed and situated, one above the other, the lower one having the usual form of the crest-shaped horizontal angle, while the upper one is commonly more gently curved and extends high up into the perpendicular plate.

Bowed or C-Shaped Deflections.—I have met with very few of these. They are usually extreme, situated far in front and obliterate the naris by an even bulging of the cartilaginous septum against the outer nasal wall. Posteriorly, however, they merge into the standard type of the crest-shaped horizontal angle.

The bulging cartilage bellies out both vertically and horizontally in the form of a capital C.

Columnar Cartilage.—The dislocation of the anterior inferior border of the quadrangular cartilage (so-called columnar cartilage) from its normal seat above the cutaneous septum is in my experience a frequent complication of all kinds of anterior deflections. Normally the free border of the cartilaginous septum extends in the median line upward and forward above the cutaneous septum from the inferior nasal spine to the space between the median plates of the alar cartilages. In the anomaly mentioned the inferior and anterior angles of the cartilage of the septum are dislocated from their positions above the crista incisiva and between the alar cartilages so that the lower anterior movable part of the cartilaginous septum is displaced from its place above the cutaneous septum into one or the other nostril. In addition, when it is thus freed from its sustaining points, it usually grows downward and forward unrestrained, curling on itself, often creating a decided obstacle in the nostril of the concavity of the deflection it complicates, and appearing as a white elastic object under the skin beside the septum cutaneum. (Fig. 5*a*.)

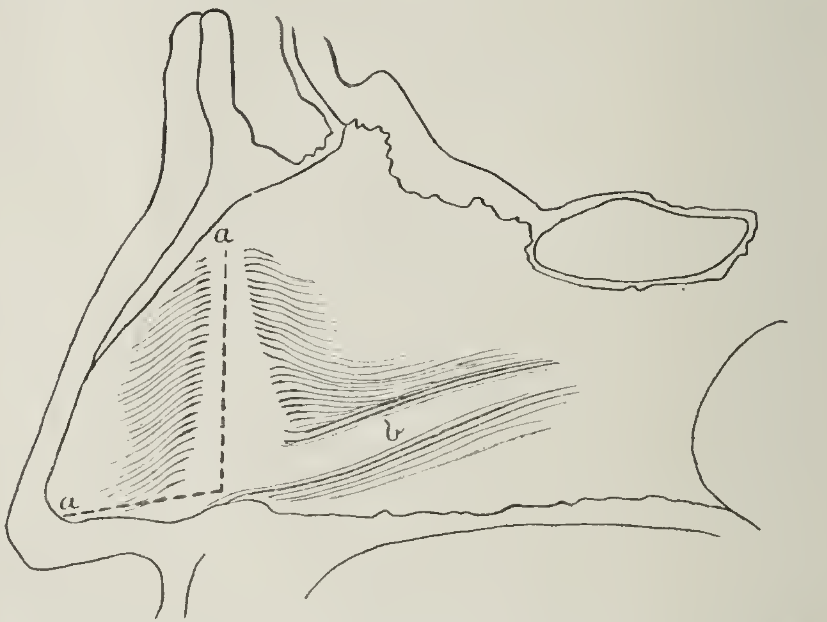

Fig. 2.—Lateral view of convexity of double-angled deflection; *aa*, outline of mucous-membrane incision; *b*, horizontal angle of deflection.

Irregular Deflections.—Some deflections are of such an odd shape that they can not be classified, but the great majority of those I have seen fit into one of the above groups.

Bony Deviations.—Deflections confined to the bony septum are fairly frequent. They are apt to be taken for solid crests or spurs, their projecting portion being sawed away, while the greater part remains behind and continues to obstruct the naris. The window resection extirpates these obstacles radically.

DESCRIPTION OF THE OPERATION.

Preparations.—The operation is to be done, as far as possible, according to the rules of aseptic surgery, a knowledge of which is presupposed. A special operating room is not required, and the resection may be performed in the physician's office.

It is necessary to clip away all of the hairs in the nasal vestibule. They retain dirt, catch the light and even a few of them surprisingly obstruct the view.

Position of the Patient.—Preparations should be made for conducting the operation with the patient either in the sitting or recumbent postures, for both positions have their advantages and it may be needful to change the patient from one to the other while the work progresses. For the operation with the patient reclining I employ a high operating table, one end of which may be raised in order to lift the patient's head to the required level.

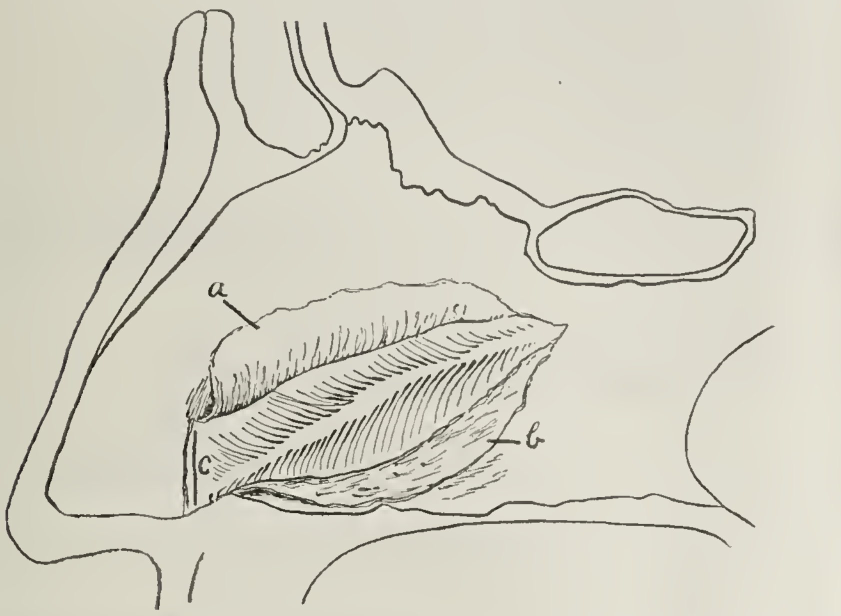

Fig. 3. Lateral view of convexity of crest-shaped deflection beginning well in front; *a*, superior flap; *b*, mucous-membrane pouch formed below; *c*, first cut through cartilage in front of deflection.

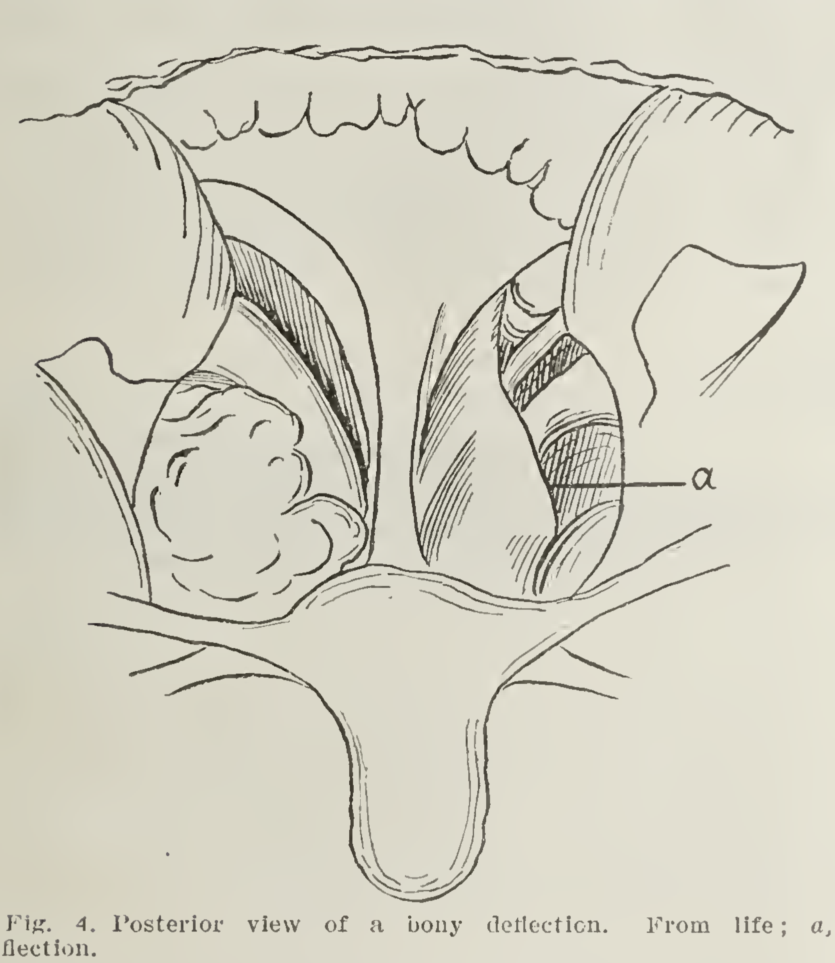

Fig. 4. Posterior view of a bony deflection. From life; *a*, deflection.

Where the recumbent position is employed, the patient avoids the spells of faintness that are apt to attack him if he sits during the operation. Neither he nor the surgeon are fatigued by long-continued sitting in a strained position. What little blood escapes the swabs flows backward into the nasopharynx and is swallowed, leaving the operative field clear. The higher parts of the septum are more easily reached than when the patient sits up, and the assistant who wipes away the blood has a better view of the field.

The advantages of the sitting position for the patient are these: The resection of bony deflections is usually easier than when he lies down, especially where the crista nasalis inferior (synonyms: superior maxillary crest, crista incisiva) and the lower part of the vomer need cutting or chiseling away, for while the upper parts of the septum are most readily reached when the patient is recumbent the parts nearer the nasal floor are most accessible when his head is held upright. The tampon can also be more accurately built up in the latter position. In most cases I begin the operation with the patient lying down and have him sit up at the end to finish the bony resection and insert the tampon. The tendency to faint seldom lasts beyond the cartilaginous resection.

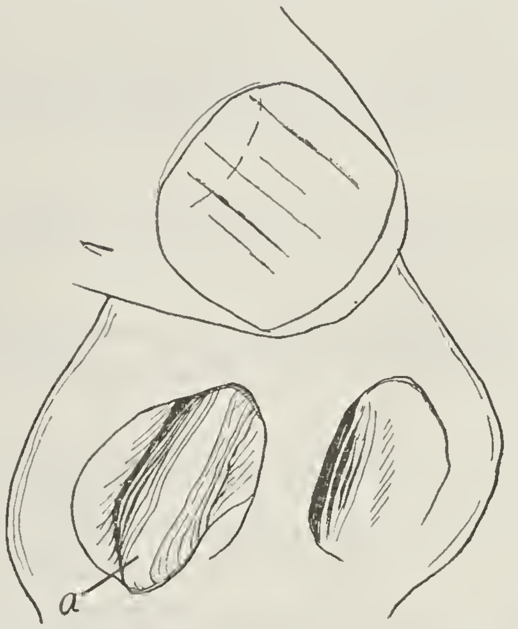

Fig. 5. Greatly thickened anterior inferior border of the cartilage of the septum lying beside septum cutaneum; *a*, cartilage. From life.

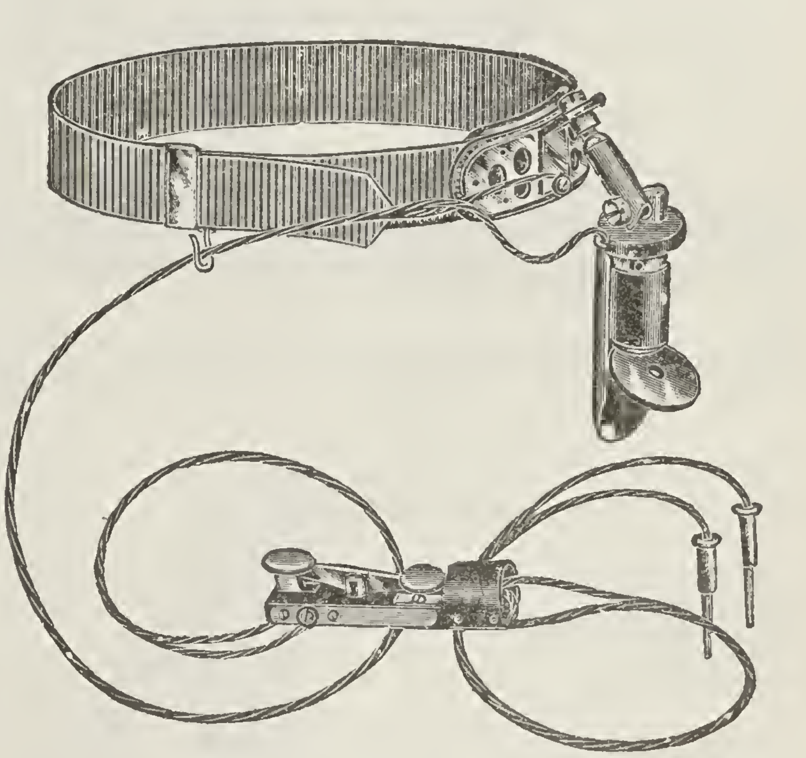

Fig. 6. Kirstein's electric headlamp.

Lights Employed.—The Kirstein electric headlamp (Fig. 6) is, in my experience, the one best suited for the operation. In the usual types of electric headlamps the rays are directly emitted from a light on the forehead, so that the light beams form an angle with the axis of the observer's eyeball, and if a cavity be inspected it is not lighted deeper than the apex of this angle, and for this reason, no matter how brilliant be such a light, it only illuminates the anterior parts of the nasal fossa, leaving its deeper parts in darkness. In the Kirstein light, called by its inventor *das leuchtende Auge* (the shining eye), the light is condensed from above on a small mirror fitted with a central perforation through which the observer looks and which gives him the advantage offered by the common head mirror, namely, that the rays returning to the eye from the illuminated object are parallel to those emitted by the light, and hence the cavity inspected is lighted clear to its bottom. The advantage of the Kirstein light over the head mirror is independence from a source of light for reflection, for this light dazzles the observer and compels him to hold his head in a fixed position relative to the light in order to catch its rays, while the assistants have to be careful to avoid getting between light and operator, and hence are limited in their freedom of motion. Some operators have complained to me that the Kirstein light was not bright enough. In these instances it is not the lamp that is at fault, but the kind of rheostat employed, as many of these do not let enough current pass through them to make the Kirstein light glow brilliantly, although they have ample

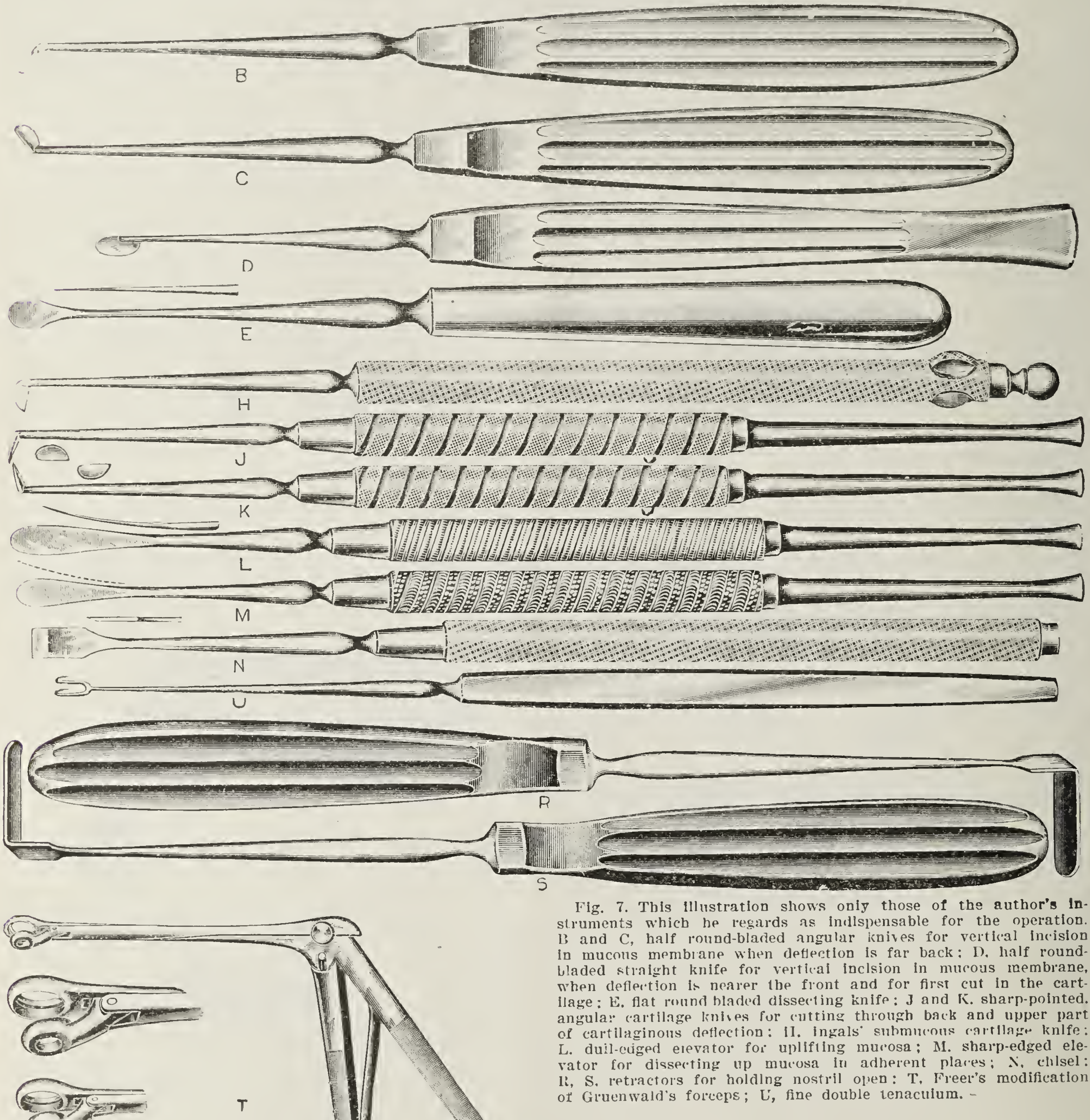

Fig. 7. This illustration shows only those of the author's instruments which he regards as indispensable for the operation. B and C, half round-bladed angular knives for vertical incision in mucous membrane when deflection is far back; D, half round-bladed straight knife for vertical incision in mucous membrane, when deflection is nearer the front and for first cut in the cartilage; E, flat round bladed dissecting knife; J and K, sharp-pointed, angular cartilage knives for cutting through back and upper part of cartilaginous deflection; H, Ingals' submucous cartilage knife; L, dull-edged elevator for uplifting mucosa; M, sharp-edged elevator for dissecting up mucosa in adherent places; N, chisel; R, S, retractors for holding nostril open; T, Freer's modification of Gruenwald's forceps; U, fine double tenaculum. -

capacity for the little diagnostic lamps in common use. The regular German Kirstein miniature lamps require from 10 to 12 volts and often an ampere of current to make them blaze with a white light. The O. C. rheostat with a 50 candle power light in series or a small 12-volt storage battery fitted with a rheostat will furnish the required current. Of late I have used 6-volt American miniature lamps in my Kirstein sockets and have obtained as bright a light as with the larger German ones.

Those who prefer the head mirror can use it when the patient lies down if a 50 candle power, stereopticon, pigtail filament, 110-volt, Edison incandescent lamp be used as a light to reflect from. It may be clamped for this purpose to an *x*-ray stand placed beside the patient.

Anesthesia.—In the exceptional cases where the dislocation of the anterior inferior unattached border of the cartilage of the septum from its seat above the cutaneous septum demands the beginning of the resection from a cut along this free border, a 2 per cent. solution of cocain is injected submucously on each side of it, for the thick epithelium over the foremost, lowest part of the septum hinders absorption from the surface. In all other cases, as formerly, I first swab adrenalin, 1 to 1,000, on both sides of the septum to the limits of the deflection, following it in about three minutes with pure cocain in flakes or powder, rubbed on the same regions with a minute, moist swab. The concentration of the drug produces profound local insensibility, which is confined to the operative field and is so rapid that the first cut may be made in about five minutes after the application. I have never seen noteworthy cocain intoxication, though, as the operation proceeds, the pure drug is repeatedly applied to the wound surfaces to maintain the anesthesia and as a hemostatic. The insensibility to pain obtained with pure cocain is so perfect that observers of my operations have been struck by it and have contrasted it favorably with the local anesthesia produced by the usual solutions. I can see no reason for submucous injections of the drug except in the locality mentioned.

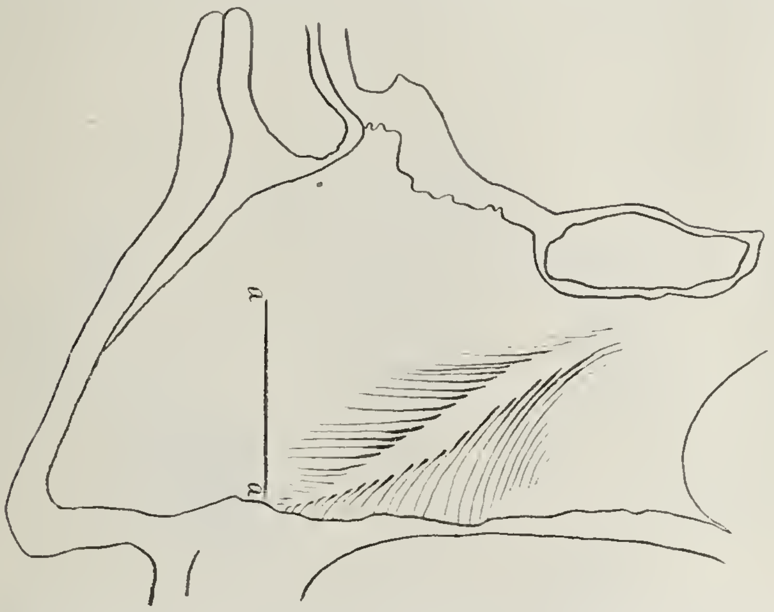

Fig. 8. Lateral view of a crest-shaped deflection beginning deeper in the naris: *aa*, vertical mucous-membrane incision made in front of deflection.

For children I combine chloroform narcosis with the application of cocain. Just enough chloroform is used to keep the child unconscious of its surroundings. As a rule, hardly a half narcosis is needed.

Assistance.—An attendant is needed to hold the nostril open with retractors, and it is well to have a second one keep the field of operation dry by swabbing, as this makes the operation much more rapid and precise. At least 60 swabs rolled on pointed applicators should be ready.

Specula.—No speculum is used during the operation, the naris being held open by an attendant with the flat retractors shown in Fig. 7 (R. S.), one being broad and the other narrow. They can be adjusted much more accurately than a speculum to suit the varying needs of the progress of the operation.

Incisions in the Mucous Membrane.—These vary according to the type of the deflection. For the frequent double-angled deflections described, my present incision is made in the shape of a capital L looking backward, the vertical cut, as of old, following the angle of the vertical deflection and beginning high up on the septum above the deviation, the horizontal cut extending forward from the bottom of the vertical one along the crest of the horizontal deflection, if it be acute and project greatly. If it be little pronounced, the incision is made along the nasal floor. The cut should extend to the very front of the septum in most cases (Fig. 2). This outlines an anterior flap with its base forward. The posterior extension of the horizontal cut, which gave the older incisions the form of an inverted T, I no longer use. The reason for usually making the horizontal cut along the crest of acute-angled horizontal deflections and not along their base is the frequently great adherence of the mucosa at the apex of such horizontal deflections and below it, so that its separation from below is difficult, and it is better to dissect it off downward from an incision made along the crest.

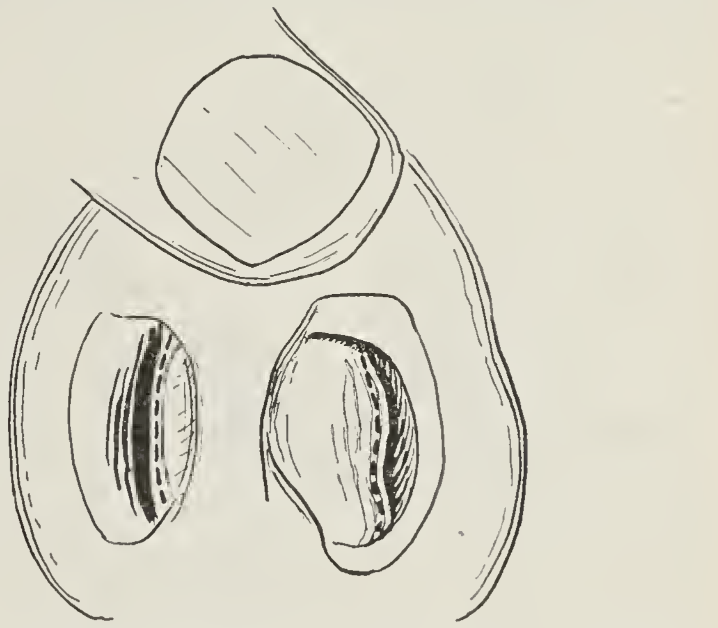

Fig. 9. Deflection showing vertical angle in left naris and dislocation of free border of cartilage into naris of concavity. Dotted lines show sites of mucous-membrane incisions.

The incision for the crestlike deflections varies with their depth in the naris. For those extending to the front of the nostril an incision is made from behind forward along the whole length of the crest of the deflection, curving the cut upward at the front. This outlines a superior instead of an anterior flap (Fig. 3).

Most of the crestlike deflections, in my experience, begin far back in the naris in or near the bony septum, and for these a single vertical incision (Fig. 8, aa), reaching from the nasal floor high up on the septum, is made just in front of the beginning of the deflection and the resection is conducted for this, for in this type of deviation there is no deflection to remove from the front of the naris, and the vertical incision opens the way at once to the deep-seated deviation in the bone.

The mucous membrane cuts are made with the knives with half-rounded edged or round edged blades (Fig. 7, B, C, D, E), B and C being used for vertical angles occurring far back. The surgeon must be sure to make his cut deep enough to sever the perichondrium, so that it can be elevated from the subjacent cartilage, for while the perichondrium usually peels very readily from the cartilage it is only possible to separate the mucosa from the perichondrium by tedious dissection.

Where the anterior inferior free border of the septum is displaced into the naris of the concavity sufficiently to obstruct breathing, causing the anterior plane of the vertical angle of deflection to lie across both nostrils (Fig. 9), the resection is commenced by an incision on the free border of the septum on the concave side, and as much of the deflection is dissected out from this as can be reached. If the deviation extend far back into the bone the usual vertical cut is made along the vertical angle on the side of the convexity and the dissection continued from this.

The horizontally sigmoid deflections require no special incision, and I extirpate them from the usual reversed L cut mentioned for double-angled deviations, the second, deep-seated bend being readily reached from this. The same cut also answers for the C-shaped deflections, the vertical incision being made along the most bulging part of the bend. The upper bend in the vertically sigmoid deflections can readily be reached from the incisions described for the crest-shaped or double-angled deflections.

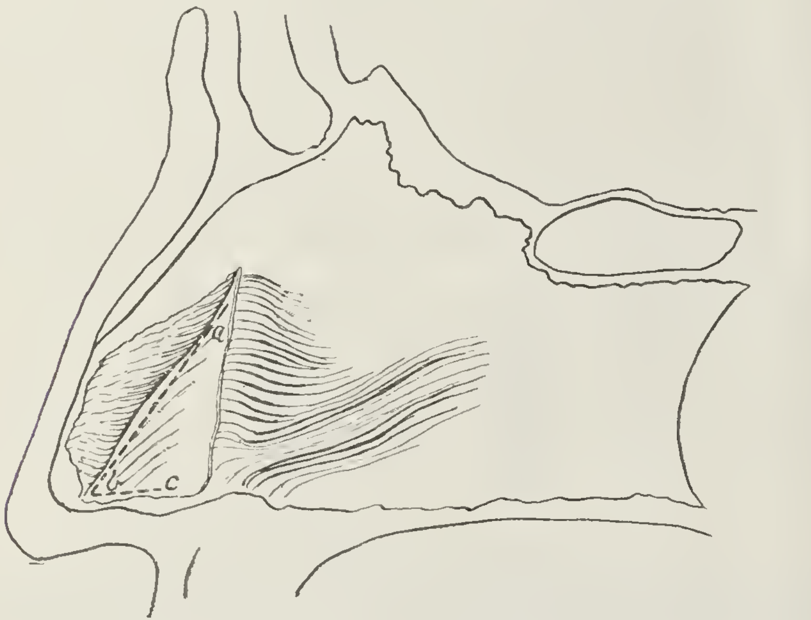

Fig. 10. Lateral view of septum with double-angled deflection, anterior flap reflected; *abc*, first cut through cartilage.

The Reason for the Incisions Described.—The great majority of deflections have a vertical angle or summit, and the principle of my method in these cases is to begin the separation of the mucosa perichondrium from a cut following this summit. In distinction to this the German operators and their many pupils in America make the first mucous membrane incision in front of the beginning of all deflections, sometimes, as Hajek and Menzel do, at the very front of the septum, on the free border of the cartilage, starting the resection from this foremost part, no matter how far behind it the deflection may commence.

The first part of the separation of the mucosa of the convexity is made easier by the German type of incision, and the single slitlike wound left after the resection is completed closes itself, while my flaps have to be applied and held in place with the tampon. The disadvantage of the German cut, however, is that one has to operate through a button-hole incision far in front and that even the remotest parts of the deviation have to be reached through this contracted orifice at the greatest distance from them on the septum. It is also admitted by advocates of this method that they find it difficult to elevate the mucosa-perichondrium over and behind the vertical angle of deflection and that a perforation of the mucosa of the convexity is apt to occur in this locality. In short, one has the difficulty of conducting the resection in a long pouch of mucous membrane extending back from the very front of the septum and entered from a button-hole incision. This suffices very well for many of the purely cartilaginous deflections, but in the majority of cases there is a bony deviation to resect, extending frequently nearly to the posterior border of the vomer, and until the cartilaginous deviation is cleared away it is often impossible to tell how much bone will need removal. To judge from my own experience with the difficulty of resecting the bony deflection from the button-hole incision, those who use this method must often slight the bony part of the operation. In fact, one gains the impression from their writings that the main thing is to resect the cartilage and that bony deflections are an unimportant complication, whereas in my experience I have often had to cut away as much bone as cartilage to free the nostril.

In distinction to the German methods my vertical incision leaves but a short, widely open sac of mucous membrane behind the vertical angle, and the latter does not have to be passed in elevating the mucosa of the convexity behind it, as its liberation begins on the apex of the angle. In addition the bony part of the deflection is made perfectly accessible and is exposed to view.

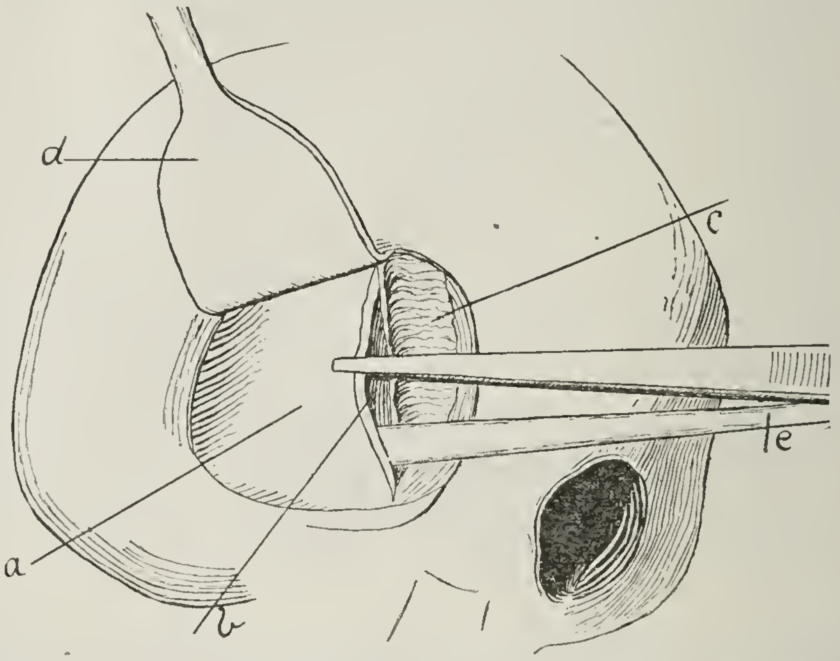

Fig. 11. Denuded deflection in the right naris seen somewhat from the side. The posterior edge of the slit in the cartilage is held with the rat toothed forceps after it has been lifted up with the elevator; *a*, cartilaginous deflection; *b*, inner surface of the mucosa of the concavity; *c*, anterior flap; *d*, retractor lifting wing of nose; *e*, elevator underneath the cartilage..

In order to overcome the difficulties of the anterior incision, Killian complicates the operation by holding the mucous membrane sac open with the blades of his long speculum for rhinoscopia media. An instrument of this kind takes up too much room in the nasal fossa, blocks the nostril and interferes especially with the free use of forceps for cutting away bone.

Another objection to the mucous membrane incision far in front is the fact that it coincides with the first cut through the cartilage, so that, should the mucosa of the concavity be accidentally pierced in making this cut, a penetrating wound straight through both the coverings of the septum will result, and hence often a permanent perforation of the septum, while my anterior flap in this region overlies an accidental hole through the mucosa of the concavity and closes it. The foremost part of the septum is the worst place for a perforation, as it crusts for a long time and is evident to the patient.

My incisions for the other varieties of deviations mentioned are also all designed to make the deepest part of the deflection accessible.

Instruments for Separation of Mucous Membrane.—Most of the instruments devised for this part of the work are unnecessarily large and massive, and the heavy bone implements of the general surgeon seem to have served as models for them. The problem is not so much to scrape off the perichondrium and periosteum from the septum as one would denude the tibia as to carefully undermine the coverings of the deflection, for the instruments, on account of the position of the septum between two narrow cavities, must of necessity work nearly parallel to the surface attacked so that scraping is only possible to a limited extent in front. In addition, the soft, yielding, springy cartilage is not as suitable as bone for scraping with chisel-edged instruments. The undermining must be done in narrowest places, around corners and often at a great depth in the naris, by actual measurement in many of my cases two to three inches behind the front of the external nostril. The type of elevator demanded is, therefore, thin-bladed and flat, so that it may undermine readily, narrow so that it may fit small nares, long so that it may reach places deep in the nasal fossa, and gently curved so that it may work around corners and always keep its edge close to the surface to be denuded, lest it perforate the mucosa. A sharp and dull separator are needed, the dull one being merely without keen edge, but never blunt, as blunt instruments perforate readily by punching through in front of adherent places. The sharp elevator and, in addition, my round-edged knives of various patterns (Fig. 7, L, E, D) are used for keen dissection in places where the covering of the septum is adherent. In many cases all of the separation may be done with the dulled separator, but the crests of deflection, the bottom of the concavity, cicatrices after previous operative attempts, often both sides of the crista incisiva and vomer below the horizontal angle of deflection and the foremost part of the cartilage, are places where the covering may need to be dissected away with keen blades.

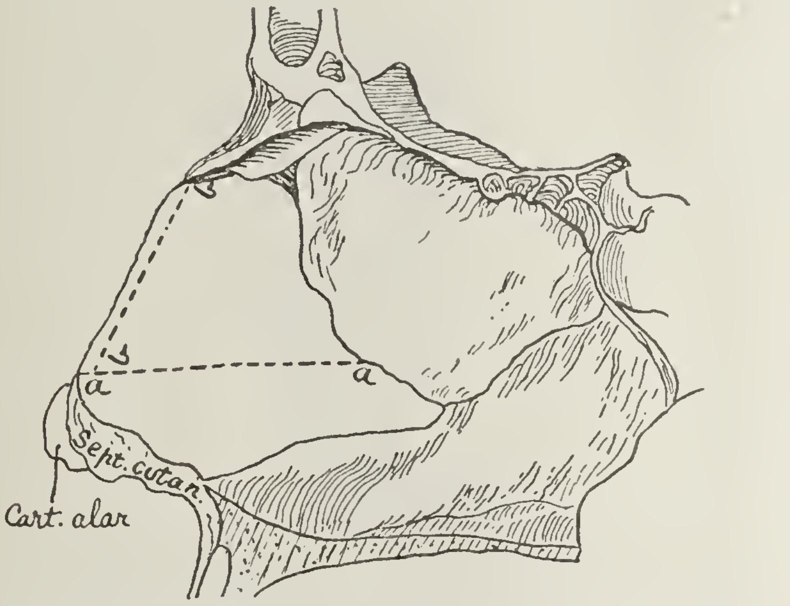

Fig. 12. The nasal septum; *aa*, line below which the cartilage may be completely removed; *bb*, posterior limit of strip of cartilage under nasal bridge to be preserved.

In addition to the long elevators mentioned, it is a great convenience to have a short-bladed pair for uplifting the mucosa in the front of the naris, for the closer to its working point that an instrument is held the easier is it to direct its motion and the firmer is its guidance.

A thing to avoid in the construction of instruments for the resection of deflections is the so-called nasal angle. This is an angular attachment of the handle to the shank designed to keep the hand below the level of the nose under the supposition that it gets in the way of sight when holding a straight implement, and a number of instruments for the submucous resection are now made in this manner. Mine are all straight, yet I can always see the field of operation perfectly. Even slight pressure against the distal end of an angular instrument tends to rotate the handle, which, therefore, has to be held firmly either in the fingers or, as is easiest, grasped in the whole hand. This effort implies a stiff wrist and fingers and makes it necessary to make the motions of the instrument with the coarse muscles of the arm and shoulder, instead of the finer ones of the hand and fingers, which are capable of more accurate and controlled work. The presence of an angle also complicates the movements needed and disturbs the sense of direction.

Separation of Mucosa on Convex Side.—The mucous membrane and perichondrium of the septum form two distinct layers. The perichondrium is thin and transparent and is readily overlooked, because the whiteness of the cartilage shines through it. The inexperienced operator, therefore, is apt to attempt to lift the mucosa from the perichondrium, a difficult task even for keen blades, under the impression that he is baring the cartilage, when he is really leaving it still covered with its thin film of perichondrium. Had he passed his dulled separator under the perichondrium, between it and the cartilage, the undermining of the covering of the deflection would have been a simple matter. It is, therefore, necessary to search for the beginning of the thin membrane of perichondrium at the edges of the incisions, gently scraping it up with the dulled separator until the instrument will pass underneath it. Nevertheless, there are often places where the perichondrium or periosteum clings to cartilage or bone, and the sharp dissectors are needed in such regions. In this manner, in double-angled deflections, the anterior flap should be reflected (Fig. 10) a little beyond the limits of the deflection, so that it will fold back and stay out of the way.

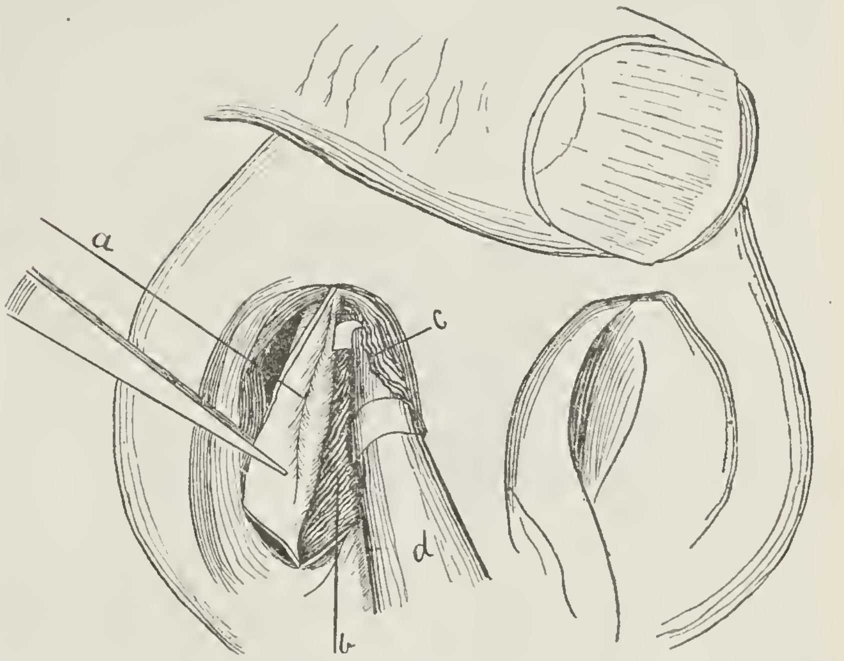

Fig. 13. The cartilaginous deflection, including the vertical angle, *a*, has been cut through at its base and in front and is being severed behind and above by the angular cartilage knives; *b*, inner surface of the mucosa of the concavity of the deflection; *c*, anterior flap folded out of the way; *d*, angular cartilage knife.

The pocket of mucous membrane behind the vertical angle is next made by undermining perichondrium and periosteum over the entire remaining area of deflection backward and, if possible, downward to the base of the septum. Along the crest of and below the horizontal angle of deflection keen dissection with the sharp elevator may be required, and the elevation of the mucosa in this region may be so difficult that it may have to be deferred until the resection of a part of the cartilage makes it more accessible.

In the anterior crestlike deflections an upper flap is made, large enough to fold upward as much out of the way as possible. The separation is then continued below the horizontal crest, a mucous membrane pocket being created which reaches the base of the septum, the crista incisiva and vomer being thus bared below the horizontal angle (Fig. 3). As stated, sharp dissection is often needed in this region.

In deep-seated deflections beginning near the bony septum the separation is conducted from the vertical cut in front of the deviation described (Fig. 8).

In the anterior deflections that require dissection from the free border of the quadrangular cartilage in the naris of the concavity, keen dissection with the round-bladed knife (Fig. 7, E) is sometimes needed for a distance back of about three-fourths of an inch before dull separation becomes possible.

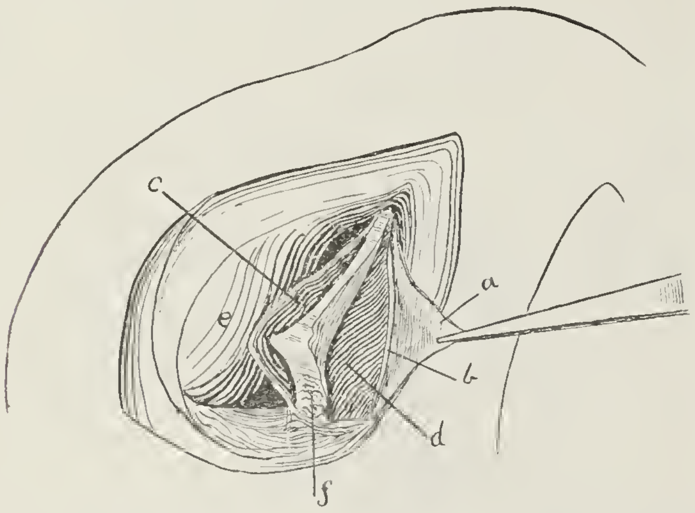

Fig. 14. V-shaped profile of bony deflection seen after removal of cartilaginous deviation; *a*, anterior flap; *b*, anterior cut edge of cartilage; *c*, separated mucosa of convexity of deflection; *d*, inner surface of mucosa of concavity of deflection; *e*, inferior turbinate; *f*, vomer.

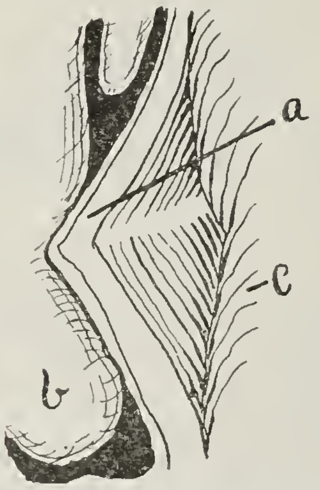

Fig. 15. V-shaped bony deflection seen after resection of the cartilage, pressing firmly into inferior turbinated body; *a*, bony deflection; *b*, inferior turbinate; *c*, mucosa of concavity.

First Cut Through the Cartilage.—A clean cut through the cartilage with my thin-bladed, razor-edged knife (Fig. 7, D or E) is less apt to perforate the mucous membrane of the concavity than tedious scratching through with a thicker-edged, sharp instrument, for the thin knife cuts through with slight strokes and is held lightly like a pen in relaxed fingers, while it is necessary to seize the thick-bladed instrument more firmly in order to make the pressure on the septum needed to make it cut, a pressure which is apt to make it suddenly plunge through the mucosa of the concavity when the cartilage is pierced. The light stroke used in cutting with a thin blade permits a delicate sense of touch which tells the operator when he has penetrated the cartilage. I have abandoned the use of the little finger in the other nostril to feel for the edge of the knife under the mucosa, as it presses the mucous membrane against the advancing edge and so favors a perforation. When the knife seems to have severed the cartilage along a line of about one-half an inch, the cut edge is felt for with a dull spatula, lifted up, and seized with delicate rat-toothed forceps (Fig. 11) which pull on it while the penetrating cut is finished with the severed edge of cartilage in plain view as a guide. I always operate with the right hand, no matter in which nostril the deflection lies.

Before making the first cartilaginous incision in the common double-angled deflections the anterior flap is held out of the way with the retractor which holds the nostril open or with a fine double tenaculum. The first cut through the cartilage is then made as formerly, along the entire base of the reflected anterior flap (Fig. 10, *a. b.*) In the region below the level of the anterior angle of the quadrangular cartilage, that is, below the upper boundary of the alæ nasi, the incision may be made at the very front of the cartilage of the septum, if the deflection extend so far in front, above this boundary, where the quadrangular cartilage underlies the lateral cartilage of the external nose (Fig. 12), the incision should leave a distance of at least one-half a centimeter, about a quarter of an inch, between it and the under surface of the nasal bridge in order to insure its support, for Mueller and Menzel claim to have seen slight sinking in of the nasal bridge in this region. I have never myself seen this in any case nor does Killian mention it in his description.

I no longer conduct the whole of the elevation of the mucosa of the concave side through a single anterior incision in the cartilage, but join to my first penetrating cut a short second one (Fig. 10, *b. c.*) along the base of the septum, cutting through the cartilage from without as in the first cut or else separating a little of the mucosa of the concavity and cutting through the cartilage from underneath after introducing one of the knives under it. This produces an angular cartilaginous flap (Fig. 10, *a b c*), which gives more room for freeing the mucosa of the concavity than the older single cut did, in fact the pulling aside of this cartilaginous flap gives so perfect a view of the mucosa of the concavity and of the separator uplifting it that I no longer find it necessary to watch the motions of the instrument underneath the covering of the septum from the naris of the concavity as I formerly did, nor do I even think this advisable, for one is less certain to avoid a perforation under these conditions than when the blade of the elevator is actually seen as it separates mucosa from cartilage.

When the vertical angle of deflection is situated very far forward and is unusually acute, its anterior plane extending transversely across the nostril or even curving towards the observer, I have found it best to make the first cut in the cartilage along the crest of the vertical angle of deflection, in the same line as the vertical cut in the mucosa, and to elevate the mucous membrane of the concavity of the deviation by working backward and forward underneath the cartilage from this first cut.

In the crestlike deflections the first incision in the cartilage is made vertically in the plane septum just in front of the beginning of the deflection. (Fig. 3, *c*). This plan is adhered to even when the deflection is wholly of bone, the cartilage being undermined until the bone is reached.

Separation of Mucosa on Concave Side.—The pulling aside of the cartilaginous flap described, gives such a perfect view into the pouch of mucous membrane on the concave side of the deflection, formed by the progressing separation of the mucosa from the cartilage and bone, that this part of the operation can be done much more rapidly than by my former method of working through a slit in the cartilage, and with far less danger of a perforation.

In adherent places the covering may be dissected off with exactness in full view, with the sharp elevator (Fig. 7, L). In most cases the liberation of the mucosa may be done throughout with the dulled elevator, but not infrequently places are encountered where the perichondrium or periosteum are firmly grown onto a cartilage or bone as the result of previous operations or inflammations or where vessels enter osseous substance. In such places blunt instruments fail to progress and if force be used punch through the mucous covering. In fact the safety from perforation supposed to be offered by thick, blunt instruments is imaginary, for they plunge through more readily than thin ones, as much pressure is needed to undermine with them.

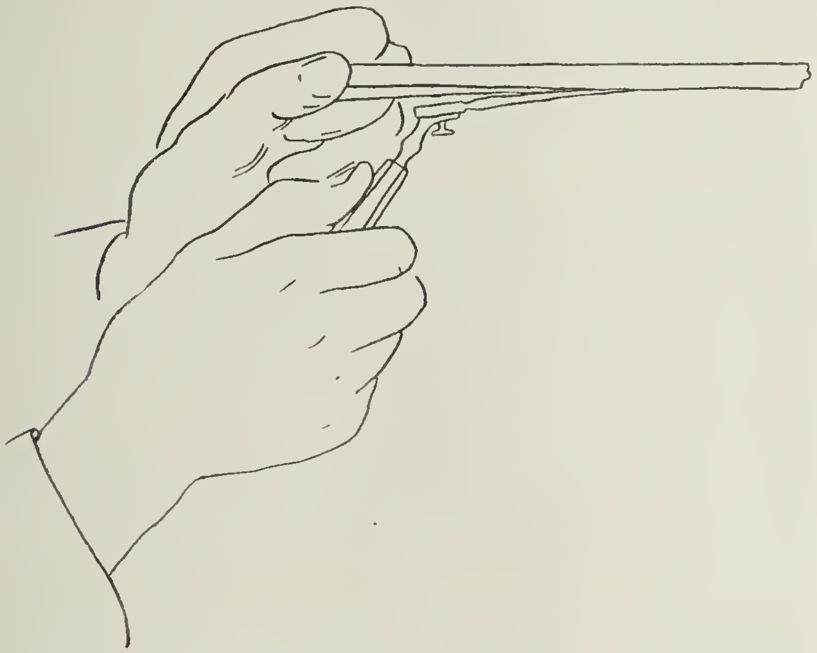
Fig. 16. Strip of bismuth lint pulled taut against end of probe for introduction.

The most difficult separation is usually found in the deepest pit or trough of the concavity and below this on the side of the vomer and crista incisiva and the separation of the periosteum from these regions may have to be deferred until the resection of the cartilage gives freer access.

The separation on the concave side is not complete until the mucous membrane hangs away from the hollow of the deflection and the septum looks straight in the nostril of the concavity.

Resection of the Cartilage.—Before cutting away the cartilage the operator must be sure that it is entirely bared of its coverings on both sides lest a piece of mucosa be torn out with it when it is removed.

I have seen no reason for changing my original method of cutting out the cartilaginous deflection. I regard this as the easiest part of the operation and commonly succeed in removing all but remnants of the deviation in the cartilage in one piece. I have not felt the need of adopting the forked knives of Killian and Ballenger which can not be used on cartilage which is thick throughout or in places, and which do not apply themselves well to abrupt bends.

The bared cartilage is pulled outward with the rat-toothed forceps, while Ingals' cartilage knife (Fig. 7, H) is introduced underneath it to the back of the pouch of mucosa on the concave side of the deflection. Its point is directed toward the convex side and its back toward the mucosa of the concavity; it is then made to prick through at the bottom and hindmost part of the cartilaginous deflection, and its blade is drawn forward, cutting from underneath outward through the bottom of the cartilaginous deviation along its whole length, thus severing it below. To cut through it at the back, an angular cartilage knife is chosen whose edge looks downward when its point is directed away from the concavity. This knife is also passed to the bottom of the mucous membrane pocket of the concavity underneath the cartilage (Fig. 13), its point turned away from the mucous membrane of the concavity, made to prick through the cartilage at the highest point in the rear of the cartilaginous deflection, and the blade is then made to sweep downward, severing the cartilage at the back. The other of the pair of angular cartilage knives is now inserted into the slit made by the first one, the handle depressed and the blade made to sweep forward, cutting through the cartilage above. The piece is now severed at all of its boundaries and is readily drawn out of the nostril.

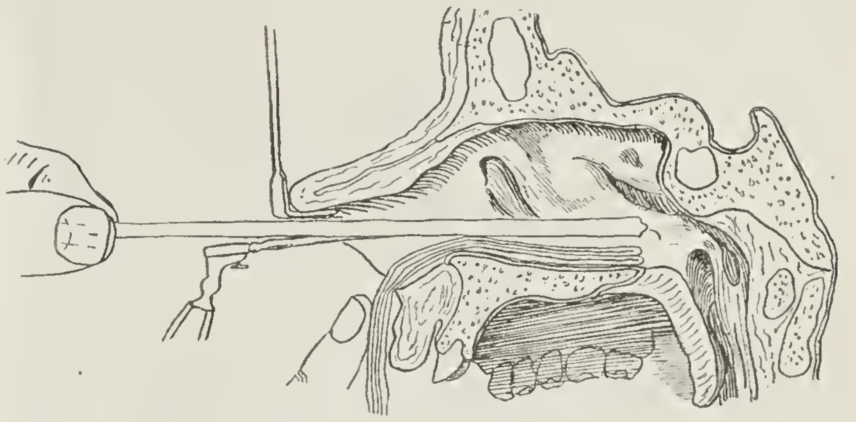
Fig. 17. Lateral view of nasal fossa. Two folded strips of the tampon lie in the naris, the loose ends being held with the finger against the upper lip. A third strip is being introduced stretched against the end of the probe.

If the cartilage be thick, repeated strokes of the knives instead of one cut will finally sever it. For very thick cartilage I have a pair with longer angular blades as a convenience rather than a necessity.

The whole maneuver is done with the aid of vision and under the intelligent guidance of the hand, so that one can exactly outline with the knives the piece to be removed. Remaining vestiges of the cartilaginous deflection may be pared off strip by strip with the angular knives, the sharp separator, or Ingals' knife, and I rarely now use cutting forceps on the cartilage.

Resection of Bony Deflections.—The punch forceps, according to my experience, removes bony deflections with more accuracy and less pain than any other instrument. It should be slender, so as not to obstruct the view and to move freely in the naris; the part in front of the lock should be straight and at least 3½ inches (9 centimeters) long, for bone may have to be cut at a distance of 2½ to 3 inches from the front of the nostril and a little length to spare is needed. The jaws should hinge on a rivet at the end of the forceps, so that they will separate widely in a small space and so that the opening of the instrument will not obstruct the view, as it does when the jaws are moved on the rivet of the lock of the forceps. The forceps should be of the punch variety, one jaw fitting within the other, instead of merely having its cutting edge applied to that of its fellow, as the latter type of instrument will not cut bone unless it be made so heavy that it blocks the nostril. In spite of the qualities of length and slenderness the instrument should be so strong that it will easily cut through the thickest and hardest bone found in the septum.

The Gruenwald forceps, which I have used for years, possesses these qualities to perfection except the last, for bone was occasionally met with which this forceps, strong as it is, could not cut through, or only after its jaws were repeatedly closed on it. I have therefore strengthened Gruenwald's forceps by giving it a forceps handle instead of a scissors handle and by other changes, so that I now have an instrument that will cut through the heaviest bone in the septum, even the crista and anterior end of the vomer, with a moderate pressure of the hand. The slenderness and length of the forceps have been preserved and the jaws open laterally instead of vertically, as in the original, adapting the instrument still better for the septum. The blades are made only partly fenestrated, a ledge remaining designed to preserve the strength of the blade and to retain the exsected pieces and keep them from falling out in the nose. My modified forceps,[1] like Gruenwald's, is made in three sizes. (Fig. 7, T). The operator needs the middle and smallest sizes. The large one is an occasional convenience.

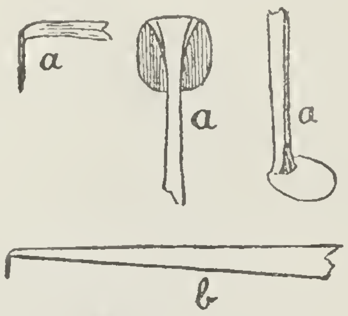

Fig. 18.—Hoe-shaped spatula for insertion into first cut in cartilage in order to pull the severed posterior edge outward so that the elevator may be passed underneath the cartilage. Useful where the deflection extends to the front of the nostril. Not mentioned in the text. *a, a, a*, enlarged views; *b*, natural size.

The forceps is made in sets of two of right and left pattern, for it is convenient to use the fixed jaw, which has a smoothly rounded end, to push away the undermined mucosa should it apply itself to the bone on one or the other side of the deflection. On one side it always hangs away, commonly on the side of the concavity.

In addition to the punch forceps a chisel and mallet is sometimes needed to cut away the crista incisiva and anterior end of the vomer from the nasal floor.

Removal of the Bone.—The bony part of the operation receives such slight mention from most authors, and the means described for its performance are so inadequate, that the inference is natural that it is frequently not thoroughly done. Yet it is often the most difficult act of the resection, and unless all vestiges of the bony deviation be removed a half result is likely to occur, for which the surgeon will always feel apologetic.

In most bony deflections, in looking directly backward in the naris of the convexity, after completion of the resection of the cartilage, the steep superior border of the vomer is seen joined above, at an angle caused by the deflection, by the anterior inferior border of the perpendicular plate or more often by a remnant of cartilage which is the posterior angle of the quadrangular cartilage of the septum. The angle of deflection mentioned is the horizontal angle in vertical section, and it appears like a V lying on its side (Fig. 14), and it is this V which is to be followed up with the punch forceps until all of it is cut away and disappears and a plane part of the bony septum is reached behind it.

Looking downward at the floor of the nose the continuation forward of the superior border of the vomer and of the crista incisiva are seen, freed of cartilage, the vomer and crista curving over towards the naris of the convexity, sometimes so strongly that they lie nearly flat on the nasal floor, making the surface belonging to the concave side look upward and simulate the bottom of the naris.

The bony resection begins with the extirpation of the posterior V mentioned. On the concave side the mucosa usually hangs away from the V, leaving a space for the forceps blade, but the mucous membrane on the convex side is often kept closely applied because the bony V is wedged firmly against the inferior turbinated body. (Fig. 15). In such cases I have often had to spring it off with the spatula in order to insert the blade of the forceps. The spatula here also protects the mucosa by holding it against the turbinate. Nevertheless, in exsecting such deepseated, extreme bony deflections it is not always possible to preserve the hindmost, invisible part of the mucosa of the convexity and it is better to sacrifice it rather than to leave a part of the deviation behind in the depths of the naris. In some cases it is necessary to resect the bone to near the posterior border of the vomer. The forceps described cleanly cuts away the bone, piece by piece, and with surprising ease.

After the resection of the V posteriorly the curved over maxillary crest and front of the vomer, on the nasal floor, next need removal. They should be reinspected to see whether they are denuded of their covering, for though it may often be readily enough lifted off, its separation over these bony parts is often so difficult that it has to be put off until the last. It is frequently firmly adherent because, as is well described by Killian, the front end of the vomer and the crista in many instances are enveloped in their own periosteum, which, therefore, covers their upper border after the cartilage has been resected from it. This periosteum is continuous with and has the same color as the perichondrium lining the inner surface of the mucosa of the concavity, so that no boundary is visible where the latter is reflected onto the bone, and the edge of the bone can therefore not be seen, but must be felt for and cut down on with the round-edged knife. In most instances the bone then has to be dissected out from its coverings by keen dissection with the sharp elevator.

When the anterior end of the vomer and the crista stand bare, they may be cut away with my forceps if they project enough to be seized with it. If not, they may be chiseled away close to the nasal floor, the resulting fragment being removed with dressing forceps. The chisel is only suited to the strong, well supported base of the bony septum and should not be used higher up on it as it is apt to break the frail bone here and create far-reaching fissures. Breaking out of pieces by twisting with forceps is also to be avoided as it causes great pain and the result of such violence may be fracture into distant regions.

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[1] Fraenkel's Archiv. f. Laryngologie, vol. xvii, p. 172.

When the resection is complete the flaps will apply themselves smoothly, the septum will look straight and the surgeon can usually see the motions of the levator palati muscle in the naso-pharynx through the nostril that contained the convexity of the deflection, in fact I regard the sight of these motions as a proof that the operation is complete and the naris properly freed. No vestige of the deflection should be left behind. If somewhere the mucous membrane of the convexity will not lie flat against the septum one may be certain that there is still a projecting remnant of cartilage or bone to resect underneath it. The concave side should also be inspected to see whether the hollow be effected.

The Tamponade.—I still use sterilized lint, impregnated with powdered subnitrate of bismuth, for my tampon, and in no case, even when the plug has been left in the nose for a week, has it become offensive. The lint is cut in ribbons ¼ of an inch wide and 10 inches long. To begin packing a strip is folded in the middle, the end being held between the thumb and index finger of the left hand, while the right pushes the end of a stiff nasal probe such as Gruenwald's, against the bottom of the fold to hold the strip taut. (Fig. 16). Its ends may also be held with the thumb and finger of the same hand that holds the probe. The strip, stretched in this manner, is passed in along the nasal floor to a little beyond the posterior end of the window, care being taken to follow along the outer wall of the naris so as not to derange the flaps. The strip is then pressed down on the nasal floor with the probe. If the resection of a crestlike deflection has left an inferior pocket of mucosa, it is to be supported by the strip. In the same manner successive strips are then introduced (Fig. 17), one above the other, until the nose is nearly full, the ends of those in the naris being held against the upper lip with a finger while the next one is passed in. As the tampon builds up it sustains the flaps so that they cannot become displaced. They are not always redundant enough to meet exactly at their edges, but a small, raw surface left by their retraction is of no moment. The last strip is longer than the others and is tucked in on top of them in successive little folds until the naris is completely filled.

This packing may be relied on to prevent hemorrhage. A free watery discharge usually sets in an hour or two after the operation and as it is tinged with blood it is apt to make the patient think that he is bleeding and to lead him needlessly to disturb the surgeon unless he be told beforehand to expect an outflow from his nose.

The removal of the packing is begun on the second day after the operation, when the top strip is removed and as much of the rest as will pull out easily. When all hold fast or if there be a little bleeding the removal of the remainder of the packing is deferred until the third or fourth day. The parallel situation of the strips prevents excessive bulging of the mucosa over the window into the naris of the concavity.

The patient only needs to stay in bed on the first day after the operation. After that he may be up and about, but should not work for a week.

For the first week after the removal of the tampon the naris is kept closed with a pledget of cotton placed in the nasal vestibule by the patient and frequently renewed. This excludes dust and keeps the mucosa moist. After this period the patient may use the nostril for breathing, is told to spray it out with normal salt solution and to insert a little plug of wet cotton in the nostril for a few hours, whenever it is necessary to soften secretion. In addition an ointment of salicylic acid, 10 grains, to 6 drams of lanolin and 2 drams of vaselin is swabbed into the nasal vestibule by the patient to prevent hardened mucus from adhering. After four to six weeks the nose needs no further treatment.

This concludes my description. To many it may seem needlessly elaborate and detailed, especially as a number of authors have spoken of the submucous resection as an easy little operation that any one may perform with a few simple instruments. I regard these statements as misleading and likely to bring discredit on the method and my experience shows me that those who make them must be either men of little experience or not thorough in extirpating deflections, especially their more difficult bony portions.

In a number of resections there are many that are performed with surprising ease, and a series of these is apt to lead the surgeon to think that all of them may be done with like facility until a succession of operations, requiring great skill and patience, show him what difficulties may be encountered, especially in completely resecting bony deflections.

I do not claim that my method is the only way, but I assure those who will follow my directions exactly that they will not fail to remove, radically, any deflection, no matter what its form, nor how deepseated it may be, and it is for their guidance that I have so minutely described a method which, since it has become complete, has invariably given me a successful result and permanent relief to the patient with a minimum of traumatism.

Of late stress has been laid by some authors on completing the operation rapidly, as if there were need for haste. As in other procedures requiring care, delicate manipulation of frail structures and deliberation, any attempt to rush the work is apt to end disastrously by producing perforations, excessive traumatism and often an incomplete result. Haste makes a forcible, rough operation of one the very nature of which is neatness, deftness and painstaking. The temptation is great to proceed in spite of hemorrhage, and to work blindly in a field obscured by oozing of blood, or to elevate the mucous membrane, or cut away bone without the use of sight. Vision of the field of operation is essential to thorough work and the avoidance of perforations.

I see no need whatever for haste. The patient is not suffering pain. Even little children have endured the operation without complaint when the local anesthesia was made as I have described. The time lost by the surgeon in deliberate work should be gladly sacrificed in the interest of a more thorough operation for his patient. The chief source of delay is the oozing of blood in spite of adrenalin, especially from the bony parts of the field. If this occurs the operator should stop his work until renewed applications of adrenalin or cocain have arrested the hemorrhage, or until it has stopped of its own accord. Always work in a bloodless field if possible, even though to do so lengthens the operation.

DISCUSSION.

Dr. W. S. Anderson, Detroit, uses the head mirror instead of the lamp. If the mirror is used over one eye the rays are parallel. It has seemed to him an advantage to use both hands in this operation, and when operating on the right nostril he makes the incision with the left hand. Dr. Freer's modification of the Gruenwald forcep is a good modification, for probably all have had some difficulty working with the ordinary Gruenwald forcep. Experimental work has shown that, at least in some cases cartilage, or very dense connective tissue, is again deposited between the layers of mucous membrane. It is surprising how firm the septum becomes in those patients who have been operated on a few months previously. In Dr. Anderson's series of operations he had a larger portion of perforations in his early cases than he ought to have had. He now has very few, and he believes that as one develops in this work the perforations will become rare; it seems to be impossible entirely to eliminate them. Fortunately the functional results are good even if there is a small perforation. Frequently rhinologists say that small perforations should not be regarded, but Dr. Anderson feels that a perforation means poor surgery.

Dr. Cullen F. Welty, San Francisco, said that Dr. Mensel's modification of the Krieg-Bönninghaus operation accomplishes the same as the operation demonstrated by Dr. Freer. He described the operation in detail, because he thinks it has many points of advantage, and is not so difficult of execution: A single incision is made in front just over the point of the cartilaginous septum, carried well to the floor of the nose. It must be remembered that the perichondrium is very adherent at this place, and particular skill must be exercised to avoid a perforation. In using the sharp or the blunt elevator the point should be kept turned well to the septum. Through this incision the whole of the deflected part of the septum is removed. After removing some of the cartilage the nasal speculum can be introduced into the cavity, and every step of the operation can be followed by the eye. After the perichondrium and mucous membrane have been sufficiently elevated on either side to overcome the obstruction the cartilage is cut above and below with small scissors; after this a sharp double curette is used to remove as much of the cartilage and bone as is necessary. This may also be removed by a strong forceps, with a twisting motion. In some instances a spur will be encountered. The perichondrium and mucous membrane are more adherent at such places, and particular care must be used not to cause perforation. The chances are very small of making a perforation on both sides at the same point. If the perforations are at different places the septum will be perfectly good. In case there is a thick, bony spur, which can not be removed with a double curette, a small chisel is very useful. In case an operation of any kind has been done previously on the septum the perichondrium is unusually adherent, and a perforation is most likely unless great care is observed. Twenty per cent. solution cocain is rubbed well into the mucous membrane on both sides of the septum until the patient can not feel the friction; 0.1 per cent. Schleich's solution is injected into the line of incision and on both sides of the mucous membrane until it becomes white. Adrenalin aids in keeping the operative field free from blood. The instruments necessary for this operation are nasal speculum, blunt and sharp elevator, double curette, small scissors, small chisel, anatomic forceps, two blunt retractors and, in some instances, a needle and thread. This operation originated by an accident, and Dr. Welty was the one to suggest its present form. He made a perforation by the old method, and maintained that had he not cut away the mucous membrane of the other side this perforation would have closed when brought in apposition. This happened some two years ago, when he had an *Arbeitsplatz* in Hajek's clinic. He stated that the only point to which exception can be taken is that in this operation the incision begins at the tip of the cartilage, while in the other operations it begins at the point of deflection. It remains to be demonstrated that harm can be done by removal of this anterior part.

Dr. Hill Hastings, Los Angeles, said that in the operations on the bony septum he has not been so successful. Particularly under ether he has had a good deal of trouble, so that he has almost doubted the wisdom of operating under a general anesthetic. He operated in two cases that were failures under the Ashe operation, and in one case got a good result and in the other case a fair result. He asked the position of the patient recommended by Dr. Freer, and any difficulties he encountered under general anesthesia, and whether he has had any mortality or any trouble that might be attributed to the anesthesia.

Dr. George L. Richards, Fall River, Mass., said that if the operator has two assistants he can put the patient down and lift up the nose as Dr. Freer describes, but many have to operate with one assistant. Dr. Richards usually operates with the patient in the upright position. He has not had difficulty with the patient fainting. He tells them at the beginning that they will probably feel faint and sweat a few minutes. After this the anesthesia seems more profound and the patient will not give trouble by fainting. He always has the nurse stand immediately behind the patient. When it comes to using the chisel, he has taught his nurse to give a graduated blow just as the dentists teach their assistants. There will be very few perforations by any method if the operator can get all the cartilage off without injuring the opposite side. If one sets out to do the operation Dr. Welty has just described, which is practically the same as that of Killian, and one does get a perforation on one side, it does not matter, for then it is simply converted into another form of operation. Perforation in the old operations occurred so frequently because the operator did not get the two mucoperichondrium surfaces together. If these are separated by a bit of cartilage they will not unite. Dr. Richards thinks Dr. Freer did Dr. Killian a little injustice. He did not mention that the Killian knife has a double cutting surface. Dr. Ballenger's knife is arranged so that it may be used with facility. It is useless to say how many minutes is required to do the operation. What is desired is a good result from the operation rather than any saving of time. The operation that can be done in the simplest way and in the shortest time by most operators is through an incision somewhere in front. The muco-perichondrium is more adherent in front. To Dr. Richards the most satisfactory operation is with an incision in front, where the edge of the cartilage presents, such as Heik recommends, or a little farther back. Then with anything in the way of an elevator the perichondrium can be slipped back and the separation made. He does not attempt to remove any of the cartilage until the separation is complete. Then the cartilage and bone can be easily removed. It seems to him impossible that the forceps will do all that Dr. Freer states; he prefers a chisel on the nasal floor.

Dr. George F. Cott, Buffalo, N. Y., declared each succeeding year makes the operation more difficult to understand. Dr. Welty has cut down the operation about 75 per cent., and Dr. Cott would like to cut down about one-half of the after-treatment. There is no difficulty from bleeding after the first twenty-four or forty-eight hours, and the patients may be permitted to breathe through the nose on the third day. In regard to perforations, in the ten cases in which Dr. Cott has operated during the past year, none of the patients have had perforations. It makes no difference whether part of the mucous membrane is destroyed on one side so long as the other side is intact. The instrument Dr. Freer has described, to go back through the posterior part of the nose and cut forward, may be useful in Dr. Freer's hands, but probably will not be popular with the profession in general.

Dr. L. C. Cline, Indianapolis, said that the lesson to be drawn from the great number of instruments recommended is not to make more instruments, but to see if we can not get along with less. He uses comparatively few instruments. Dr. Cline does not believe in making very extensive cuts in the mucous membrane. After making a small cut the membrane can be stretched and forceps and chisel can be used to remove the septum. Very little packing in the nose will cause pressure. The cartilage and bone should be cleared out so that it requires only sufficient packing to hold the membrane in place. It is better to leave the nostril open as much as possible so as to have the stimulation of the air.

Dr. Gardner Perry Pond, San Francisco, declared that Dr. Freer's position as to the trouble and inconvenience from frequent attacks of syncope on the part of the patient is well taken. It is extremely annoying. He does not understand the objection to general anesthesia in these cases. If a posterior plug is put in while doing the work in the anterior part of the nose it will do away with the draining back of the blood into the throat. Dr. Welty's operation is beautiful for a simple cartilaginous bend, but when there is a posterior bony ridge, or one low on the floor of the nose, the procedure he suggests will not enable the operator to get at it readily. The trephine on the dental engine works well in these latter cases. With it one can take out the greater portion of the bone and the rest may be trimmed out with forceps.

Dr. George A. Leland, Boston, agreed that there is an advantage in using few instruments. He was much impressed with Jansen's operation last summer because of its simplicity. This operator uses only a nasal speculum, a small scalpel, dressing forceps, a rather sharp elevator, and a cutting forceps, finishing with a needle holder and needle to suture the edges of the wound. If there is a bony exostosis he may also need a chisel, the mallet being used by an attendant. With these few instruments the operation is performed with marvelous neatness and dispatch. The great question in these operations is as to whether some time in the future there may not be a depression of the bridge. This operation has not been in vogue long enough to be sure that this result may not follow. A recent writer* says that if the cartilage is removed too high up the bridge of the nose may sink in. Hence comes the question how high up is one justified in removing the firm part of the septum. It has been said that this is not a support, but only a partition. To sustain this view a few cases of the loss of the whole of the septum without depression in specific disease are cited. Here, however, the question of time must come in. We frequently see a recent loss of septum where there is no depression, but after a number of years the relative positions may be much different. Dr. Leland said that this brings to mind a case seen some fifteen years ago. A physician from the far East desired to have a very much sunken bridge of his nose restored to its former position. He was about 50 years of age. When he was a student at the Bowdoin Medical College, Dr. Green, Maine's most eminent surgeon, in order to give him breathing space, with a scalpel removed the projecting part of a deflected septum from the left nostril. This made a very large perforation through the septum and yet there was a considerable amount of cartilage in the apex between the wings. The bridge remained up for a number of years, but after 20 or 25 years it had sunk in so as to produce a marked deformity. This would seem to show that the septum is a support as well as a partition. It is said by some that the cartilage is reproduced between the two layers of the perichondrium after they are brought back to the position we wish to obtain. It is said also by others that there is no production of true cartilage, but that between the layers of the perichondrium round celled infiltration takes place, which, according to its law produces a fibrous layer. In such cases, therefore, there may be not only the action of gravitation, but also that of contraction of this fibrous tissue, a double reason for sagging of the bridge. Of course this is only one case, but rhinologists have not yet been doing this operation more than about nine years, at least Jansen has been doing it nine years; hence Dr. Leland thinks that they are not in a position now to tell whether these bridges are going to sink in or not, and he cautioned taking away as little of the cartilage as possible, as he is by no means sure that some bold operators may not be producing noses which will be greatly deformed after they who have produced them have passed on beyond the reach of adverse criticism and lawsuits.

A. A. Greene, Anniston, Ala., said that Dr. Leland's remarks reminded him of a case he saw in which a large perforation had existed for over 35 years. The patient was a physician who had had the perforation when a student. The perforation is almost as large as a half dollar and there is no depression of the nose whatever. If the bony support is removed to a great extent there probably will be depressions, but sagging will not necessarily result from removal of the cartilage.

Dr. A. DeVilbiss, Toledo, Ohio, said that he believes that there is much less danger of the ultimate production of a saddle-back nose if the membrane is all dissected back and membrane, bone, cartilage and all removed than when the membrane is left. For the last twenty years it has been his custom when there is a little hole in the septum to cut out enough bone and cartilage to have mucous membrane enough to cover the edge of the hole; this prevents crust formation. He would do the same were he to make an opening in the septum to secure free inspection. The long-continued pulling on the bridge is an important factor; there may be a depression from the constant drawing. Fibrous tissue will fill in the part where bone is removed and cartilage will grow in again when cartilage has been removed. Dr. DeVilbiss does not advise making promiscuous openings in these cases; the cases should be carefully selected.

Dr. John F. Barnhill, Indianapolis, said that on several occasions this subject has come up in the Section meetings of the American Medical Association, and it has always brought out a great deal of discussion, certainly sufficient to give us to understand that this is not an operation for everyone to do and to expect to get satisfactory results in each case. These operations are difficult to perform. Each patient should be studied carefully and a suitable method devised for the particular case before the operation is begun. If rhinologists were to follow any one method in all the cases, disaster would result in a great many. After having done the operation as Dr. Freer directs it looks less formidable to Dr. Barnhill than before. Dr. Barnhill does not so often find the typical ridges Dr. Freer mentions, and often the mucous membrane is densely adherent, so that he has not been able to remove the cartilage without great danger of perforation. Some of Dr. Freer's instruments, especially those he uses for lifting the alæ of the nose, Dr. Barnhill has been unable to use. His assistant seems never able to hold the nostrils in as good position as can be secured by the use of the Myles speculum. He called attention to that class of angular deflection in which the crest lies so low in the nostril as to be apparently imbedded in the tissues of this region. If only the deflected portion above this low lying ridge is removed in the dissection, and the imbedded portion not included, that portion of the cartilage still remaining on the floor would hold the membranous flaps in a position far to one side, and practically so nearly in the old position as to give entirely unsatisfactory results. Dr. Barnhill has operated in several such cases, one of which failed because the exact condition was not previously recognized. The typical case as described by Dr. Freer has been somewhat uncommon in Dr. Barnhill's practice, and, therefore, he has been unable to follow the exact technic in a majority of cases. It has been said that small primary incisions are sufficient, but he has not found that true. He always feels better satisfied if he has a large opening through which he can see well, and use his instruments freely. The cartilage can be taken out rather easily, provided it is not greatly thickened or too angular at any point, with the Ballinger knife. When operating near the posterior end of the septum, the operator must do clean work, and this can not be accomplished by twisting and gouging, but only by the use of an instrument that will clearly cut off the parts without injury to the surrounding tissue. The burr has been mentioned as useful in the removal of the posterior bony part in these cases, but Dr. Barnhill does not believe the use of the burr permissible because it is apt to leave splintered parts in the deep membranous pocket which the operator may not be certain to remove. He does not believe any surgeon who is going to close up his wound would think of using the burr. The cutting forceps is much better. The fragments liable to be left by the burr would be irritant and would probably break through later, as would any other foreign body. He does not believe that there is any danger of saddle-back noses, provided nothing is done that will set up such violent inflammation as to cause the adhesions spoken of by Dr. DeVilbiss. The cases of saddle-back noses caused by syphilis are due, not to the fact that the septum is gone, but to the gummatous infiltration with subsequent adhesions which have pulled the tissue down. In submucous resection work, we do not think of causing any such reaction or subsequent contractile tissue.

Dr. Robert C. Myles, New York, said that in 1896 he read a paper (The Journal A. M. A., Sept. 28, 1896), in which he said that he had been operating for several years for the relief of this class of cases with very satisfactory results. He stated that there are two conditions which confront the operator in these cases: a projecting anterior extremity of the triangular cartilage which extends across the vestibular space and approaches the margin of the ala; and the various forms of deflections with more or less thickening of the convex side of the cartilage. In the first class of cases, the space between the ala and the projection is so narrow that when inspiration takes place in a rapid manner the atmospheric pressure forces the ala against the cartilage. These patients become accustomed to contracting muscles of the side and front of the face for the purpose of pulling the ala away from the cartilage. Others sleep with the hand on the cheek, instinctively elevating the ala. This condition, Dr. Myles said, may be overlooked, especially when the nasal septum is involved, consequently it is well to test the inspiratory capacity with the mouth closed and with each nostril respectively closed. Dr. Myles said that he has had little success in attempting to replace the cartilage by fracturing the convex cartilage in the opposite nostril and then keeping the fragments in apposition with mechanical appliances until union takes place, and described the method of procedure in detail with the instruments used. He stated that in the majority of cases the wounds heal by first intention and that the after-treatment consists in filling the vestibule with aseptic cotton and leaving it in place for from two to three days. The results, he said, are beneficial in a respiratory sense; the appearance is much improved and a decided improvement is noted in the quality of the voice. Another form of stenosis which ought to be considered, Dr. Myles said, is caused by a deflection and circumscribed growth or enlargement on the convex side of the triangular cartilage; this also can be relieved by this method of subperichondrial dissection.

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* Müller: The Technic of Kreigs Window Resection. Archiv. f. Laryngol., vol. xv, No. 26.

Dr. Otto T. Freer, Chicago, said that the head mirror gives rays parallel to the axis of the eye looking through the hole in the mirror, as well as does the Kirstein light, but he stated in the paper the use of the head mirror implies a light to reflect from, which dazzles the operator and limits the freedom of motion of his head. The Kirstein light, though not a necessity to the operation, permits more accurate work than does the head mirror, for it enables the surgeon to approach his eyes closely as he wishes to the operative field, so that even a presbyopic individual by the use of strong convex spectacles can get a magnified image of the details of the naris. This is of especial value in operating in the little nostrils of children. With the head mirror Dr. Freer is not able to get nearer to the work than 12 inches; with the Kirstein light he can approach to five when he wishes to look closely. Operators who are presbyopic or hypermetropic should always see that they have strong enough glasses before beginning the resection. He always uses the right hand for operating. Ambidextrous persons have an advantage here. Dr. Freer has often seen the firmness of the septum restored, but he can not state whether it was made so by hyaline cartilage, as a histologic examination was of course not possible. In children, the solidity of the septum is reproduced in a few weeks because of the great formative energy of their tissues. He agrees with Dr. Welty that the method of Menzel and Hajek is less elaborate. The question is, does it accomplish the object as well? Is it an advantage to confine oneself to a few instruments, and are such simple implements well adapted to fit all types of a deformity presenting such great variations in form, degree and difficulty as does deflection of the septum? The method of Menzel favors perforations, and what is worse, incomplete operations on the bony part of the deflection. In addition, by beginning always at the front from the free border of the septum, a certain amount of perfectly straight septal cartilage is sacrificed in order to reach deflections beginning deeper in the nose, an objection to Menzel's procedure urged by Weil. The elevators known as Hajek's in this country are used in the Menzel operation, and have been extensively introduced here. Dr. Freer admitted that they are few and simple, in fact only two, but they are thick and clumsy and too large for deflections. They would fill the nostril of a child, and one often has to operate on children. A thick, blunt elevator, like Hajek's blunt one, is liable to plunge through where the mucosa is adherent, because force is necessary to undermine with thick implements. Menzel's method is well adapted to certain cartilaginous deviations where the separation is easy, but not to difficult resections where there is much adhesion of mucosa or where the bony septum is involved. All the German methods of performing the window resection are marked by a certain roughness. German authors speak of breaking out of bone and cartilage with dressing forceps; in fact, Mueller attributes some slight depressions of the nasal bridge he mentions as due to his having broken out cartilage under it. The cartilage should always be cleanly cut away and never broken or twisted out. Dr. Freer said that he has heard before the assertion that the operation may be done with a few simple instruments that do not even need to be specially made for it, for the man is always with us who thinks that he can do offhand with his jack-knife what others accomplish by taking pains with proper tools. Some kinds of rough wood work may be done with an ax, but if Dr. Freer wanted finely finished cabinet work he employs an artisan who has a full set of tools; planes, chisels, squares and everything. Those unfamiliar with the operation should not be deceived into thinking that it is so simple in every instance that the use of instruments especially fitted for the purpose may be safely discarded. Those so poorly equipped will be apt to abandon the operation after encountering a few difficult cases or else will get the proper outfit for the work. The chief reason for a larger instrumentarium is that there are odd intricate cases that require odd instruments. He fashioned his original blades from steel forms on small grinding wheels, run on an electric lathe. According to the lessons taught him by cases as they arose, he changed his models until they reached a state which required no further alteration. A special feature of his instrumentarium, permitting rapid and neat work, is the presence of a number of keen thin blades for dissection, a feature lacking in many other collections of instruments; their devisors seeming to have the forcible pushing off of the mucosa from its attachment chiefly in mind. Keen dissection is, however, constantly required, because of the frequency of adherent places. Scissors he does not regard as at all adapted to the work, and he never uses the saw. In reply to a question about general anesthesia, he said that he has never used it for adults nor for children over 11. For children of 11 or younger he uses just enough chloroform to make them unconscious of their surroundings, but relies on the cocain local insensibility to subdue pain. Dr. Freer said that Dr. Richards' experience in respect to spells of faintness is not in accord with his. Though he has never had a patient in actual syncope from sitting up, he has had a number come close to it, and so thinks it preferable to do most of the work with the patient lying down. He can see no reason for trying to make the operation a speedy one at a sacrifice of exactness. The patient does not suffer, and haste means careless work and perforations. He requires from one-half to one and one-half hours, according to the difficulties met, and can not understand the statement of Killian that he completes his operation in the average time of twenty minutes, nor how any one can radically and neatly resect deflections in such a rapid manner. He agreed with Dr. Cott that in most cases the danger of spontaneous bleeding is over in twenty-four hours, but if the packing be removed at this early period it is apt to start a fresh traumatic hemorrhage, because the tampon still adheres to the mucosa, while by the fourth day it is covered with slippery mucus and may be pulled out readily. He has had some very exciting times in the few cases in which he allowed himself to pack loosely, profuse delayed hemorrhage occurring a few hours after the operation, so that he is not satisfied now unless the packing be even and firm. He has had no bleeding since he has used my present method of tamponing. He thinks it reckless not to pack at all, and strongly advises against it. He has never needed to tampon the nasopharynx while operating. What little blood escapes the swabs and flows back into the nasopharynx is swallowed unnoticed by the reclining patient. He used the dental engine a great deal in his earlier work, but since he has new bone-cutting forceps he has practically discarded it. The trephine works more or less in the dark, is hard to control, tears up the mucosa and bores into unknown depths in a way that is uncanny. The burr he finds less efficient than the trephine. Dr. Freer said that he is sorry that such theories as the possibility of depressed nasal bridges and formation of cicatricial tissue in the septum are being raised to delay the advance of a method that removes all deflections so certainly and with so little injury to the patient as does the submucous resection. The purely fanciful objection made is not borne out by any recorded experience, in spite of the fact that Krieg reported his first window resections in 1886, nineteen years ago. Surely, that is time enough for the formation of cicatricial retraction. Dr. Freer has examined a number of his earliest patients, but in none of them was there the slightest evidence of sinking in of the nasal profile or of any cicatrix in the septum whatever. Instead of that, in all of these cases there was a complete or nearly complete replacement of the firmness of the septum. If a cicatrix were going to form it would surely begin to show some of its evil effects in the course of the four years that have passed since his first operation, for scars in the other parts of the body are not so slow in creating retraction, and at least some cicatricial drawing in of the mucosa of the septum would be seen, yet he has never observed anything resembling it. A large perforation, as suggested, would make the nasal chambers unduly roomy and lead to crusting on its edges. Dr. Freer has never seen sinking in of the nasal profile as an immediate or early result of the operation. He has often resected the cartilage from its free border to the bony septum, and as high as the perpendicular plate, and has never seen sunken noses as a consequence, even in the least degree. Killian, with his great material, reports no such deformity. Mueller and Menzel, however, mention slight sinking in of the profile in a few cases, and think it due to resecting the cartilage too closely under the triangular cartilages of the external nose; that is, directly under the nasal bridge. Dr. Freer suggested in his article that a narrow strip should be preserved in order to be in accord with their experience, although it is unique. The submucous resection is an operation for the rhinologist, requires the proper outfit and above all rhinologic skill, and is not for the general surgeon. It would be surprising if Dr. Myles had not thought out the principles of the window resection long ago, as he has thought out most of the things we think new, and he has certainly established his claims to be among the first by the reprint he has shown us to-day. Dr. Freer called attention to another misleading remark often made, that the mucous covering may be peeled from the deflection as easily as the rind from an orange. It peels off easily very often, but just as often does not, and it is in these adherent cases that minute, careful dissection is needed to avoid a perforation.

Special Article

IMMUNITY.

CHAPTER XXVII.

TUBERCULOSIS.

Tuberculosis is as old as the history of medicine, and its contagiousness was assumed but not demonstrated at a very early period. Klemke in 1843, but more particularly Villemin in 1865, demonstrated the infectiousness of tuberculosis by animal experiments, and these results were substantiated later by such investigators as Klebs, Chauveau, Baumgarten and Conheim. As the era of specific microbic etiology developed search for the germ of tuberculosis began and for a period a number of organisms were erroneously considered as the cause. Of these the *Monas tuberculosum* of Klebs obtained considerable prominence. Baumgarten first saw the tubercle bacillus in sections of tubercular material from which the tissue cells had been dissolved by potassium hydroxid, and at almost the same time Koch succeeded in demonstrating its presence in all tubercular lesions by a special staining method. He eventually obtained the organism in pure cultures with which he again produced tuberculosis in experiment animals.

Characteristics of the Bacillus.

The tubercle bacillus is an obligate aërobic parasite, has the form of a slender, non-motile, non-flagellated rod, often slightly curved, from 2 to 4 microns long and from 0.3 to 0.5 microns broad. In stained and even in unstained specimens, when properly treated, a number of spherical, oval or elongated clear spaces can be seen which at one time were thought by Koch to be spores. They are now considered either as vacuoles, or as representing some form of degeneration or reserve nutritious material. True spores have not been positively demonstrated, although their existence is upheld by some observers. The organism is supposed to possess a membrane which may be responsible for the rather strong resistance against heat and desiccation which the bacillus manifests. Feinberg speaks of a nucleus which may be demonstrated by a modified Romanowsky stain. The organism shows many variations in its morphology under different conditions. It often exists in isolated clumps, either in cultures or in tissues, and may be excreted as such in the urine. In certain cultures and sometimes in animal tissues it grows in the form of longer or shorter branching threads, in this respect resembling the actinomyces. This last occurrence has led a number of authorities to class the tubercle bacillus as a streptothrix, while others would give it an intermediate position between true bacteria (schizomycetes) and the streptothrix (a hyphomyces). An oval or spherical degeneration form of the organism is found in advanced tuberculosis of the lymph glands and other organs in which there is a great deal of necrosis. These have been called the capsules or, more properly, the corpuscles, of Schrön.

Staining Properties.

The tubercle bacillus is one of a group of organisms which are said to be "acid fast" in their staining properties. When stained with the carbol fuchsin of Ziehl and subjected to the action of mineral acids in dilute solutions the fuchsin is not removed. After this treatment it is customary to counterstain with an alkaline solution of methylene blue. In such a preparation the tubercle bacilli appear red, whereas other organisms which are not "acid fast" are stained with the methylene blue. It is not difficult to recognize the bacilli in sections of tissue when the proper technic is used, although the search is at times a laborious one. In old processes the organism often can not be recognized, and recourse to animal inoculation may be necessary in order to demonstrate the existence of tuberculosis.

Pure Cultures and Culture Media.

It is ordinarily a difficult technical problem to obtain the tubercle bacillus in pure culture, the technic of which we need not consider. Even under the best conditions growth is very slow, and may not be recognizable to the naked eye for from six to ten days. Coagulated serum of the cow to which has been added from 2 to 4 per cent. glycerin is the most favorable culture medium. Good growth occurs also in glycerin agar and in glycerin bouillon and on potatoes. The optimum temperature is 37 C.; growth does not occur above 42 nor below 30 C. When a small amount of culture is planted on the surface of the glycerin bouillon it proliferates slowly to form a heavy membrane which extends over the surface. In time this growth sinks from its own weight and a new membrane forms. This process continues until large masses have accumulated at the bottom of the flask.

Resistance.

The organism is very resistant to desiccation, living approximately three months in dried sputum. Only spore-forming organisms exceed the tubercle bacillus in their resistance to desiccation. Sputum appears to give it a certain protection against desiccation and light. Direct sunlight destroys it in a few hours at the most, whereas diffuse light kills it only after from five to seven days (Koch). It is said that the guinea-pig when exposed to sunlight withstands tuberculosis for a longer time than one which is kept in the dark. Roentgen rays are bactericidal for the organism, killing it in about one hour (Rieder). Under moist heat a temperature of 55 C. kills it in from four to six hours, 60 C. in one hour, 70 C. in from ten to twenty minutes, 80 C. in five minutes, from 90 to 95 C. in from one to two minutes. When embedded in sputum it is more resistant, five minutes being required to kill it at the boiling temperature. Corrosive sublimate is not a good disinfectant in this case, inasmuch as it produces an albuminous precipitate around the organism which prevents penetration of the sublimate. Five per cent. carbolic acid added to equal parts of sputum kills the bacillus in twenty-four hours. Formalin vapor is a good disinfectant for dry, but not for moist sputum. Iodoform is not a good disinfectant, in spite of its beneficial influence on the infectious process. The resistance of the bacillus to gastric digestion has an important bearing on the occurrence of infection in the intestinal tract.

The gastric juice of the dog, in one instance, failed to kill it after six hours' exposure, although it had the power of prohibiting proliferation.

Virulence.

The bacillus of human tuberculosis, although fairly constant in its virulence, may be attenuated by various means. Its prolonged existence in putrid sputum decreases its virulence and a similar decrease occurs on potato, in old cultures or in those which contain iodoform, boracic acid and some other substances. Inoculation with such cultures produces a chronic form of tuberculosis in animals which may heal. In other instances cultures which have grown on artificial media for many years retained their original virulence.

The organism contains about 90 per cent. of water. One-fourth of a dried bacterial mass may be extracted as a wax-like or fat-like substance by a mixture of alcohol and ether. The acid-fast staining property of the bacillus depends on this substance. The remaining portion of the mass, consisting largely of proteins, which may be extracted by dilute alkalies, contains a toxic nucleo-albumin. Cellulose, representing a portion of the capsular substance, is also found in the residue.

Toxic Products.

Killed cultures when given subcutaneously produce necrosis, abscesses, caseation, marasmus, and a subnormal temperature. When given to rabbits and guinea-pigs intravenously they cause rapid emaciation and death in from a few days to a few weeks. By beginning with very minute doses, however, the animals may be gradually habituated to intoxication by the dead bacilli and eventually withstand large doses. The same holds true of the various toxic substances, including tuberculin, which may be extracted from cultures. The proteins and alkaline extracts cause abscesses when given subcutaneously. The fever-producing substance which is present in the preparations mentioned below is one of the metabolic products of the bacillus, rather than a constituent of the bacterial cell (Koch). This substance is 100 times as toxic for tuberculous animals as for healthy and causes an increase in the eosinophiles of the blood. In addition to the fever-producing substance, Maragliano and others recognize as a constituent of the bacillus a heat susceptible "toxalbumin" (destroyed at 100 C.) which reduces temperature. Hammerschlag speaks of a toxin which in animals causes fatal convulsions. The toxic products of the tubercle bacillus show their greatest toxicity when injected into the brain, and this method of injection has been suggested for the standardization of tuberculin.

Tuberculin.

Of the toxic preparations of the bacillus the greatest interest attaches to tuberculin which Koch, in 1891, announced as an agent which could be used for the specific diagnosis of tuberculosis and which, when properly administered, had certain curative effects. Its preparation is simple. Cultures are allowed to grow for four weeks in peptone bouillon which contains 5 per cent. of glycerin. At the end of this time the organisms are killed by exposure to a temperature of 100 C. for one hour (Marx). The fluid is reduced to one-tenth its original volume by evaporation under a vacuum at a low temperature and the bacterial cells are eventually removed by filtration. The percentage of glycerin which is present in the final preparation acts as a preservative, but 0.5 per cent. carbolic acid may be added in addition. The active substance in tuberculin may be precipitated by 66 per cent. alcohol; its chemical nature remains unknown.

"TA" and "TR" Preparations.

In addition to the "old" tuberculin, which has just been described, Koch has prepared several variations of the substance, the use of which has been proposed for diagnostic and curative purposes and for convenience in carrying out the agglutination reaction. One of these, "TA," is an alkaline preparation which is made by extracting cultures with 1/10 normal sodium hydroxid solution. Its value as a diagnostic was equal to or exceeded that of tuberculin because of the longer duration of the reaction. In view of the fact, however, that it contained undissolved cells, which caused the formation of abscesses at the point of injection, its use was not encouraged. For purposes of immunization Koch prepared a fluid which contained all the bacterial constituents and which at the same time is readily absorbed without abscess formation. For its preparation dried masses of the organism are ground up in an agate mortar and after suspension in distilled water and centrifugation, the emulsion consists of two layers. The overlying opalescent whitish fluid was designated as "TO" (Tuberculin Obers). After removal of the fluid from the precipitate the latter was again dried and ground, suspended in water and centrifugated as before, and the process repeated until none of the sediment remained. The different fractions of fluid, except the "TO," were combined to constitute "TR" (Tuberculin rest), which is really an emulsion of minute fragments of cells. It is readily absorbed and does not cause the formation of abscesses. This is commonly called Koch's new tuberculin. Still another preparation which Koch has recently devised for active immunization and for convenience in performing the agglutination test consists of dried and ground up bacilli which are suspended in equal parts of glycerin and water, *Neutuberculin* Koch (*Bazillenemulsion*). The immunizing value of these preparations will be considered in the next number of The Journal.

Other Tuberculins.

Preparations which in many respects are analogous to those of Koch have been made by different investigators: the tuberculocidin of Klebs, the tuberculins of de Schweinitz and Dorset and that of Denys, the two toxins or tuberculins of Maragliano, which he utilizes for the preparation of antitoxic serums, the oxytuberculin of Herschfelder, the "TD" and the "TDR" of Behring and the tuberculoplasmin of Buchner. Marmorek claims to have produced the true toxin of the tubercle bacillus by growing young, vigorous cultures on a complicated medium, denying that tuberculin represents the true toxin of the organism.

Standardization.

Tuberculin can not be standardized with accuracy. From the fact that tuberculous animals are extraordinarily susceptible to injections of tubercular preparations Koch decided to estimate the value of tuberculin by determining its fatal dose when injected in tuberculous guinea-pigs. From 0.5 to 1 c.c. of tuberculin, when injected into a healthy guinea-pig, causes neither a local nor a general reaction, whereas from 0.1 to 0.15 c.c. kills a tuberculous guinea-pig in from twenty-four to forty-eight hours. This phenomenon will be considered later in connection with the so-called agressins of Bail. For standardization von Lingelsheim recommends intracerebral injection into healthy guinea-pigs, because of the extreme toxicity of tuberculin when introduced into the central nervous system; only 1/180 as much tuberculin was required to cause death by intracerebral injections as compared with subcutaneous or intraperitoneal. Behring bases the value of tuberculin on its toxicity for healthy guinea-pigs and in his terms the expression " 1 c.cm. = 1,000 M." means that one gram of the toxin is fatal to 1,000 grams of guinea-pig tissue. His "TD" has a value of 1,250 M., and "TDR," 12,500 M.

(*To be continued.*)

Clinical Reports

CASE OF EXTREMELY LONG PREGNANCY.

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I have had an exceptional opportunity for obtaining accurate data in a case of long pregnancy, and later, of finding what seemed to be the probable cause.

Patient.—Mrs. T., aged 46, height 5 feet 5 inches, weight 155 pounds.

Previous History.—The patient has always enjoyed good health; she has had nine normal confinements, her oldest child being 23 years old, the youngest 5 years, all living; she never had a miscarriage and never vomited except when pregnant. She has always vomited for the first three months of pregnancy, and has never been more than a week out in the expected date of confinement. Menstruation was always regular till the last child was born, since which time she has occasionally missed one or two periods, which she thought was due to a change of life.

History of Pregnancy.—June 29, 1904, she commenced vomiting, and a few days later menstruation failed to appear. July 1, 1904, her husband, whose work called him to Idaho, left here, and did not return till sometime after the confinement. When he left both patient and husband considered that she was pregnant. During the entire pregnancy she lived here with her seven children. The last menstruation commenced June 5, 1904, and lasted till June 9. Vomiting commenced June 29, 1904, and lasted till March 1, 1905. Fetal movements were first felt Oct. 15, 1904.

Examination.—About April 1, 1905, she began to worry about going overtime and sent for me. Examination showed appearance of full term; child in L.O.A. position; fetal heart in left iliac region, 132 beats to the minute; movements very active. Patient's urine was normal.

Further History.—I left her, assuring her that there was no cause for worry, and as far as I could make out everything was all right. During April I heard from her frequently, and told her to take considerable exercise in the open air, hoping that this would start up the pains.

On May 8, 1905, I made another examination and the following notes: "Uterus quite large, fetal heart in left iliac region, 132 beats; position of child L. O. A.; movements very active; head above brim. At the external os, two rounded masses are felt which seem to be attached to the cervix."

By this time I was becoming anxious about letting the case go any longer, as the uterus was very large. The patient was also getting tired of waiting, so I promised if labor did not start by next day, to induce it. As nothing had happened by next day, I prescribed capsules of quinin sulphate grs. 5, one every four hours, and after taking four, the pains started.

Labor.—The first stage of labor started at 12:15 a. m., May 10, 1905. At 2:15 a. m. the water broke (moderate in amount), and at 2:30 a. m., when I arrived, the pains were quite strong and frequent.

During the second stage, while the head was coming down, and while I was making an examination, I felt two masses (which I had noticed at a previous examination) descending. I then realized that some abnormal condition was present, and were it not that the position of the child had been made out so plainly previously, I could easily understand how a snap diagnosis of breech presentation (these masses felt exactly like testicles) could have been made. At 4 a. m. an anencephalic monster was born. The masses which had puzzled me now proved to be the exposed brain. The third stage terminated at 4:30 a. m., May 10, normally, no laceration or hemorrhage occurring. The puerperium was normal in every respect.

Description of Child.—The child was a large male, well developed in every respect except its head. One hour before birth the fetal heart was distinctly heard, and the movements were very active, but when the child was born no attempt at respiration was made.

The following measurements and observations were made: Length, 22½ inches; weight 10 pounds (appeared much heavier); circumferences: bisacromial, 16 inches; bistrochanteric, 14 inches. The placenta was large, oval, 1½ pounds and normal in every respect. The cord was 36 inches long, of moderate volume, no knots and apparently normal.

Remarks.—The cause of the prolonged pregnancy in this case may have been partly due to patient's age, 46, and the number of previous pregnancies producing uterine sluggishness, but the peculiar condition and shape of the head, preventing engagement and suitable pressure on the os uteri, probably had more to do with it. It might have been interesting to have known how long this case would have gone had no quinin been given to cause uterine contractions.

Summary of Duration of This Case.—From commencement of last menstruation, June 5, 1904, 339 days; from last intercourse, July 1, 1904, 313 days; vomiting lasted from June 29, 1904, to March 1, 1905; quickening occurred Oct. 15, 1904; confinement occurred May 10, 1905.

A CASE OF SO-CALLED "MUSICAL HEART."

JOSEPH M. PATTON, M.D.
CHICAGO.

The case here reported is of unusual interest because of its rarity and because of the fact that, during a period of about fifteen years previous to death, the patient had been observed and examined by probably a greater number of physicians and students than any other individual of which we have record. During this period he made a living principally by posing for purposes of demonstration before medical classes, both undergraduates and postgraduates, and on one or two occasions was on public exhibition as "the man with the musical heart."

Patient.—The patient was 38 years old at death. According to his statement he was of Russian birth and had been exiled to Siberia, but had escaped and emigrated to America about fifteen years ago. Shortly after reaching this country, and while in New York City, he suffered from inflammatory rheumatism and entered Bellevue Hospital. It was while in this institution that the peculiar murmur, which was afterward studied by so many physicians, was discovered, and presumably it was developed at that time, at least there appears to be no evidence to the contrary. My personal knowledge of the patient dates back about twelve years, when he appeared at my clinic for the first time. He carried a number of written diagnoses, some of which were more or less fanciful and presupposed all manner of lesions of either the right or left sides of the heart or both. The patient himself claimed that his heart had been wounded by a sword thrust. There was, indeed, a scar on the chest wall about two inches below the nipple, but this scar was entirely superficial, and it was not apparent that, whatever the cause of the injury, it could have had anything to do with the cardiac state.

Examination.—Examination at this time determined an hypertrophied and dilated heart. The impulse was heaving and diffuse, and its area was markedly increased. The apex impulse was under the seventh rib, about two inches to the left of the mammillary line. The cardiac rhythm was somewhat irregular. Auscultation determined double mitral and double aortic murmurs. The mitral presystolic murmur was short and ill defined, while the regurgitant exhibited the usual characteristics. The aortic regurgitant murmur showed the ordinary quality and area of distribution, but the obstructive murmur was only to be distinguished above the first rib, because of the greater prominence of the systolic musical murmur which constituted the unique feature of the case. This murmur was a distinct musical note occurring with the cardiac systole and heard all over the precordial area, but plainest from the second rib to the fifth interspace along the left parasternal line. It was not transmitted in any particular direction, but was gradually lost as the distance from the area of the greatest intensity increased. The pitch of the sound varied, at times being high and sharp, and again being lower and more sonorous. The length of a murmur also varied considerably. At times the sound could be heard with the ear close to, but not in contact with, the chest wall, and at other times the sound could not be heard unless the ear was in contact with the chest wall. The patient suffered no special inconvenience as long as he did not exert himself.

Diagnosis.—The diagnosis at that time was double aortic and double mitral lesions, and a musical murmur originating in the left ventricle and probably due to some abnormal condition of the chordæ tendineæ.

Subsequent History.—The patient was observed at intervals ever since, and until the past winter there appeared to be little change in his condition. In February last he appeared at my office complaining of being ill and stating that a short time before the musical murmur had disappeared. It was over the latter fact that he was specially concerned, and he was much cast down when I told him that it was not probable that the murmur would return. He was suffering from an acute bronchitis of the base of the lungs and had a temperature of 102 F. He was sent to the Policlinic Hospital and remained there a week. His heart at this time was dilated and the mitral and aortic regurgitant murmurs were the only ones to be heard. He improved under treatment and left the hospital. A month or so later he appeared at my office with temperature, cough and dyspnea, and he had evidently lost strength. The bronchitis had not cleared up and his heart was acting badly. He would not go to bed or stay in the house. His last visit to my office was on May 26. He died on the night of May 30. I did not see him in the interval.

Autopsy.—The postmortem, which included the heart only, was made by Dr. John Fisher. There was a moderate amount of fluid in both pleural spaces and in the pericardial sac.

Heart: The examination of the heart was made early the following morning by Dr. Fisher and myself, and disclosed the following conditions:

Weight of heart	19 ounces.
Wall of left ventricle	25 mm. thick.
Wall of right ventricle	6 mm. thick.
Wall of left auricle	3 mm. thick.
Wall of right auricle	2 mm. thick.
Length of cavity of left ventricle	90 mm.
Length of cavity of right ventricle	65 mm.
Left auricle much dilated.	
Mitral opening, oval	37x22 mm.
Aortic opening somewhat triangular	20x15 mm.
Tricuspid opening,	45 mm.

The mitral valves were markedly vegetative, the anterior cusp being unusually long and covered with coarse vegetations (Fig. 1). Its edges were deeply serrated. Two chordæ tendineæ which were attached to the tip of the anterior cusp and to the papillary muscle at the apex of the ventricle were thickened and covered with fine vegetations. Their valvular attachment was broken and they floated loose in the cavity of the ventricle, being attached only to the papillary muscle. The aortic valves were retracted by curling and thickening of their edges (Fig. 2). From the corners of the base of the cusps, on their aortic surface, there are short cords about the thickness of chordæ tendineæ, from one and a half to two centimeters long, which attach the base of the cusps to the vascular wall. Anteriorly there are two of these cords, posteriorly and to the right there are two, and posteriorly and to the left there are three. A communication exists between the right auricle and the base of the left ventricle, the auricular opening being near the base of the posterior cusp of the tricuspid valve, and the ventricular opening being between the base of the left cusp of the aortic valve and the base of the anterior cusp of the mitral valve (Fig. 3). This opening admits a match, but its auricular orifice is closed by a papilla which acts as a valve.

Summary.—The gross findings in this case are those of double lesions of the mitral and aortic orifices. Concerning the production of the musical murmur, there are only three factors to be considered in view of the integrity of the auricular and ventricular septa. These factors are the connection between the right auricle and left ventricle, the cord-like attachments to the arterial surface of the base of the aortic valve cusps, and the thickened chordæ tendineæ, whose attachment to the mitral valve had been broken. It is hardly conceivable that either of the two former could be of importance in this connection, because it is not evident that there was much or any current through the opening between the right auricle and the left ventricle, or that the adventitious cords in such a situation could possibly be connected with the production of such a long, high-pitched sound. Again, these conditions were still present after the murmur had absolutely disappeared, the heart action meanwhile being relatively good. The sudden disappearance of the murmur before the heart showed serious signs of failure can only be explained by the breaking of the valvular attachments of the chordæ tendineæ, which were involved in the inflammatory process. The greater tension of these cords during systole, which would be the result of their thickening, might easily result, with a cord of such length, in the production of a high pitched and sustained tone as characterized the heart action in this case.

Whether we accept the views of Corrigan and of Chauveau of the origin of a murmur in the blood stream because of the vibration produced when blood enters through a narrow into a dilated portion of a blood vessel, or those of Heyneius that a murmur is due to the production of eddies in the widest portion of a vessel—and there appear to be no very great difference in the physical principles involved in these theories—it is evident that we can not apply to the cause of the murmur in this case the basic principle governing the production of ordinary murmurs that they are primarily vibrations of the blood stream. The pitch of this murmur, and its harmonic element as well, would require a degree of tension not compatible with the circulation of the blood stream, and only to be found in some denser structure. These physical reasons, therefore, bring us back again to these broken cords for an explanation of this murmur.

If, then, we can not apply to the cause of these distinctly musical murmurs (I employ the qualification here in contradistinction to the harsh, almost musical sounds at times produced in cases of aortic or mitral obstruction), the physics of the ordinary bellows murmur of the heart, and assume that they necessitate the rapid vibration of some of the organized structures of the heart itself, we must admit that they have also a different prognosis. Musical murmurs, as a rule, are of much more serious import than ordinary blowing murmurs. In several instances I have observed their appearance in serious cases of endocarditis at varying periods before a fatal termination. In one case of ulcerative endocarditis involving both aortic and mitral orifices a pronounced musical systolic murmur developed a few days before death. This sound was so loud that it could be heard distinctly at a distance of four or five feet from the patient's chest.

An important deduction to be drawn from this case is that musical murmurs of this character indicate a more extensive degree of involvement of the tissues of the heart than is necessary for the production of the ordinary blowing murmurs.

FASCIOLOPSIS BUSKII (DISTOMUM BUSKII).

THE FIRST REPORTED CASE IN THE UNITED STATES. FOUND IN A PATIENT DYING OF TYPHOID FEVER.*

JOHN T. MOORE, M.D., and J. J. TERRILL, M.D.
GALVESTON, TEXAS.

Attention has been called by one of us[1] to the possibility of finding many of the parasites of tropical countries were we systematically to look for them. We are pleased to present a specimen of a rare intestinal parasite, in fact the only recorded case of this fluke occurring outside of Asia, according to Stiles,[2] from whom we have gained the most of our knowledge of this fluke.

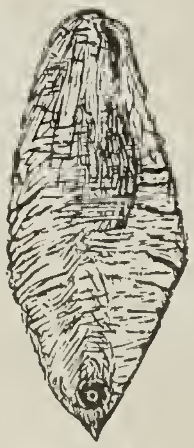

Fig. 1.—*Fasciolopsis buskii.* Original observation. Natural size. Length, 4 cm. Width 1.6 cm.

History of Case.—The parasite was found in the intestine of a Laskar who was sick aboard an English steamer in this port, and who was removed to the St. Mary's Infirmary, where Dr. Moore saw him. The case was diagnosed as probably typhoid fever, but as he died the following day the diagnosis was not confirmed until it was done by postmortem. The specimen of parasite was found in the intestine while doing the postmortem, and along with the fluke we found a large *Ascaris lumbricoides.* The fluke is of interest on account

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* Read before University of Texas Medical Club, 1905.

[1] Moore: Tropical Diseases, etc., Texas Medical News, July, 1903.

[2] Illustrated Key to the Trematode Parasites of Man.

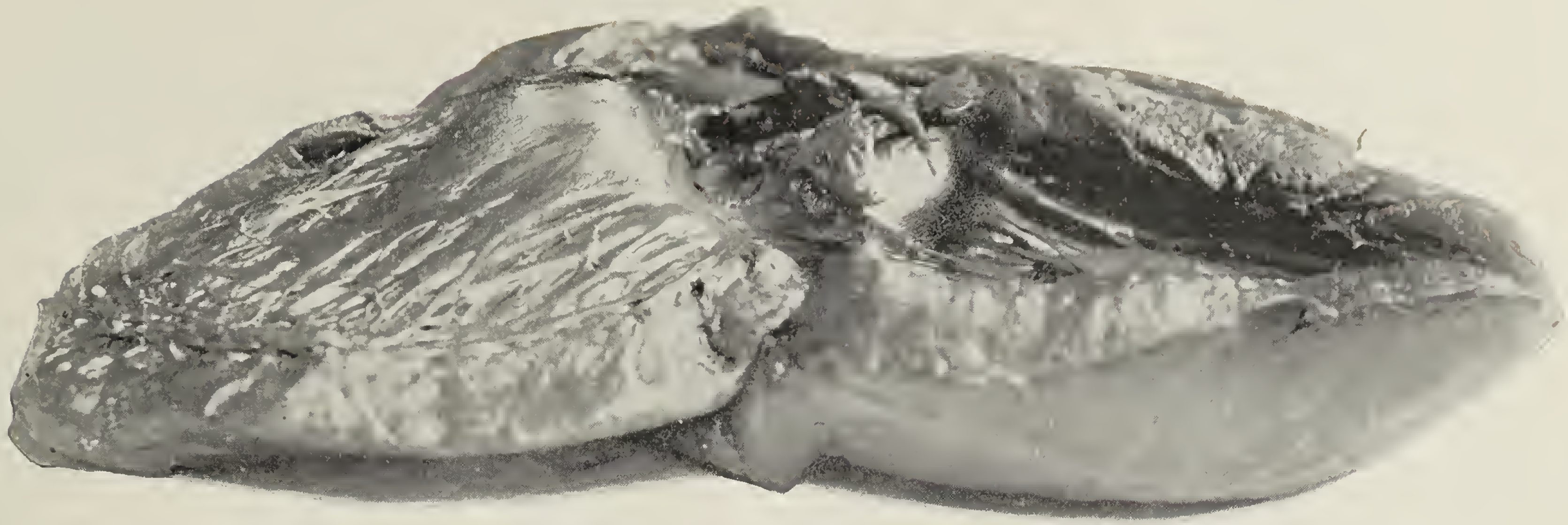

Fig. 1.—Mitral valves, ventricular view.

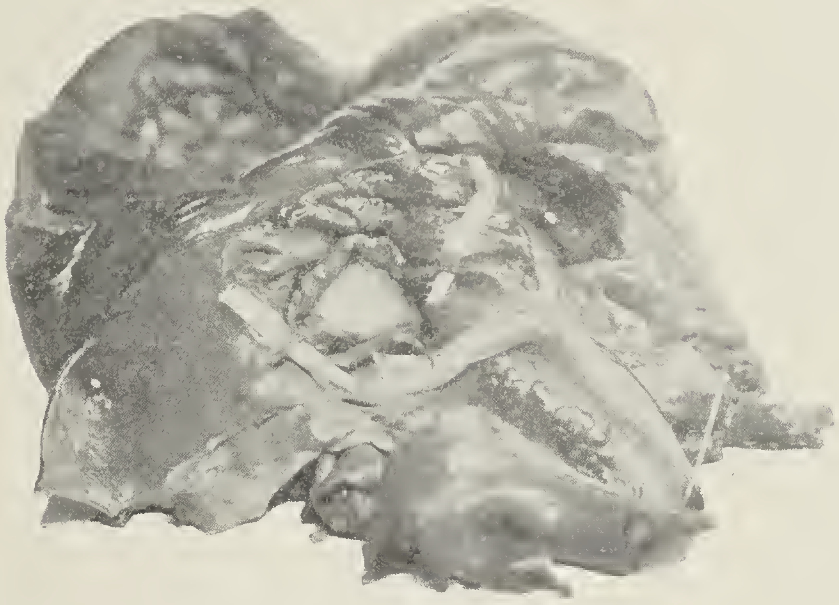

Fig. 2.—Aortic valves, arterial view.

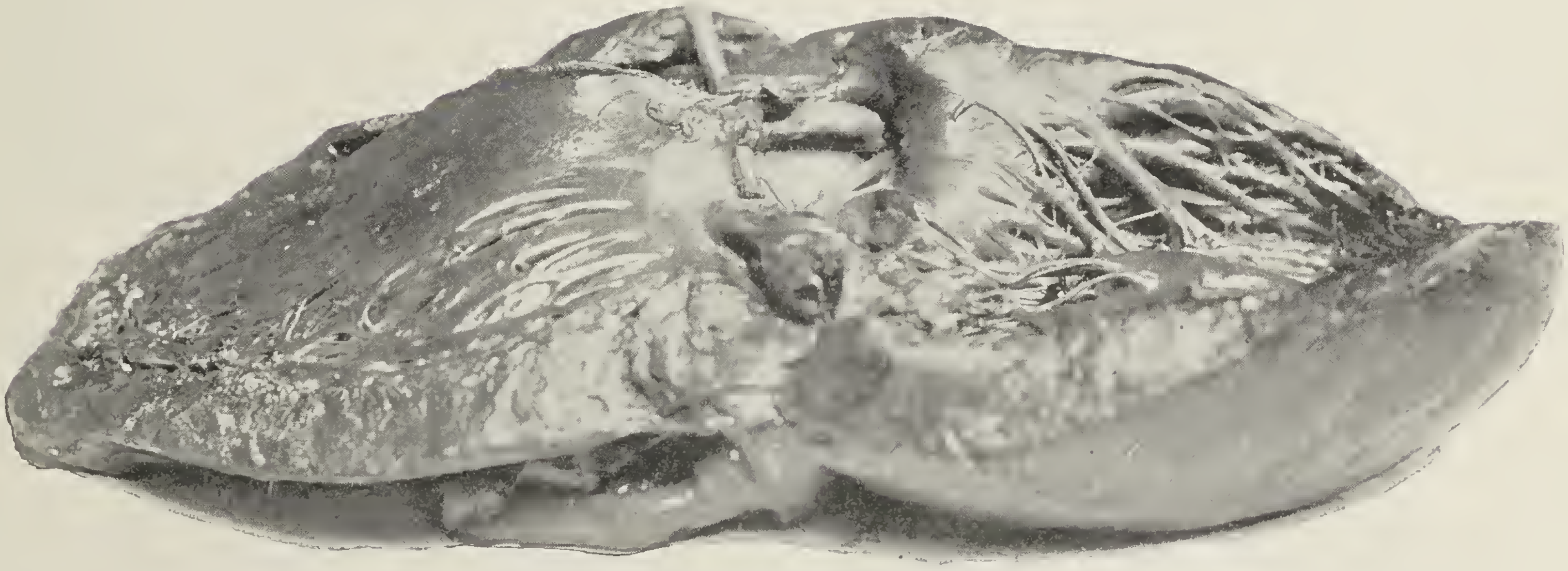

Fig. 3.—Aortic valves, ventricular view.

Supplement to
The Journal of the American Medical Association.

Illustrating Article by Dr. Patton.

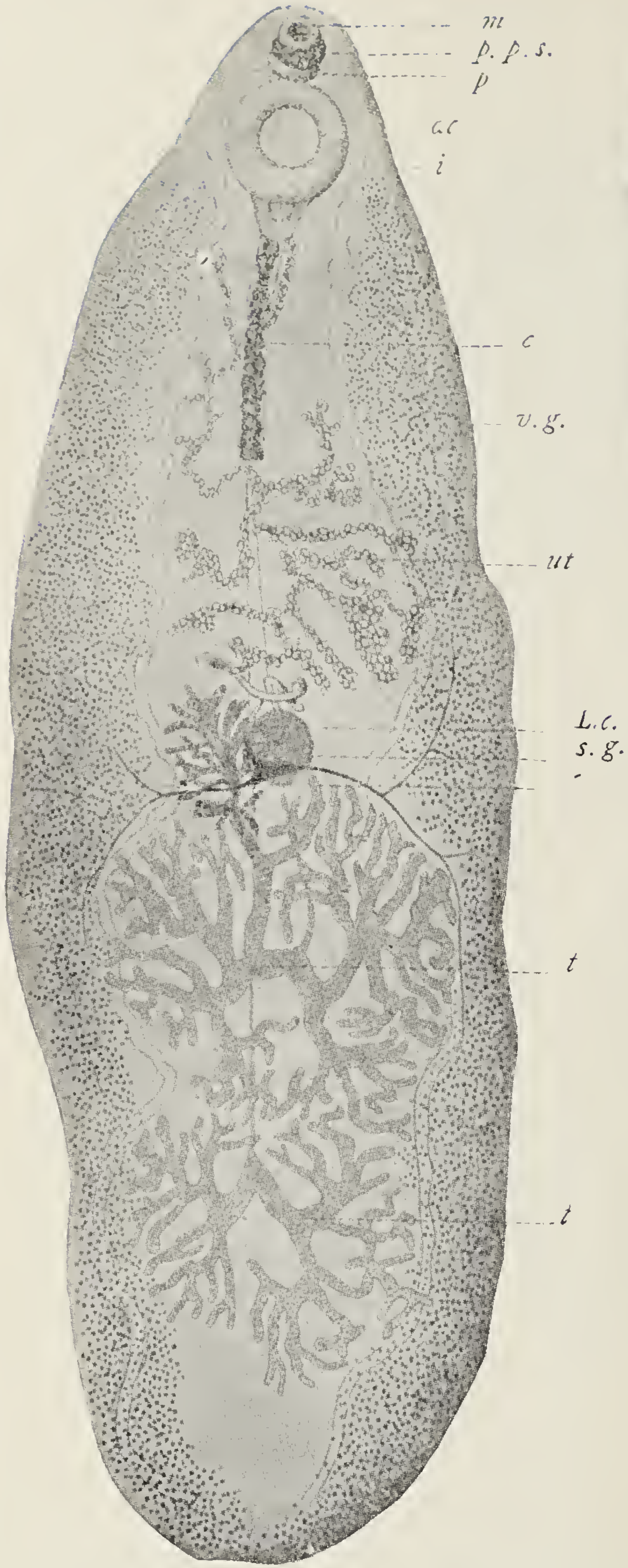

Fig. 2.—(Illustrating article on "Fasciolopsis Buskii," by Drs. Moore and Terrill.) Ventral view of *Fasciolopsis buskii,* enlarged to show the anatomy; ac., acetabulum; c., cirrus; L. c., Laurer's canal; m., mouth with oral sucker; ov., ovary; p, pharynx; p. p. s., prepharyngeal sphincter; s. g., shell gland; t., testicles; ut., uterus; v. g., vitellogene glands. × 6. (After Odhner, 1902, Fig. 1.)

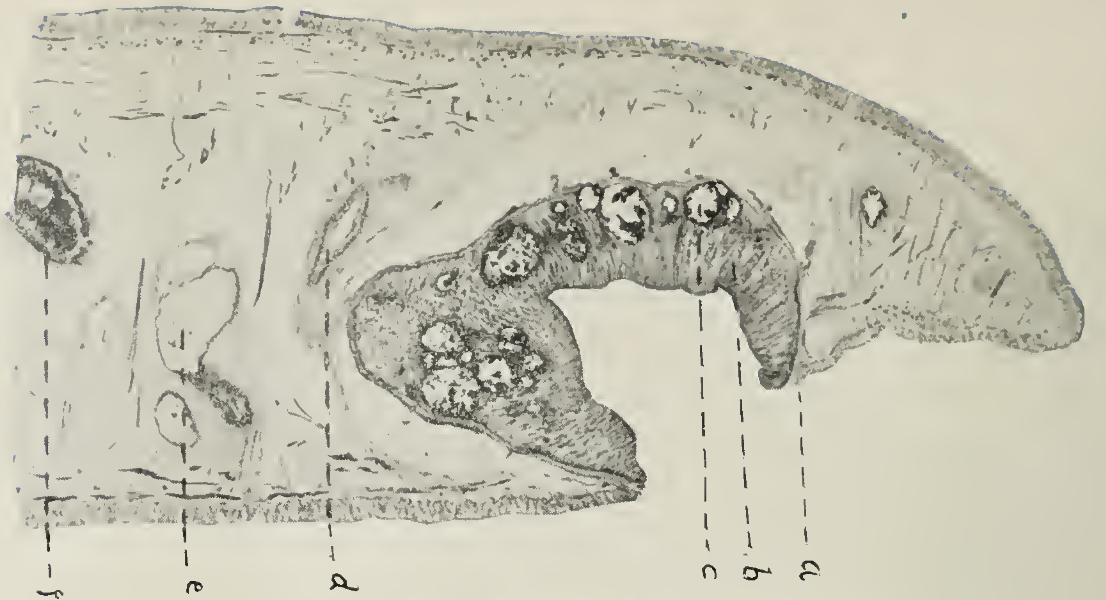

Fig. 3.—*Fasciclopsis buskii.* (Microphotograph.) **Longitudinal section of** anterior end, a little to right of median line. a. Male genital pore; b, acetabulum; c, cystic degeneration in muscle of acetabulum; d, vesicula seminalis; e, uterus; f, cirrus.

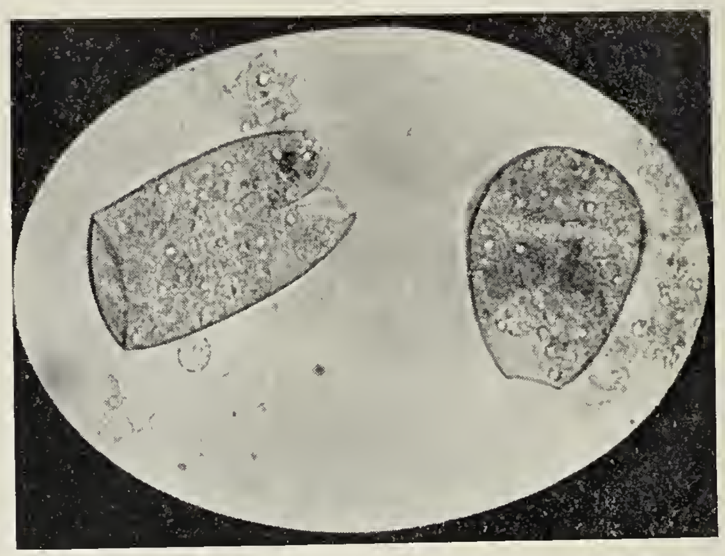

Fig. 6.—Microphotographs of ova. × 190. Showing the various shapes assumed by ova.

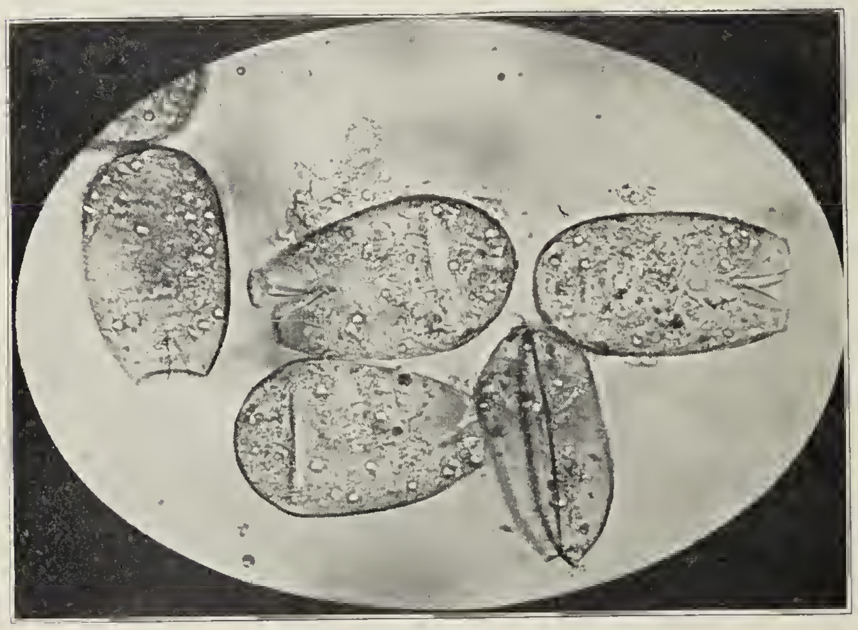

Fig. 7.—Similar to Fig. 6.

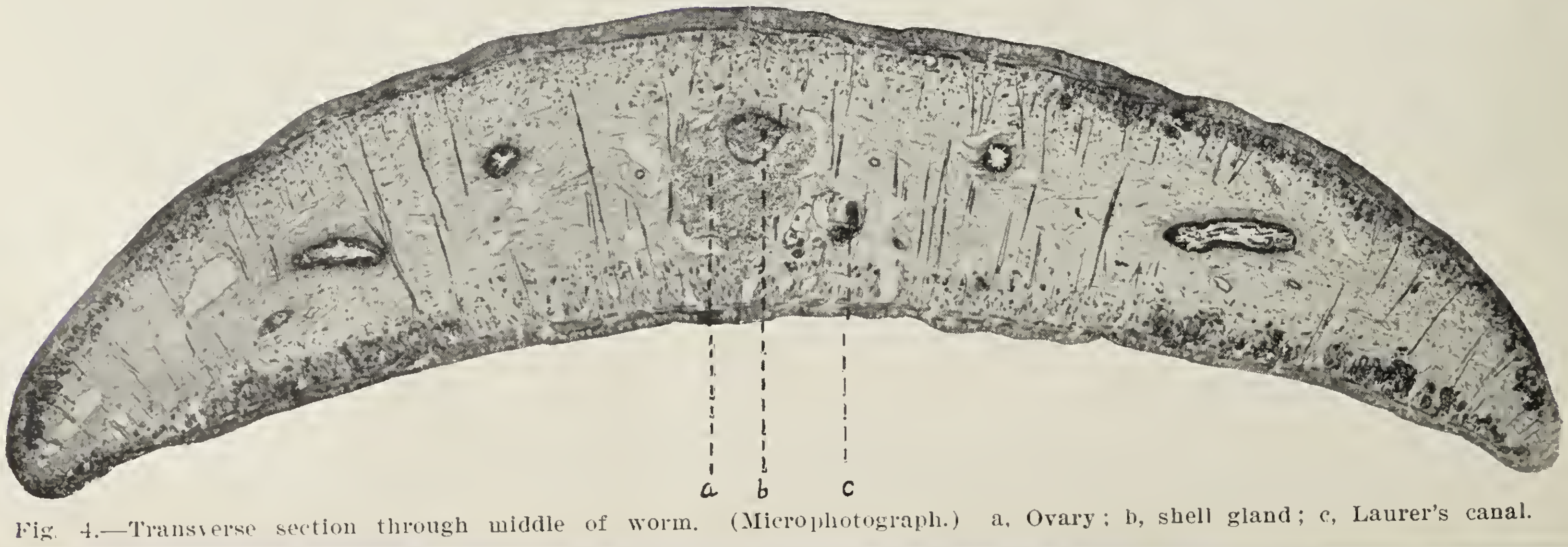

Fig. 4.—Transverse section through middle of worm. (Microphotograph.) a, Ovary; b, shell gland; c, Laurer's canal.

of its rarity and the possibility of having it introduced into our own country.

Classification.—This parasite belongs to the class known as trematodes and is the largest of the distomes hitherto found in man. The infection by any of the trematodes is known as distomatis, though Stiles says that the term distoma has been suppressed.

These trematodes may be found in different parts of the body and are accordingly classed as follows: 1, Ophthalmic; 2, cerebral; 3, pulmonary; 4, hepatic; 5, pancreatic; 6, intestinal; 7, venal, distomatosis.

The parasite we have under consideration is one of three that are found in the intestines of man, viz.: 1, *Fasciolopsis buskii;* 2, *Fasciolopsis rathouisi;* and 3, *Heterophyes heterophyes.* The first and second are found in Asia and the latter in Egypt and Japan.

Busk discovered this fluke in man in 1843, and all of the reported cases heretofore have been from Asia. As Stiles suggests, it is not known whether these trematodes could be distributed in this country or not, as it is known to require particular species of snails to act as intermediate hosts. All of the conditions may be present in this country, and if so, then it would be possible to introduce and spread the parasite here, and consequently its recognition becomes an important matter.

We shall use the generic and specific classification as given by Stiles,[2] which is as follows:

"Family Fasciolidæ—Genus *Fasciolopsis looss,* 1899.

"*Generic Diagnosis.—Fasciolidæ:* Body rather large, flat, about one-third as broad as long, lanceolate to tong-shaped. Cephalic cone wanting. Skin without spines. Ventral acetabulum larger than oral sucker and nearer anterior end. Intestine with short prepharynx, strong globular pharynx, and exceedingly short esophagus; intestinal ceca branch immediately anterior to ventral acetabulum, are narrow and long, extending along inner margin of vitellaria to the posterior end of the body, and are not provided with secondary branches. Excretory system similar to that of *Fasciola.* Genital pores empty into genital sinus, which is situated in the ventro-median line immediately anterior to acetabulum. Copulatory organ present, the cirrus pouch being a long, straight median tube extending caudate to a point about half way between ventral acetabulum and shell gland. Male organs: Testicles in the posterior half of median field, side by side, or one posterior to the other, both branched dicotomously. Female organs: Ovary moderately developed, branched, located at equator, right of median line; receptaculum seminis absent; Laurer's canal present; vitellaria well developed, with very small acini, and extend from plane of ventral acetabulum to caudal pole of body, where the acini from the two sides may meet in the median line; transverse section of body shows acini to be superficial both dorsally and ventrally; transverse vitello-ducts meet in median line of equator to form the vitelline reservoir; shell-gland compact, well developed, globular; uterus extends from equator forward, with lateral coils, and leads to the well-developed metraterm at caudal border of acetabulum. Eggs rather numerous, similar in form to those of *Fasciola.*

"*Habitat.*—Intestine of mammals.

"*Type Species.—Fasciolopsis buskii* (Lankester, 1857).

"Busk's Intestinal Fluke—*Fasciolopsis buskii* (Lankester, 1857) Stiles, 1901—of Man.

"*Specific Diagnosis.*—Fasciolopsis: 24 to 37 mm. (75 mm. after Busk) long, 5.5 to 12 or 14 mm. broad, 1.5 to 2 mm. thick; maximal breadth in equatorial portion; more attenuate anteriorly than posteriorly; ventral surface flat; dorsal surface slightly convex; margins very thin. Oral sucker ventro-subterminal small, 0.5 mm. in diameter, 0.33 mm. deep. Ventral acetabulum 1.6 to 2 mm. in diameter, but elongated caudally directly under the ventral surface in a 2 to 8 mm. long sack; center of acetabulum 1.8 to 2 mm. from anterior end of body. Skin without spines. Prepharynx 0.28 mm. long; pharynx, 0.7 mm.; esophagus very short, bifurcation of the intestine occurs about on anterior plane of acetabulum; ceca with two characteristic curves toward median line, one at equator, the other between the testicles.

"*Male Organs.*—Cirrus pouch cylindrical, median, nearly one-fourth as long as the body, 0.25 to 0.33 mm. thick, straight, extending from genital pore to about midway to shell gland (equator); it contains a long sinous vesicula seminalis with a long blind sack possessing lateral branches, this sack reaching from a short distance caudad of acetabulum to about 0.5 mm. from caudal end of pouch; pars prostatica 0.5 mm. long; ductus ejaculatorious rather short, provided with fine spines; vasa differentia near median line; testicles one posterior to the other; branches of posterior testicle extend to within about 3 mm. of the caudal end of the body. Female organs: Vitelline reservoir rather small; shell gland 1 to 1.5 mm. in diameter. Eggs numerous, 120 to 130 microns long by 77 to 80 microns broad. Sporocyst, redia, cercaria and intermediate host undetermined.

"*Habitat.*—Small intestine of man (*Homo sapiens*); Asia."

Specimen.—The specimen as shown in Figure 1 corresponds in every way to the above description. Before the fluke was placed in the hardening solution it assumed a variety of shapes, assuming almost an oval outline and then straightening out and narrowing itself very much. The movements, while not progressive, were rather active. Figure 3 is from a micro-photograph and corresponds to the section published by Stiles (after Odhner) on page 41 of his monograph.

The Ova.—The ova of this parasite were very numerous. They average 75 by 150 microns. They are oval in outline, are possessed of a double membrane, the two parts placed closely together with only a very narrow clear space between them. The outer wall is the thicker and more distinct. At one end is a distinct clear cap which by pressure may burst off and allow the contents to escape. Dividing the ovum into three almost equal parts are two transverse lines. We have found no mention of these lines in any of the former descriptions. They were present in all the ova examined except a few from which the contents had escaped. They are shown in Figures 5, 6 and 7. The contents are granular, with some small round clear spaces, and in some near the cap end is a round area about 10 microns in diameter which differs from the rest in appearing to have a very delicate membrane.

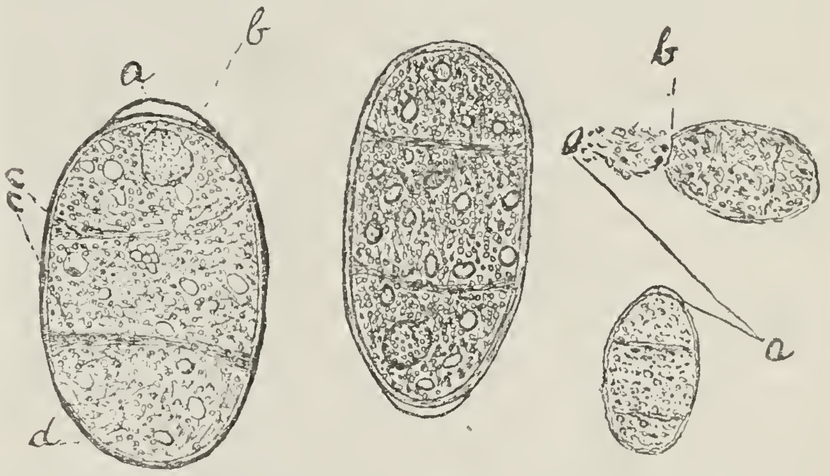

Fig. 5.—Ova of *Fasciolopsis buskii.* Drawings from original observations, showing membranes, transverse lines, and cap. In one the cap is removed and contents are escaping. 75x150 microns. a, cap; b, opening in ovum; c, transverse markings.

Symptoms.—We are unable to say anything of these, as the case was not seen early enough. It is presumed though that persons thus infected must suffer from intestinal irritation, and possibly anemia.

Diagnosis.—The diagnosis is to be made by carefully examining the stools.

Treatment.—The ordinary anthelmintics should be tried.

We take this opportunity to thank Drs. R. C. Cabot and L. S. Brown of Harvard Medical School for the most excellent micro-photographs which are used to illustrate this paper.

Correction in Yellow Fever Article.—In the article on yellow fever in The Journal September 23, page 916, line 20, is a typographical error. The sentence should read "The described cells have only *once* been found after the third day," etc. We call attention to the error as it alters the meaning.

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SATURDAY, SEPTEMBER 30, 1905.

EXPERIMENTAL RESEARCHES ON CANCER.

Recently we commented on the report on the statistical investigations of cancer of the Imperial Cancer Research Fund of Great Britain. There has appeared since Part II of the same report, dealing with the growth of cancer under natural and experimental conditions. This report is of great importance, particularly because of the emphasis it places on the significance of experimental researches on malignant growths. It gives an extensive account of the excellent work done by Drs. Bashford, Murray and Cramer on transplantation of cancer in various animals and summarizes and criticizes, in the light of experimental facts, the various hypotheses concerning the nature and origin of these growths.

It is significant that of all the various animals inoculated with tumors from the same species success was obtained only with the mouse. In 8,000 transplantations in mice, success varied from 1.5 to 50 per cent. In over 900 inoculations made with tumors of other animals, including dogs, rats, horses, carp, etc., not one successful result was obtained, and never were they able to transplant a tumor from one animal to any other animal of a different species, though sporadic tumors of an identical nature may be found in both species. Even in mice it was found that the percentage of successful transplantations was largely dependent on the variety of mice used. A tumor, for instance, in an English mouse inoculated into English mice of exactly the same variety would give a much higher percentage of successes than if inoculated into German mice of a slightly different variety. The same fact was noted for wild and tame mice. These facts indicate clearly the specificity of the process and are exactly comparable to the specific precipitin reactions, and perhaps even more delicate.

Attention is called to the fact that malignant growths in mice are in every way comparable to those found in human beings and behave with reference to growth, metastatic formation and other properties under artificial propagation exactly as do these growths naturally. General recognition should be given to this fact, and it should be recognized also that all the problems of cancer may be made the subject of experimental study.

In the transplanted tumors, the stroma and vascular structures introduced disintegrate and are replaced by stroma from the animal inoculated, retaining, however, the arrangement which occurred in the sporadic growth. The stroma, therefore, may be considered as a specific reaction on the part of the host and is comparable to the granulation tissue in the granulomas, being less marked only. The parenchyma, on the other hand, does not change, but goes on proliferating. If we were to carry the analogy between infections and new growths further, we might look on the tumor cells themselves as the infecting agents, comparable, for instance, to the tubercle organisms in tuberculosis, capable of indefinite proliferation when successfully transplanted and following certain definite laws of growth as any other organism does. We should look, therefore, for the explanation of the growth of tumor cells along the same lines as that of the growth of any other cell. This view is very different from the infectious hypothesis, in which it is assumed that some unknown organism is present either inside or outside the cell and stimulates its growth.

All the various hypotheses advanced to explain the origin and growth of cancer are inadequate, according to the report. Particularly do they fail in explaining the facts observed in experimental study, as most of them were advanced before it was known that cancer could be subjected to such study. The infectious theory is made the subject of particular comment, and the facts in general tend to speak against the view of cancer being an infectious disease in the sense in which the term is applied either to those diseases in which the germ is known or in those in which the organism has not yet been discovered. The apparent endemics of cancer have been explained away by properly considering the age incidence of the disease. There is absolutely no evidence derived from either animals or man that the disease is naturally communicable. The cell inclusions found in cancer have been made the subject of critical study by many pathologists, and the general trend of opinion appears to be against the view that they are specific parasites. Again, cancer is common to all vertebrates and produces identical histologic lesions in all the various species, yet the disease can not be transplanted from one species to another. This is in marked contrast to infectious diseases in man and animals. Cancer cells when transplanted continue to grow and do not degenerate as does infective granulomatous tissue when similarly transplanted. The cells arising in transplanted tumors are direct descendants of the original tumor cells and are entirely independent of the host. These are some of what appear to be vital objections to the parasitic hypothesis.

The results obtained by the application of radium emanations to tumors in mice agree with those reported by other investigators. In general there was a diminution in size after a few exposures to radium or the injection of radioactive salt solution, though this did not occur in all. Careful histologic examination revealed the fact that extensive hemorrhages occurred in the tumor thus treated, followed by connective tissue proliferation and shrinkage. They found that adrenalin in large dose produced similar hemorrhages and also led to the same favorable result. The conclusion is reached, therefore, that in these processes just mentioned, as also in instances where spontaneous healing occurs, the occurrence of hemorrhage is the preliminary condition, and the connective tissue proliferation is thus initiated.

The general result of the investigation may be summed up by stating that the explanation of the nature of cancer centers around the explanation of the power of continuous proliferation and the question of whether this growth is analyzable or not. A study of the process of growth is paramount, therefore, to all other problems, and this brings the experimental method naturally in the forefront of all other methods.

It is certainly very gratifying to read this report and to note on what broad and comprehensive lines these investigations are conducted. As a result of this study, while the nature of cancer may remain as obscure as before, yet the significance of many phases of the question certainly can be much better appreciated and one is enabled more clearly to determine the vital points of attack in the solution of this most difficult and serious problem.

PHYSICAL CONDITION OF SCHOOL CHILDREN.

Every autumn, at the beginning of the school year, it seems advisable to call attention to the fact that one of the most important features of success in school work is that the child shall be in normal health. Without this qualification it is absurd to expect the child to succeed in its studies like normal children, or even that it shall do itself justice in the trying process of the development of its faculties. If there were any need for emphasizing this point, the recent report of the Department of Health of New York with regard to the physical condition of school children in a number of metropolitan schools would furnish it amply. Altogether, 13,941 children have been examined. Of these, 6,294 were reported by the medical school inspectors as requiring medical attention. One thousand and ninety-two children were reported as poorly nourished; that is, as being in such a poor state of nutrition from lack of food as to require special care on this score. A number of the settlement workers in the slums of various American cities have recently reported that they found not a few school children in regular attendance at school who did not have breakfast before leaving home. It is, as being in such a poor state of nutrition from lack that the physicians report one out of every fourteen children as insufficiently nourished.

These figures are surely startling enough to arouse all our municipal health and educational authorities to the necessity for greater care of the physical condition of school children, but they are not all. It was found, for instance, that 3,219 children were suffering from defective vision, and that 460 children had defective hearing. Almost needless to say, children laboring from notable defects of the most important faculties used in modern educational methods, can not be expected to keep up with other children. Many of the children set down by teachers as dull were found to be suffering from either a defect of vision or of hearing, for the correction of which nothing had been done. In addition to these, 1,623 children suffered from breathing defects that frankly put them in the class of mouth-breathers. The intellectual development of the mouth-breather, as a rule, is so much retarded by this physical abnormality that it is not surprising to find that most of these children also were considered to be dull. They will continue to be backward until relieved of their serious respiratory handicap.

The examinations as made in New York seem to have been carefully carried out, and with sufficient attention to detail to make the report valuable for general statistical purposes. While the school children examined all came from the poorer districts of the city, care was taken to avoid the worst quarters, in which the mortality and morbidity rate is highest, so that the results obtained might be of average value for comparative purposes. The result, then, startling as it is, is a statement of actual conditions and not a chance statistical exaggeration. The figures we have quoted, however, point out only the educational disadvantages. There are some other details of the report of special interest to physicians. For instance, it was found that over 2,300 children were suffering from enlargements of the cervical glands. Most of these cases are doubtless tuberculous in nature. Now that we have learned how much can be accomplished by out-door air and good nutrition, in such forms of tuberculosis as enlarged glands, it seems important that these children should not be allowed to develop this disease to the extent that will make them foci of infection in the crowded neighborhoods in which they live. In other words, this careful examination of school children has given valuable material not only for the educator, but also for all those who are interested in the great work of the prevention of disease, and no more promising field for progress in the prophylaxis of disease has been opened in recent years.

THE PNEUMOCOCCUS IN HEALTH AND DISEASE.

When Sternberg, in the eighties of last century, discovered that the pneumococcus was present in the mouths of a large percentage of healthy individuals, there resulted great modifications in our conception of the pathogenesis of acute lobar pneumonia. Many had come to regard lobar pneumonia as an auto-infection, conceiving that the parasite was constantly lying in wait in the saliva of the normal individual, biding its time until undue exposure, alcoholism, or some other depressant factor had lessened the resistance sufficiently to allow it to gain a foothold in the lungs. There is little doubt that this conception, simple and attractive as it was, took too little account of other factors, especially of the factor of contagion, which the experience of large cities has tended to bring to the fore.

The first report of the Medical Commission for the Investigation of Acute Respiratory Diseases,[1] while it takes up only the bacteriologic aspects of pneumonia, brings out many points which have a bearing on the means by which the disease is transmitted. The report shows, first of all, that the broad statement that pneumococci are found in the mouths of a large percentage of healthy individuals must be modified in certain particulars. While it is probably true that a small number of people always harbor virulent pneumococci, the mass of individuals only do so from time to time. In the eastern and middle western states, where the conditions of living during the winter months are distinctly modified by severe climate, it is mostly during the cold weather that a large percentage of individuals are so infected. During the spring and fall the number harboring pneumococci is very much smaller. This would seem to indicate that the altered conditions during the cold season facilitate the spread of pneumococci to a very appreciable extent. This fact accounts for the increased incidence of pneumonia during the winter months, not only because it shows increased facility for the transmission of the germ, but also because it allows of alterations in its virulence, for there is good reason to believe, on experimental grounds, that passage of the pneumococcus through human beings increases this. The report of the commission further suggests some of the means by which pneumococci are spread. They may be acquired in hospital wards, for patients in the immediate neighborhood of pneumonia cases whose saliva was originally free from pneumococci may subsequently develop them. They may be acquired under such circumstances by droplet infection, by means of dried pneumonic sputum, or by actual contact with utensils which have been used by pneumonia patients. The latter, like typhoid patients, may carry the germs of the disease for weeks or even months after recovery from the disease, and may thus remain a source of danger to others for an indefinite period. There is some evidence brought forward by the commission that others than pneumonia patients may be a source of danger, for they show that in some instances ordinary colds may, of course, transmit the germ. The prevalence of the disease in insanitary and overcrowded districts is to some extent explained by the facts above cited, and also by the further observation that in dried sputum, especially in dark places or those not exposed to direct sunlight, the pneumococci may remain alive for a month or even longer.

Apart from these facts with clinical bearing, the purely bacteriologic side of the question has been enriched by the studies made under the commission. It is shown that there is quite an important group of organisms intermediate between the pneumococci and the streptococci, and, though the clinical significance of these organisms is only beginning to be worked out, there is evidence that they are pathogenic and may be found both in pneumonia and in distant foci of inflammation, such as meningitis. The report of the commission shows that a high class of work is being accomplished under their auspices, and encourages the belief that when that work is concluded we shall be in possession of a considerable mass of new facts regarding pneumonia, and shall be in a position to understand more clearly, and combat more intelligently a disease which, in some places at any rate, is rapidly usurping the premier rôle of tuberculosis as a factor in mortality.

AMERICAN MEDICAL COLLEGES.

It is unnecessary nowadays for the American medical student to go to Europe to finish his medical education. Once it was, but not now. This is the sentiment of a short article by Dr. Nicholas Senn in the current number of *Collier's Weekly*. He calls attention to the fact that during the war of independence our surgeons carried with them text-books written by surgeons of the opposing army. Now, however, "our medical schools have gradually raised the requirements of admission, lengthened the time of college attendance, equipped laboratories, secured adequate clinical facilities, and initiated a vigorous final examination, until some of our leading schools, like the Harvard Medical School, the College of Physicians and Surgeons of New York, the University of Pennsylvania, the Johns Hopkins Medical School, and Rush Medical College, Chicago, compare well with any of the European schools. Fortunately, the elective system in teaching, so common in Europe, has found but little favor in this country. It can be safely stated that didactic teaching by lectures, recitations, demonstrations, and laboratory work is carried on in a more thorough and systematic manner in this country than anywhere else. We have hospitals for clinical teaching in our large cities which in the near future are destined to overshadow the famous clinical institutions of the Old World. Our students waste no time in beer gardens and the field of honor. They come to our medical schools with a firm determination to master the principles and practice of their chosen profession as thoroughly as possible during their pupilage, and apply themselves to the task with zeal and devotion. The numerous hospitals that are springing up in all of our large cities secure for a good percentage of our graduates appointments as internes, where they are given the best possible advantages for a successful postgraduate practical training. There is no longer any need for our students to cross the Atlantic for the purpose of studying medicine. A comparison between an equal number of recent graduates from our high-requirement medical schools and those of Europe would unquestionably result in favor of the former." All of us are decrying conditions as they relate to medical education in this country, but compared with what they have been, we ought to rejoice. There are still too many commercial schools with low entrance requirements, with mediocre teachers, with no facilities for teaching as modern medicine must be taught, and which, consequently, graduate young men and women who are totally unprepared for their life work; yet even these schools are better than they were, and—there are fewer of them. So, while matters are far from what they should be, they are better than they were—and they are getting better. Senn is right, "In less than half a century our great cities will become to the medical profession of every country what Alexandria, Athens, Bologna, Pisa, Paris, London, Edinburgh, Vienna and Berlin have been in the past and present."

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[1] Journal of Experimental Medicine, vol. vii, No. 5.

IMPOSING ON PHYSICIANS' PRIVILEGES.

It is said that in Chicago the number of scorching automobiles using the red cross—which should mean that they are driven by physicians or hospital representatives—has increased so greatly of late that the police are suspicious that speed fiends are sailing under false colors. Considering that people with all sorts of moral qualifications (or lack of them) are driving automobiles, this is not impossible. Moreover, the blunting of conscience which makes so many otherwise respectable men wilfully violate the well-known ordinances as to speed, as well as the God-given rights of others, might lead to the temptation thus to evade the law. In any case, however, it is a matter that concerns physicians, and they should do all that is practicable to prevent such misrepresentation. The necessity for physicians to travel at extra speed through crowded thoroughfares does not occur often, and if in emergencies they are allowed the privilege, they should use it with due discretion. It would be a slur on the profession to say that its members can not resist the automobile mania or speed intoxication infection.

THE NEED OF PHYSICIANS AND SANITARIANS IN THE CHICAGO CHARTER CONVENTION.

Owing to its rapid growth, the city of Chicago long ago outgrew the provisions of its present charter, and at the last meeting of the legislature measures were adopted calling together a convention to draft a new, adequate charter for the city. In other words, steps have been taken to give Chicago a better form of government than it has at present, a government more in harmony with the needs of the city and with the ideals of the present day. The membership of this charter convention seems to have been determined and, unfortunately, as it now stands, there is not included therein the name of a single physician, or, so far as we can judge, of a scientifically trained sanitarian. This means that in considering the provisions in the new governmental organization for the sanitation, for the hospitals and other institutions of medical and hygienic nature of the new and improved Chicago, the charter convention must seek expert advice outside its own membership. While practically all other departments of municipal activity appear to be adequately represented in this convention, that of public health, now of such far-reaching possibilities for good if properly organized and administered, seems to have been overlooked entirely. If this be the case it certainly reflects little credit on the foresight of the public officials and bodies whose duty it was to select the members of the convention. It shows that after all there is still a lamentable ignorance in the community of the importance of public health in all its various branches. We hope some way may be found to remedy this serious defect in the charter convention as it now is composed; for without membership in the convention it becomes exceedingly difficult for medical men and expert hygienists to secure for public health the consideration it should have in the fundamental organization of the government of a city like Chicago.

THE SURGICAL TREATMENT OF TUBERCULOUS CERVICAL LYMPH GLANDS.

Although recovery from tuberculosis, wherever situated, occurs not rarely, such a result, of course, is not always to be expected. When the disease is not accessible to surgical intervention the best results will be obtained from an intelligent combination of fresh air, a generous diet and a proper adjustment of rest and exercise. On the other hand, surgical measures should be instituted when the disease is within reach. These remarks are applicable especially to tuberculosis of the lymphatic glands in the neck. Apart from the local disturbance, there is here also the danger of the conveyance of the disease to remote parts through the blood stream. Admirable results have been reported from various sources from extirpation of such tuberculous glands, the prognosis being more favorable in children than in adults. To the statistics already published may be added those recently presented by Dr. Charles N. Dowd,[1] who records the results of operation by thorough removal of the affected glands with a minimum disturbance of the surrounding tissues in 100 cases, principally in children. In his opinion, tuberculosis of the cervical lymph nodes in the large majority of cases is due apparently to infection introduced by way of the fauces, the pharynx or the nasal mucous membrane—in 86 per cent. of the cases under his own observation. Statistics show that extension to the lungs and other internal organs takes place in from one-quarter to one-half of the cases in which removal of the nodes is not undertaken. Apart from the tendency to infect other structures, the disease is tedious and a source of great discomfort and disability, and it leaves behind it disfiguring scars. Thorough removal of the diseased nodes by operation has yielded better results than any other treatment that has been thus far employed. In favorable cases the operation is entirely safe, leaving a scar that is scarcely visible. The patient will be confined to bed probably for two or three days and will be required to wear a bandage or dressing for from one and a half to three weeks. There is freedom from recurrence in about 75 per cent. and ultimate recovery in about 90 per cent. of the cases. In less favorable cases, also, the operation is safe, while the disfigurement from scars is less than that resulting from discharging sinuses. There is freedom from recurrence in from 50 to 55 per cent. and ultimate cure in from 70 to 75 per cent. of cases. The preferable incisions are transverse, either in the creases of the neck or parallel to them; they should avoid the facial nerve. A vertical incision behind the hair line is occasionally helpful. Extensive incisions are necessary in advanced cases. Every precaution should be taken to preserve the normal structures of the neck. It is not feasible to divide the cases into groups of those suitable and others unsuitable for operation. Every patient with tuberculous cervical lymph nodes should be operated on unless the operation is positively contraindicated.

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[1] Annals of Surgery, 1905, p. 49.

A RUSSIAN NOVELIST'S VIEWS.

The distinguished Russian novelist, Maxim Gorky, whose fame has been made worldwide by his association with late events in Russia, has recently published some personal recollections of his brother novelist, Chekhov, who is also a Russian. In this work, very definite opinions with regard to the present state of the professions in Russia and apparently also in most of the rest of what these novelists are prone to think of as the over-civilized world, are pointedly expressed. Chekhov once said to Gorky, who evidently thoroughly agreed with him, "To live well, worthy of a human being, one must labor. Work, lovingly, faithfully done, is our highest privilege—with us, no one is able to do this. An architect sits down to the card table or spends his time in the wings of the theater as soon as he has succeeded in constructing two or three decent houses. A physician, as soon as he has succeeded in building up a lucrative practice for himself, loses all interest in science and never reads anything aside from the 'Notes on Therapeutics.' At forty, he is earnestly convinced that all diseases emanate from congestions and the taking of colds." This might seem rather severe on the medical profession of his native land; but his compliments to the other professions are no more favorable. "A lawyer," he says, "after he once makes a name for himself in a successfully conducted lawsuit does not trouble himself any longer with defending just causes, he takes up the defense of rich corporations, plays the races, eats oysters, and represents himself as a connoisseur in the fine arts. An actor, after rendering a few decent rôles, is likely to refuse to study further parts, dons a cylinder hat and proclaims himself a genius." At least, it is interesting to see the reflection that professional men cast in the somewhat distorted mirror of these Russian novelists' limited experience, but even from such one-sided views perhaps good may be derived, for the gift to see ourselves as others see us is too precious ever to be refused.

Medical News

ALABAMA.

Personal.—Dr. S. G. Robinson, Eufaula, is seriously ill with cerebral hemorrhage.

Bequests.—By the will of the late Dr. Joseph Riley Smith, Birmingham, Hillman Hospital and St. Vincent Hospital each received $5,000, to be paid in annual installments of $1,000 each.

Hospital Reopened.—The City Hospital at Huntsville was reopened September 8 after having been closed for several weeks for repairs. About $3,000 has been expended in remodeling and refitting the institution.

Itinerant Doctor Arrested.—"Dr." Hass, who has been selling "Shaker" medicines in Huntsville, was arrested September 9 for failure to pay license. The charge against him was dismissed when he agreed to pay the regular itinerant's license.

ARIZONA.

Board of Health for Bisbee.—The City Council of Bisbee has passed and put in force an ordinance creating a city board of health and prescribing its duties.

Personal.—Dr. H. Wilson Levengood, Mesa, is acting as U. S. G. S. surgeon at Roosevelt during the vacation of Dr. L. J. Palmer.——Dr. Allen R. Hickman of Copper Queen Hospital, Bisbee, is seriously ill at Douglas.——Dr. Charles H. Jones, Tempe, was thrown from a buggy at Mesa and sustained severe contusions.

ARKANSAS.

Sentenced to Prison.—Dr. B. H. Ward, Mount Pisgah, was found guilty at Searcy of unlawful conduct with a girl under the age of 16, and was sentenced to imprisonment for one year in the penitentiary. An appeal was asked and granted.

Personal.—Dr. Charles G. Carroll will succeed Prof. A. M. Muckenfuss as professor of chemistry in the University of Arkansas, Little Rock.——Dr. Myron E. Lane, Little Rock, has left for Europe.——Dr. William W. Jackson, Jonesboro, has resigned as a member of the State Board of Health.——Dr. and Mrs. Anderson Watkins, Little Rock, have returned from the East.——Dr. William H. Barry, president of the Federal Board, Hot Springs, who has been seriously ill, is rapidly regaining his strength.

CALIFORNIA.

Ill and Injured.—Dr. Gardner P. Pond, Fair Oaks, was thrown from his carriage in a collision September 4, had two of his ribs broken, suffered a concussion of the brain, and is in a precarious condition.——Dr. George B. Nichols, San Luis Obispo, is critically ill with cancer.

Frowns on Lodge Practice.—The Fresno County Medical Society, at its meeting September 5, adopted the following resolution regarding lodge or contract practice:

> *Resolved*, That it is the sense of this society that it is a violation of the ethics of the medical profession and against the best interests of the same, for any member of the profession to contract to do lodge or other contract practice, where the compensation is a stated sum per capita.

New Hospitals.—The Santa Fe Hospital at Los Angeles will be completed and ready to receive patients by the end of this month. The building when finished will have cost more than $200,000.——Preparations are being made for the construction of the new Clara Barton Hospital, San Francisco, which will be erected on Post Street, will accommodate eighty patients and will cost about $130,000.

Personal.—Dr. Clarence V. Thompson, radiologist at the City and County Hospital, San Francisco, has resigned.——Dr. W. Kearney, San Francisco, has been appointed volunteer medical inspector of schools.——Dr. Carroll Thrasher, San Francisco, returned from Alaska September 7.——Dr. and Mrs. John Gallwey, San Francisco, have returned from an extensive trip abroad.——Dr. James M. Steade has been appointed a member of the board of health of San Diego, vice Dr. Peter C. Remondino.——Dr. August F. Browne, Healdsburg, has given up the practice of medicine and returned to his former employment as train dispatcher for the Southern Pacific Railway in San Francisco.——Dr. Frederick W. Browning, Haywards, has returned from a trip to the East.

CONNECTICUT.

Hospital Staff Elected.—St. Vincent Hospital, Bridgeport, announces the following visiting staff: Dr. Charles C. Godfrey, surgery; Dr. Edward Fitzgerald, medicine; Dr. Henry S. Miles, ophthalmology, and Dr. Herbert E. Smyth, laryngology.

Violator of the Law.—Dr. James L. Gardner Central Village, arrested on the charge of issuing a prescription for liquor in violation of the law, pleaded guilty August 30 and was fined $20 and costs. The evidence showed that Dr. Gardner had issued twenty-one prescriptions in one month to one couple for liquor.

New Hospitals.—A site has been selected and purchased at Derby for the City Hospital, for the erection of which the late George Griffin devised the sum of $50,000.——The Cedar Mountain Hospital for tuberculosis patients, which has been closed for about two years, will reopen October 1. The state has appropriated $7,500 toward the support of the hospital and about $4,000 still remains to be raised. The hospital will accommodate, when completed, eighty-eight patients.

August Deaths.—During August, 1,419 deaths were reported to the State Board of Health. This was 241 less than in July, 47 more than in August, 1904, and 4 less than the average number of deaths for the five preceding years. The death rate for the month was equivalent to an annual mortality of 17.1 per 1,000. Among the principal causes of death were: Infantile diarrhea, 293; nervous diseases, 143; consumption, 95; heart diseases, 92; accidents and violence, 78; pneumonia, 39, and typhoid fever, 26.

Typhoid Prevalence.—An unusual prevalence of typhoid fever existed during August, 259 cases being reported, as against 173 in the corresponding month of last year. The disease is widely scattered, being reported from fifty different towns. The epidemic character of the outbreak was evidenced by the suddenness of its onset and its limited duration.——An epidemic of typhoid has broken out among the inmates of the Springside Home, New Haven, where 13 cases have occurred. Up to the present time the source of the epidemic has not been discovered.

Personal.—Dr. W. G. Verdi, Bridgeport, has been appointed a member of the house staff of the St. Vincent Hospital.——The house of Dr. John L. Buel, Litchfield, was entered August 27 and a large amount of silverware was stolen.——Dr. Joseph Swett, Jr., New Hartford, medical examiner for New Hartford and Barkhamsted, in a collision between his buggy and a fast train at New Hartford September 12, was thrown thirty feet, but escaped without serious injury. His horse was killed.——Drs. Thomas M. Bull, William J. Delaney, Walter A. Reilly and A. E. May have been appointed inspectors of the public schools of Naugatuck.

ILLINOIS.

Diphtheria Closes Schools.—Malignant diphtheria in and around Farmington and in Green Township, Livingston County, has caused the public schools to be closed.

Subscriptions for Hospital.—It was announced at the annual conference September 19 that $20,000 has been subscribed toward the purchase of ground and for a maintenance fund for the Deaconess Hospital, Peoria.

Medical Venders Fined.—"Drs." J. B. Grubbs, L. Thomas and Charles B. Smith, charged with practicing medicine in Springfield without a license and prosecuted at the instance of the State Board of Health, were each fined $200 and costs. The defendants defaulted.

Bomb Sent Physician.—Dr. Orin C. Lamb, South Chicago, had pushed into his office, through an open door, a cigar box containing a stick of dynamite, a battery and percussion cap. Dr. Lamb considers it possible that this infernal machine was sent by a former disgruntled patient.

Sanitarium Dedicated.—The Hinsdale Sanitarium—the suburban quarters of the Lifeboat Work of Chicago—was dedicated September 20. Addresses were made by the Hon. Orrin N. Carter, Drs. James H. Kellogg, D. K. Pearsons, Homer E. Thomas, L. P. Haskell and David Paulson.

Personal.—Dr. George E. Hilgard, Bellville, captain and assistant surgeon Illinois National Guard, assigned Fifth Infantry, has resigned.——Dr. James H. Mosler, Prophetstown, injured his finger in the machinery of a windmill September 14. —Dr. and Mrs. Talbot B. Strauss, Gibson City, have gone to Denver.

County Hospital Examinations.—The members of the consulting staff of Cook County Hospital met in joint session September 19 with the Cook County Civil Service Commission to consider questions relating to the announced examination of candidates for the hospital staff. The examining board is composed as follows: Drs. Charles S. Bacon, Frank Billings, Daniel R. Brower, Heman H. Brown, Sanger Brown, Thomas J. Conley, A. C. Cowperthwaite, Nathan S. Davis, Joseph B. DeLee, Fernand Henrotin, Ferdinand C. Hotz, Stuart Johnstone, John B. Murphy, Hugh T. Patrick, Charles E. Paddock, William E. Quine, Edgar M. Reading, Nicholas Senn, George F. Shears, Horace M. Starkey, Daniel A. K. Steele, James H. Stowell, Henry S. Tucker, Charles S. Williams and Casey A. Wood. Dr. Fernand Henrotin was elected chairman of the board and Dr. Joseph B. DeLee secretary. An executive committee, which will later name the membership of the subboards for each of the twelve departments, was appointed and composed as follows: Dr. William E. Quine, chairman; Drs. John B. Murphy, Hugh T. Patrick, Joseph B. De Lee, Casey A. Wood, George F. Shears, E. M. Reading. Dr. Fernand Henrotin is a member of the committee ex-officio and Dr. De Lee was selected secretary. The executive committee will make further arrangements for the tests of candidates. Original entrance examinations must be held for the places, according to the amendment passed at the last session of the state legislature. Those who pass will be placed on the eligible list. Examinations will be held in the following branches: Surgery, medicine, nervous and mental diseases, diseases of children and contagious diseases, pathology, obstetrics, skin and venereal diseases, diseases of the eye, diseases of the ear, nose and throat, orthopedic surgery, pathologic chemistry and *x*-ray.

Chicago.

Personal.—Dr. and Mrs. Robert C. Wilson have returned from Europe.——Dr. Horace M. Starkey has moved to Rockford.

Banquet to Dr. Senn.—The medical profession of the city will give a banquet to Dr. Nicholas Senn Saturday, November 11. The committee of arrangements consists of Drs. William A. Evans, Frank Billings, John B. Murphy, William L. Baum and David J. Doherty.

More Smallpox.—Just after the Isolation Hospital had discharged its last smallpox patient three new cases of the disease were discovered; two of the patients were removed to the Isolation Hospital, but the third, when found, was dead from the hemorrhagic form of the disease.

Deaths of the Week.—The total deaths from all causes during the week ended September 23 numbered 512, an equivalent to an annual death rate of 13.4 per 1,000. One hundred and ninety-six of the deaths were of individuals between 20 and 60 years; 144 of infants under one year, and 82 of persons over 60. Acute intestinal diseases caused 114 deaths; consumption, 51; heart diseases, 47; violence, including suicide, 41; Bright's disease, 30; and pneumonia and nervous diseases, each 24.

INDIANA.

Dr. Brayton Returns from Yellow Fever Study.—Dr. Nelson D. Brayton has returned to Indianapolis. He has been in New Orleans for some time studying yellow fever.

Will Not Divert Hospital Fund.—At the Methodist conference in Michigan City September 16, the conference refused to divert to other channels a fund of $6,000 bequeathed to the council by Mrs. Martha Ray of Lafayette, to be used in the erection of a hospital.

Sentenced for Criminal Malpractice.—Dr. Charles L. Landfair, Bluffton, has been found guilty of having performed a criminal operation on Miss Frances Beeler and was sentenced September 18 to imprisonment in the Northern Indiana penitentiary for an indefinite period, and in addition was fined $100 and costs.

Forecast.—The State Board of Health believes that September will show a large increase in typhoid fever over August and that there will be still a larger increase in October. This prediction is made on the fact that this state of affairs prevails every year. Pneumonia and influenza deaths will begin to increase in October, or as soon as the good weather is over and people commence to live indoors.

Personal.—Dr. Joseph R. Mountain, Connersville, while driving across a railway track, collided with a freight train, but escaped in time to save his life. He was dragged a short distance, sustaining a severe sprain of the shoulder.——Dr. Madge P. Hawkins, Terre Haute, has returned from a trip through the West.——Dr. John T. Freeland, Bedford, was taken to Terre Haute September 12 for operation.——Dr. David C. Peyton, Jeffersonville, has been appointed surgeon-in-chief for the Louisville & Southern Indiana Traction Company, the United Gas and Electric Company, and the New Albany water works.——Dr. Carroll C. Cotton, Elwood, seriously injured three of his fingers by the shutting of a car door at Goldsmith September 13.——Dr. Charles L. Seitz, Evansville, has returned after two years in the Arctic regions with the Zeigler-Fiala expedition.——Dr. Albert J. Maris, Waterloo, has been appointed superintendent of a sanitarium in St. Louis.

August Disease and Death.—There was an increase in sickness and an increase in deaths in August, as compared with July, but no increase over August, 1904. Diarrhea was the most prevalent disease, and typhoid fever, which was seventh in July, arose to second place in August. There was a great deal of rheumatism, cholera morbus, cholera infantum and dysentery. Only 10 cases of smallpox were reported from five counties, and no deaths. In the corresponding month last year there were 56 cases of smallpox in 14 counties, and 3 deaths. Typhoid fever prevailed in August in every county in the state and 125 deaths occurred. Very many cases diagnosed "malaria," "chills," "debility," "slight fever," are found to be typhoid by microscopical tests. The deaths numbered 3,070, equivalent to an annual rate of 13.6 per 1,000. In the corresponding month of last year there were 2,980 deaths. By important ages the deaths were: 665 under 1 year of age; 287, 1 to 5; 53, 5 to 10; 55, 10 to 15; 90, 15 to 20; 735, 65 and over. Tuberculosis caused 340 deaths; diphtheria, 12; scarlet fever, 6; whooping cough, 15; pneumonia, 61; diarrheal diseases, 478; cerebrospinal meningitis, 56; influenza, 1; puerperal fever, 8; cancer, 126, and violence, 190. Of the deaths by violence 7 were homicides, 34 were suicides and the remainder accidental, of whom 27 were drowned, 11 shot and 5 killed by horses.

IOWA.

New Hospital Opened.—The new City Hospital at Shenandoah was formally opened September 10.

College Opens.—The Keokuk Medical College of Physicians and Surgeons was formally opened for the year's work September 12. The address of the evening was delivered by Dr. Frank P. Norbury, Jacksonville, Ill., who sketched the history of medicine as shown in the lives of great physicians.

Personal.—Dr. James Taggart Priestley, Des Moines, has returned from a trip to Japan.——Dr. Albert P. Johnson, Sigourney, was seriously injured in a railroad wreck near Rock Island, Ill., September 4.——Dr. B. L. Sheldon, Cedar Rapids, sails September 30 for Vienna.——Dr. James F. Batten, Onawa, has been appointed coroner of Monona County.

Itinerant Practitioners.—Judge Cesewell, Marshalltown, has ruled that the traveling medicine men, calling themselves "Phenomenal Kraus" and "The Great Anselme," charged with practicing medicine without a license, must furnish a bond of $600 on each of four indictments. The defendants claim that they not only have itinerant licenses, but that the diagnosticians in their employ are physicians duly registered.——A warrant has been sworn out by Dr. A. C. Moerke, Burlington, the local member of the State Board of Health, against the "Minnesota Boy Healer" on the ground that he is engaged in the irregular practice of medicine.——"Brother Paul," an itinerant medicine man, who suddenly left Freeport, Ill., under indictment on fourteen charges, has as suddenly left Burlington, as he was threatened with prosecution by the State Board of Medical Examiners.——The "Great Paul," alias J. Ferdon, was arrested at Fort Madison for practicing without a license, complaint being made by Dr. Carl W. Wahrer, local health officer. He is now in jail. This is the same individual who was mentioned in The Journal of September 9.

KENTUCKY.

Pest House Empty.—The St. John's Eruptive Hospital, Louisville, has been without an occupant for two months.

Diphtheria.—About 50 cases of diphtheria are reported in Franklin County and the public school at Grassy Springs has been closed on account of the disease.

Personal.—Dr. Joseph M. Ferguson, second assistant physician at the Western Kentucky Hospital for the Insane, Hopkinsville, is seriously ill with appendicitis.——Dr. and Mrs. James B. Bullitt and family, Louisville, have returned after a two months' visit to California.——Dr. William A. Briggs, Bowling Green, who has been seriously ill with typhoid fever, has recovered.

Low Death Rate.—The annual report of the health officer of Louisville shows that the death rate for the last fiscal year was 16.79 per 1,000. The chief causes of death were: Tuberculosis, 541; pneumonia, 363; heart diseases, 305; inanition, 207; cancer, 133; nephritis, 160; enterocolitis, 115; typhoid fever, 113; apoplexy, 148; meningitis, 117; paralysis, 105, and bronchitis, 112.

Diphtheria Prevalent.—On account of the prevalence of diphtheria in Franklin County the street fair which was to have been held this month has been postponed. Dr. Arthur T. McCormack, secretary of the State Board of Health, went to Frankfort on September 15 to consult with the local health officers regarding the diphtheria situation. There are said to be 300 cases of the disease in the county.

MARYLAND.

Meeting of Faculty.—About 75 physicians attended the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, held at Deer Park, last week.

New Quarantine Boat.—The board of estimates has appropriated $15,000 for the purchase of a new boat for the quarantine station, as the old one leaked badly. Dr. Sidney P. Heiskell, quarantine officer, has the offer of a wooden boat from New York, and the board agreed to the purchase of that and made an additional appropriation of $2,000 for necessary alterations.

Personal.—Dr. Lewellys F. Barker arrived at Baltimore September 22 after a summer on Go Home Bay, Canada.——Dr. William Whitridge, Baltimore, is at Lucerne, Switzerland.——Dr. William H. Smith, formerly resident physician at the Hebrew Hospital, Baltimore, is in Vienna.——Dr. and Mrs. Benjamin Rush Ridgely, Warren, Baltimore County, celebrated their golden wedding anniversary September 20.

NEBRASKA.

Personal.—Dr. Julius P. Sedgwick and wife and daughter have returned from Berlin.——Dr. John K. Maxson, formerly of Lincoln, has been committed to the insane asylum. He is said to be suffering from paresis resulting from the use of drugs and liquor.——Dr. R. G. Rich, David City, pursued a burglar out of his house, seized him and, in spite of receiving severe wounds, held him until help arrived. Dr. Rich is expected to recover.——Dr. J. L. Greene, Lincoln, superintendent of the state insane institution, has resigned as examining physician of the county insane commission.——Dr. E. J. C. Sward, Oakland, has been made a member of the State Board of Health.

NEW YORK.

New York City.

Held at Quarantine.—Four of the passengers of the steamship *Comus*, arrived from New Orleans on September 18, were sent to Hoffman's Island for observation.

Bequest for Hospital.—The will of the late Ferdinand Meyer sets apart a certain portion of his estate, of which the exact amount is not yet known, for charitable purposes. Mount Sinai Hospital is to receive one-quarter of this amount.

Purification of Water Supply.—The board of estimate has taken steps toward purifying the water supply by holding public hearings on the proposition to acquire certain lands at Mount Kisco, which are regarded as a menace to the water channels in that district. They anticipate purchasing 113,234 acres of land having an assessed value of $70,000.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended September 16, 444 cases of tuberculosis, with 136 deaths; 172 cases of diphtheria, with 23 deaths; 132 cases of typhoid fever, with 22 deaths; 72 cases of measles, with 2 deaths; 38 cases of scarlet fever, with 4 deaths; 8 cases of cerebrospinal meningitis, with 15 deaths, and 15 cases of varicella.

Going and Coming.—Dr. Samuel G. Tracy returned on the *Philadelphia* September 16.——Dr. and Mrs. John G. Curtis and Dr. and Mrs. William S. Dennett returned on the *Prinzessen Irene* September 20.——Dr. Arthur C. Brush, Brooklyn, returned on the *Cretic* September 17.——Drs. Gordon R. Hall and J. A. McCorkle returned on the *United States* September 17.——Dr. George R. Lockwood returned on the *Frederick der Grosse* September 21.——Dr. and Mrs. D. B. Hardenburgh sailed on the *Prinzessen Irene* September 23.

Model Tenements.—Plans for the first of the model tenement houses to be built with money from the $1,000,000 gift by Henry Phipps are on file. The main features include careful sanitation, fountains in the interior courtyards, roof gardens, kindergartens and the newest appliances for housework. The first of these buildings will be put up in East Thirty-fifth Street between First and Second Avenues. This site was selected because of the cosmopolitan population. There will be from two to four rooms in each suite and the rooms will all be open to the air. The rent will not exceed $15 a month for any apartment.

OHIO.

Arrested, Fined, Flees.—"Dr." Andrew Robinson, a member of a patent medicine show at Niles, who was fined $25 and costs for criminal assault September 11, fled from the town before paying his fine.

New Hospital.—The Ruth Hospital at the Children's Home, Hamilton, was formally dedicated September 16.——The cornerstone of the new Good Samaritan Hospital, Zanesville, was laid with due ceremonies September 24.

Accept Annuity Proposition.—At a meeting of the trustees of the Painesville Hospital they accepted the proposition made by Mrs. J. L. Whetstone to give the hospital $1,000 on the condition that an 8 per cent. annuity be paid her.

Colleges Opened.—The Medical Department of the Toledo University opened September 28. Dr. Park L. Myers has been appointed dean of the department, succeeding Dr. William A. Dickey.——Starling Medical College, Columbus, opened September 13 for its fifty-sixth annual session. Dr. Starling Loving, dean of the college, gave a clinical lecture as the opening address, and this marked the beginning of the forty-eighth year of Dr. Loving's connection with the faculty of the college.

The Afflicted.—Dr. Martin L. Williams, Warren is critically ill with pneumonia.——Dr. Lewis D. Brumm, Celina, fell while alighting from a car in St. Mary's and fractured his clavicle.——Dr. William E. Wheatley, Lorain, was operated on for appendicitis September 12 at the Lakeside Hospital, Cleveland, and is reported to be doing well.——Dr. Albert L. King, Youngstown, is critically ill.——Dr. Collins M. Hoover, Alliance, fell downstairs a few days ago and sprained his ankle.——Dr. Jerome Bland, Bucyrus, had a cerebral hemorrhage August 31 and is in a precarious condition.

Personal.—Dr. Alexander M. Steinfeldt, Columbus, left for Europe September 2.——Dr. Mary L. Austin has been appointed assistant physician at the Ohio Hospital for Epileptics, Gallipolis, and Dr. Rose E. Timmons has been appointed assistant physician at the Toledo State Hospital.——Dr. Arthur E. Evans has resigned as surgeon of the Baltimore & Ohio Railroad in Columbus and Dr. William L. Dick has been appointed in his stead.——Dr. J. C. Sheets and Dr. Daniel W. Gans, Massillon, have returned from a trip to the Pacific Coast.——Dr. Myron Metzenbaum, Cleveland, has been awarded the bronze medal for "Original Research in Chemistry, Physics and the Medical Value of Radium," by the jury of awards of the Louisiana Purchase Exposition, St. Louis.

PENNSYLVANIA.

Smallpox.—It is reported that there are at least 30 fully developed cases of smallpox near Williamsburg. As usual, the cases were at first diagnosed as chickenpox.

Injured.—Dr. John H. Enterline, Shamokin, was thrown from his sulky in a runaway accident. His left knee was badly wrenched and he sustained severe contusions.

Fined for Not Reporting Contagious Case.—For neglecting to report cases of diphtheria to the Board of Health, Dr. Milton H. Weaver, Richlandtown, was arrested September 11 and fined $10 and costs.

Personal.—Dr. and Mrs. Thomas H. Gray, Erie, have returned from an extended trip to the Northwest.——Dr. and Mrs. James K. Pollock and family, New Castle, returned September 9 after a trip to the Pacific Coast.

Sells Practice: Resumes It: Court Enjoins.—Judge Johnson granted an injunction September 23 on petition of Dr. Howard F. Taylor of Ridley Park, restraining Dr. David McMasters from practicing in the borough or interfering with the practice of Dr. Taylor. Dr. McMasters sold his practice to Dr. Taylor in April, 1904, for $300, and promised to refrain from practice in Ridley Park.

Philadelphia.

Personal.—Drs. T. Oram Ring, James A. Kearney and Boardman Reed have returned from Europe.——Dr. William H. Temple has been seriously ill in the Medico-Chirurgical Hospital.

Carnival Cash for Charity.—The sum of $1,100 was realized from the street carnival held in behalf of the St. Agnes and the Methodist hospitals. The proceeds are to be divided equally.

Fined for Speeding Autos.—Drs. John B. Deaver, Philadelphia, and Henry Stoeber, Chester, were arrested in Philadelphia September 8, charged with speeding their automobiles. Each was fined $12.62, which was promptly paid.

Hospital Reports for August.—St. Agnes' Hospital admitted 180 patients to the wards and treated 625 new and 1,972 old cases in the dispensaries.——There were 152 patients admitted to the wards of St. Mary's Hospital and 580 new and 1,508 old cases were treated in the clinics.

Bacteriologic Laboratory Report.—The report of the bacteriologic laboratory of the Health Bureau reveals that 805 diphtheria examinations were made, 424 specimens of blood, 1,058 specimens of milk and 100 specimens of sputum were examined, and that 853 bottles of antitoxin were distributed.

Impure Food Indictments.—Forty persons were indicted by the grand jury September 22 for alleged violation of the pure food laws. The specific offenses were: Adulterated soda syrups, 21; adulterated jams and preserves, 5; adulterated chocolate cake, 3; oleomargarin, 3; adulterated ginger, 1; adulterated meats, 3.

Medical Business and Ethics.—At a stated meeting of the Philadelphia County Medical Society, held June 21, a resolution was adopted conveying a request that each medical school furnish its senior class with a special course of lectures or addresses on the subjects of medical ethics and the business aspect of the practice of medicine, and including the recommendation that graduates promptly join the local county medical society.

Jewish Charities Report.—The Federation of the Jewish Charities for the fiscal year ended April 30 reports that $118,600 was distributed during the year to 12 charitable institutions. Among these the Jewish Hospital Association received $30,000; the Jewish Foster Home, $20,000; the United Hebrew Charities, $28,200; the Jewish Maternity Association, $8,000; the Jewish Emigration Society, $800, and the National Jewish Home for Consumptives, $3,000.

To Suppress Bogus Hospitals.—As a result of investigations made by United States Postal Inspector Malone, an effort will be made to suppress the practice of bogus doctors and medical concerns of various kinds in the city. An appeal will also be made to the Board of Health to revoke the licenses of a number of lying-in establishments, on the ground that they are being used for criminal malpractice. Letters in the possession of the inspector will be used as evidence against the proprietors of these so-called hospitals in which offers are made to perform operations at prices ranging from $5 to $500.

Health Report.—The deaths reported from all causes for last week numbered 409. This is an increase of 20 over those reported the previous week and an increase of 8 over those reported the corresponding period of last year. The principal causes of death were as follows: Typhoid fever, 11; consumption, 50; cancer, 16; apoplexy, 24; heart disease, 33; acute respiratory disease, 22; enteritis, under 2 years, 39; enteritis, over 2 years, 17; Bright's disease, 28; accidents, 13; marasmus, 16. There were 184 cases of contagious disease reported, with 13 deaths, as compared with 166 cases and 16 deaths for the previous week.

Will Have Bulletin.—The medical societies of Philadelphia commenced the publication of a weekly bulletin, similar to that issued for the last three years by the Chicago Medical Society. It contains the programs of the affiliated societies, announcements of meetings, and items of interest to the local profession. Dr. A. B. Hirsch, 1711 Diamond Street, is the editor. In the issue for September 16, the information blank for the Biographical Card Index and American Medical Directory is copied, with the request that each physician fill out and return the blank in order to insure full registration of the Philadelphia profession.

GENERAL.

Excursion to International Medical Congress.—Arrangements have been completed for chartering a vessel on which the American delegates to the Fifteenth International Medical Congress at Lisbon, April 19-26, may sail as one party. The organization of the party is in the hands of the following committee: Drs. Lewis S. McMurtry, Louisville; Nicholas Senn, Chicago; J. B. Griffith, Kansas City, Mo.; W. F. Southard, San Francisco: Frank P. Norbury, Jacksonville, Ill.; W. T. Corlett, Cleveland, Ohio; C. H. Hughes, St. Louis, Mo.; R. T. Morris, New York City; A. Vander Veer, Albany, N. Y.; Joseph M. Mathews, Louisville; J. B. Murphy, Chicago; F. B. Turck, Chicago; James E. Moore, Minneapolis; Charles Wood Fassett (secretary in charge), St. Joseph, Mo. The party will sail from New York April 7 on the North German Lloyd steamer *König Albert;* some will return May 9 and others later or by a different route. Itineraries of various tours are being prepared. Further information regarding reservations and copies of itinerary may be obtained by addressing Dr. Charles Wood Fassett, Krug Park Place, St. Joseph, Mo. Those wishing to become members of or contribute to the congress, should communicate with the secretary of the American committee, Dr. Ramon Guiteras, 75 W. Fifty-fifth street, New York City.

The Journal of Biological Chemistry.—Announcement is made of a new journal by this name, to be edited by Drs. C. A. Herter, New York, and J. J. Abel, Baltimore. The scope of the journal will be appreciated from the following taken from the announcement just received:

> Without rigidly defining the scope of the journal, it may be stated that its pages will be open
>
> 1. To workers in zoölogy and botany and the branches of knowledge in which these sciences are applied, for such of their researches as are of a chemical or physico-chemical nature.
>
> 2. To workers on the chemical side of the experimental medical sciences, as physiology, pathology, pharmacology, hygiene, physiologic chemistry and bacteriology.
>
> 3. To those who are engaged in any branch of clinical medicine, when their researches are of a chemical nature.

4. To the specialist in organic chemistry, who will find here a fitting place for the publication of researches which have biologic or medical interest.

The growing importance of chemical research in the elucidation of general biologic and medical problems, and also the increasing activity of American investigators in this field, point to the need of a journal of the character here outlined. At present there is no periodical in the English language that meets the requirements of the biologic chemist.

With the hearty co-operation of American investigators the editors feel confident that the new journal will prove truly representative of the best work in biologic chemistry.

We have no doubt that the journal will receive the co-operation of the scientific men of America, as it undoubtedly will deserve such co-operation. Its price will be $3 a volume. Communications for the journal should be addressed to 819 Madison Avenue, New York.

Yellow Fever News.—In New Orleans the epidemic is gradually wearing itself out. The daily number of new cases averages about 35, and deaths about four or five. At the infected points in Louisiana the disease still spreads, although there is great improvement at the worst points. At Tallulah Dr. J. H. Anderson has the fever, as has also Dr. C. M. Shanley of Jefferson, both having been actively engaged in sanitary work.——At Algiers a lawyer sued for trespass Surgeon Currie, Marine-Hospital Service, and his assistants for fumigating his house. He lost his case and was in turn prosecuted for failure to obey the mosquito ordinance. At some points the friction between medical men over the diagnosis of yellow fever is extreme.——In Mississippi there has been some spread of the infection to new points, but in general the situation is fully under control. Vicksburg and Natchez each have had about 50 cases and five deaths. The coast is nearly free of new cases.——In Florida the epidemic at Pensacola still continues to be menacing, over 50 cases having occurred there.——In Georgia the quarantine contest between the state and city boards of health has got into court. Dr. J. J. Knott of Atlanta has tried to persuade the United States Public Health and Marine-Hospital Service that yellow fever is phosphorous poisoning caused by phosphoric exhalations from swamps and that turpentine is the real prophylactic.——Cincinnati has five cases of yellow fever at the contagious disease branch of the City Hospital. The patients were refugees from Tallulah and Lake Providence, La. Detroit threatened Cincinnati with quarantine.——Delegates from twelve states will meet at Chattanooga on November 9 and 10 to discuss quarantine and related matters.——Yellow fever will be discussed at the second international sanitary convention to be held at Washington, beginning October 9.——Dr. Goldberger and Dr. Rosenau of the United States Public Health and Marine-Hospital Service are now on detail at New Orleans to study the bacteriology of yellow fever.——Lexington, Ky., has two refugees ill with yellow fever.——The New Orleans record to September 26 is: New cases Septembr 25, 37; total cases, 2,868; deaths September 25, 3; total deaths, 370; death rate, 12.9 per cent.

CANADA.

New Convalescent Home for Winnipeg.—Winnipeg hospitals being generally overcrowded, it is proposed to erect a convalescent home, where patients as soon as they have become convalescent, will be removed, to make room for new patients in the hospitals.

McGill Medical Faculty Reopens.—On September 19 the opening lecture of the medical faculty of McGill University was delivered by Dr. A. Jacobi of New York. Dr. Jacobi dealt chiefly with reminiscences on medical education. The most important statement and the one which pleased the student body was: "I dislike the name of 'specialist.'"

Toronto's Good Health.—One year ago there were 21 cases of scarlet fever in Toronto. This year there has not been a single case reported since July 29. Up to September 15 there were reported 22 cases of diphtheria. A year ago there were 86 cases in the whole of September; in August there were 48 cases. There were 19 cases of typhoid fever in September last year; already there have been that number up to September 15. Last month there were 38 cases.

Change in Railway Medical Fees.—The system in vogue as regards the treatment of employes of the Canadian Northern Railway by medical men has been changed. Formerly 50 cents a month was deducted on all salaries under $100 a month, and $1 on all salaries over. This was handed by the railway to the physicians who were to supply treatment, medicines and hospital attendance. This for some time has not been satisfactory to the employés and they have organized an association, appointed a leading Winnipeg physician as chief of their medical staff, and will hereafter conduct their own sick benefit matters.

Winnipeg General Hospital.—The following figures show the increase in the work of the Winnipeg General Hospital during the month of August, 1905, over that of August, 1904 The number of patients treated in August, 1905, was 613; in August, 1904, 512; the number of days' treatment in August, 1905, 7,394; in August, 1904, 5,771; number of patients treated from Jan. 1 to Aug. 31, 1905, 2,904; in 1904, 2,412; number of outpatients treated in August, 1905, 395; in August, 1904, 292; number of deaths in August, 1905, 28; in August, 1904, 25. The total number of individuals treated during the week ending September 16 was 329, of whom 207 were men, 92 women and 40 children.

Personal.—Dr. Park and Dr. James Anderson of Hamilton, Ont., have gone to England.——Dr. Jacobi of New York will deliver the opening lecture to the Medical Faculty of McGill University at the opening of the coming session.——Dr. A. S. Monro, Vancouver, B. C., has gone to the hospitals of England for several months.——Dr. George H. Matthewson, Montreal, has gone to Naples and Vienna.——Dr. J. M. Eaton of Carberry, Man., accompanied by Dr. Schaffner of Boissevain, Man., has gone to represent Manitoba at the American Public Health Convention at Boston.——Dr. W. A. Clark has resigned his position as resident physician of St. Boniface Hospital, Winnipeg, and will practice in Areola, Man. He has been succeeded by Dr R. N. Burns.

Dr. R. A. Reeve, President British Medical Association.—On September 19 two medical meetings of some importance took place in Toronto. The first was a general meeting of the profession of Toronto, and the second a meeting of the local branch of the British Medical Association. The former was presided over by Dr. A. J. Johnson, and the particular item of business transacted was the appointment of a special committee to confer with the local branch in regard to the arrangements for the meeting here in August, 1906. At the meeting of the local branch Dr. R. A. Reeve, dean of the medical faculty of Toronto University, was unanimously elected to the office of president. Chairmen and secretaries have been appointed for twelve sections. The committee of arrangements has not yet been chosen.

Convention Re the Insane in Ontario.—A conference has been called by the minister of the crown in Ontario, under whose jurisdiction is the administration of the asylums and hospitals of the province, the object being to discuss the care and general management of the insane. The medical superintendents and other officers will meet the minister on September 20, and among the subjects discussed will be the limit which should be placed on the admittance of those afflicted with senile decay, the regulations that should govern the admission of defectives and degenerates, and the conditions under which an insane person should be committed to jail. Another matter to be investigated will be that of payment for people confined therein at the public expense, which ought to be borne by friends of such individuals.

Personals and News Items.—The Guelph Sanitarium is building an addition to cost $100,000.——The medical faculty of Laval University, Montreal, opened for the session on September 15. Dr. E. P. Lachapelle delivered the opening address.——Dr. W. H. Montague, formerly of Hamilton, Ont., has removed to Winnipeg, but will not practice medicine.——Dr. W. J. Bell, surgeon, R. M. S. *Empress of India*, Vancouver, has resigned and has returned to Toronto.——Dr. Allan H. Adams, superintendent of the Toronto Free Hospital for Consumptives, has resigned and has been appointed a house surgeon in the Toronto General Hospital.——Dr. J. W. Good, Winnipeg, has donated a complete operating room to St. Boniface Hospital, Winnipeg.——The force of the Canada army medical corps will hereafter consist of 150, all ranks, of whom 9 will be stationed at London, 10 at Toronto, 11 at Kingston, 9 at Montreal, 9 at Fredericton, 20 at Halifax and 10 at Winnipeg. The remainder will be located in the west at places not yet selected.

Toronto General Hospital.—The outdoor departments of the Toronto General Hospital have undergone alterations and improvements during the summer, the total cost of which has been borne by one of the trustees, Mr. Cawthra Mulock. The board of trustees are at once to embark on a vigorous campaign to raise funds for the new hospital, which, it is expected, will be completed for occupation in three years. There is the possibility of the appointment of a new board of management. In such case the present hospital trust will be able to hand over to them the property of the existing trust valued at $600,000, producing annually nearly $25,000. The Ontario government has voted $250,000 and has authorized the University of Toronto to grant an additional $50,000. The city of Toronto has granted $200,000 and Mr. Cawthra Mulock has given $100,000, and there is said to be available from another private source an additional $100,000, which with the subscriptions to be asked from wealthy citizens will enable the trustees to make a good start toward what promises to be one of the finest hospitals in America.

Ontario Alienists Confer.—A conference of the medical superintendents of the various provincial hospitals of Ontario for the insane took place in Toronto on September 20, the object being to confer with the minister under whose department these institutions are governed. Dr. W. N. Barnhardt, Toronto, read a paper advocating pathologic work in these institutions. Dr. D. Campbell Meyers, Toronto, contributed a paper on the prevention of insanity, and advocated wards in general hospitals for functional nervous cases, too often confined to the hospitals for the insane. This met with pronounced favor, and it is likely the government will move in the matter at an early day. The chairman of the Toronto General Hospital Trust was present and stated that his hospital was prepared to adopt this principle at once and had set apart the residence of the former superintendent, Dr. Charles O'Reilly, for that purpose. Another matter dealt with was the question of insane people being jailed. Resolutions were passed favoring instructing magistrates not to commit such people unless application for their admittance had been made to some of the provincial hospitals. Hereafter the medical superintendents will not be required to do any clerical work, such as the making of reports, to the department of the government.

FOREIGN.

Yellow Fever in Brazil.—During the week ending August 13 there were three deaths from yellow fever in Rio de Janeiro, and seven new cases were reported, of which number six were verified.

Date of British Medical Association.—At the meeting of the Toronto branch of the British Medical Association, September 19, it was decided that August 21-24, 1906, should be the date of the next meeting of the British Medical Association, to be held in Toronto, Canada.

Plague in India.—According to *Public Health Reports*, the cholera epidemic in Madras is steadily increasing, the total number of deaths from the middle of July to the middle of August being about 1,000. On August 14 there was an outbreak in the Church of Scotland Zenana Mission; 15 cases and 7 deaths were reported.

Yellow Fever in Guatemala.—Consul-General Owen reports that yellow fever has spread from the coast into the interior. The towns of Zacapa and Gualan, on the line of the Guatemala Northern Railway, are infected. Deaths from yellow fever are also reported to have occurred at Tucura, at the head of the Polochi Valley.

Variola in Chili.—There is very little new information regarding the outbreak of variola in Chili. It is stated that the epidemic in Valparaiso has undergone considerable amelioration. Statistics from the various cities are conflicting, however. It is stated that the number of deaths from this cause in Valparaiso from January 1 to August 24 is 3,560, showing that the epidemic has been a very serious one.

Cholera in China.—Acting Assistant Surgeon Ransom of the Public Health and Marine-Hospital Service reports from Shanghai that cholera is absent from the official statistics, but that he has definite knowledge of the death of one person, a foreigner, from this disease, and that an Englishman died suddenly under suspicious circumstances. Dr. Ransom states that cholera is reported to be very prevalent in the city of Hanku.

Typhoid Fever in France.—It is reported that there is an epidemic of typhoid fever in the department of the Seine-et-Oise. The epidemic began at Pontoise and extended toward Gagny. It is attributed to the dispersal of sewage water over the fields in this district where the soil is principally limestone. Through fissures in the soil, wells are contaminated by seepage. Active measures have been instituted to restrict the spread of the disease.

Correction Concerning Quarantine at Inagua.—Dr. W. T. Williams, medical health officer of Inagua, British West Indies, desires to correct a Pennsylvania news item in The Journal of August 12, which states that the steamship *Barnston* from Colon "put into Inagua for medical attendance on account of sickness of two of her crew, who were put off at that place.' Dr. Williams states that the *Barnston* put into Inagua with 15 of her crew sick, but as he was not certain in regard to the diagnosis, the cases looking suspiciously like yellow fever, no communication was allowed with the shore, with the exception that two men were sent aboard to assist in working the ship to its destination. As there is no hospital at Inagua no accommodation could have been made for the men had they been brought ashore.

New Treatment of Cholera.—Prof. J. Stumpf of Würzburg has been testing in the prevailing cholera epidemic in Germany a means of treating the disease which he thinks will arrest and abort it and any other infectious gastrointestinal affection. The aim is to change the environment for the bacteria so that they are unable to propagate and they die off. This he accomplishes by burying them under a layer of Fuller's earth. He gives from 70 to 100 gm. of Fuller's earth, stirred into a pint of water, having the patient sip it all within twenty to thirty minutes. He gives 30 gm. to children, and 10 to 15 gm. to infants. No food should be taken for eighteen to twenty-four hours and no alcohol. Even in advanced stages its action has proved beneficial, and it has proved very successful in all forms of gastrointestinal infections in his experience. His preliminary communication on the subject is published in the *Berliner klin. Wochft.* of September 11.

Recent Public Health Regulations in Germany.—The Hamburg courts recently prohibited the public advertising of "corpulin" as a remedy for obesity, claiming that it conflicted with the decree in regard to medicines, dated June 1, 1900. The courts also imposed a penalty for delivering morphin on a forged prescription. The Berlin courts have further prohibited the sale of hydrochloric acid without a prescription to a person not known to the dealer to be reliable. The Trier court recently decided that the advertising of a method of curing deafness, worded in such a way as not to deceive the public, can not be forbidden by police authority. The Prussian courts have prohibited the public announcements in regard to the so-called remedy "oxydonor-victory," claiming that it comes under the ban of goods offered for sale with intent to deceive. The text of the above proceedings is published in the Transactions of the Imperial Council of Health.

Medical Substituting.—The Prussian Medical Court of Honor recently fined a physician $125 and costs, with some other penalties, for failing to provide a substitute when he left his practice for a few weeks. The suit was brought at the instance of a patient whom he had been treating for a leg ulcer. The physician left unexpectedly and instructed his servant to tell any patient calling for him to apply to some other physician. This patient did not call in another physician for several weeks, when the condition of the lesion was found to have become so much worse from lack of care that amputation was necessary. The Court of Honor affirmed that it was his professional duty to inform—by letter at least—this patient, whom he had been treating for nineteen weeks, that he was going away, and to impress on him the necessity to have the treatment continued by some other physician. The court held it incumbent on a physician, in case of his absence from town, to see that some one will do his work in so far that the continuance of appropriate treatment of patients in his charge shall be ensured.

Cholera in Europe.—The Journal of September 2 quoted the *St. Petersb. Med. Wochft.* of August 4 to the effect that it had been officially announced that no case of cholera had been known to occur in Russia since April. "The suspicious cases had proved to be some other disease on microscopic examination." Our German and French exchanges also published this announcement, but they are now calling Russia to task for what must evidently have been a misrepresentation of facts and breach of the international sanitary agreement, if the inner circles of the government were not better informed than the general public anouncement. If this proves not to have been the case, the chancellor of the realm is urged to take steps to protect Germany against further violations by Russia of the international sanitary agreement and the dangers resulting therefrom. Cable advices September 26 state that the total of cases in Germany to date has been 246, with 85 deaths. Two new cases and two deaths were reported in the preceding twenty-four hours, all in eastern Prussia. One patient was found September 23 in Berlin, a canal boatman from the infected district in the northeast. His boat was moored in the river in the heart of Berlin; all the bathing houses along the river have been closed and other measures taken. There have been several cases in Galicia, and the Austrian authorities have redoubled their vigilance.

Pellagra in Italy.—The Italian government has been successful in reducing the prevalence of pellagra in that country, as proved by the recently published statistics. In a period of 22 years the number of those afflicted with this disease fell from 104,000 in 1881 to 72,000 in 1899, and to 60,000 in 1902. In Latium, which till recently was immune, several cases were reported, but the further spread of the disease was checked by the energetic measures adopted by the provincial pellagra commission. Of these measures the most efficacious and essential is the active surveillance exercised on the importation and sale of maize, which is the food mainly used by the poorer classes of the rural population. Corn which has been pronounced unfit for human food may be used for animals and for the distillation of spirits, but it must first be "denaturized." This may be accomplished in various ways, care being taken that the change in appearance thus produced is a permanent one which will render the unwholesome flour or grain easily recognizable. When this is to be used as food for animals, molasses or refuse from cheese or jam factories or a quantity of oil residue mixed with the pods of legumes is added to it and the whole is then seasoned with rock salt. To determine whether a sample of maize is fit for human food the examiner notes that it has the natural lustrous appearance and the characteristic sweetish odor and taste of the sound grain. If the surface is moldy or the taste acrid or bitter the corn is condemned. While part of the specimen may come up to the required standard and be sufficiently mature, well dried and in good preservation, it is necessary to see that not more than 5 per cent. of the grains are damaged. To decide this chemical tests are also employed. When, on combustion, the quantity of ash exceeds 4 per cent., and when extracts from the maize give, with ferric chlorid, an evident phenolic reaction (indicating the development of mycetes), the grain is rejected. Other tests of good maize are that at least 80 per cent. of the grains should possess germinating power and that extracts made from it and injected into animals should not produce toxic effects. By such means and by energetic and vigilant control over the importation of maize into the country and over its supply to the population who use it for alimentary purposes much is being done to preserve the poor in the rural districts of Italy from the ravages of a terrible disease.

LONDON LETTER.

The Health of London.

The report of the Metropolitan Asylums Board for 1904, which has just been issued, contains much interesting information with regard to the health of London in that year. The board now possesses 17 infectious hospitals, 5 asylums for imbeciles, a training-ship, 15 homes or schools for certain classes of children, and 8 ambulance stations. During the year 21,183 patients passed through the fever hospitals and 538 through the smallpox hospitals. Special attention is called to the decline in the mortality from diphtheria, which in 1893, the year before the introduction of the antitoxin treatment, was as high as 30.4 per cent. At one of the hospitals a record has been kept of the mortality rates according to the day of the disease on which the antitoxin treatment was commenced. Of 204 cases treated during the years 1897 to 1904, on the first day of the disease not a single one was fatal; of 1,278 treated on the second day the mortality was 5.4 per cent.; whereas, in cases not treated until the fifth day or later, the rate has been upward of 22 per cent. The cases of mistaken diagnosis numbered no fewer than 1,993, a percentage on the total admissions of 10.7. These cases were detained in hospital an average of twenty-five days. In the board's imbecile asylums 8,026 persons have been under care; 5,853 have passed through the various children's homes and schools.

The Neglect of Vaccination: 20,000 Warrants to Serve in Derby.

The anti-vaccination cranks muster in great strength in certain towns of England. In such towns the municipal authorities, who are elected by the people, are strongly antivaccinationist and, consequently, do not enforce the law. Of these Leicester has been the most notorious, but it seems that Derby has eclipsed it. An extraordinary position has arisen as the result of twenty years' official neglect to enforce the vaccination act. It is estimated that there are no fewer than 20,000 defaulters against whom distress warrants have been issued but not executed. Representations have from time to time been made to the government with a view to enforcing the law. The home secretary has now sent an ultimatum which has caused some consternation. He has informed the watch committee that unless the police take steps to execute the warrants he will withdraw the government grant toward the aid of the police, which last year amounted to $30,000. Accordingly the town council instructed the chief constable to put the act into operation. But apart from the formidable nature of the task the anti-vaccinationist feeling is so strong that none of the local auctioneers will conduct the sale of the property of defaulters.

Outbreak of Ice-Cream Poisoning in Birmingham.

Dr. J. Robertson, health officer of Birmingham, has presented a report on a remarkable outbreak of 52 cases of ice-cream poisoning in that city. The interval from taking the ice-cream to the onset of symptoms varied from half an hour to eight and one-half hours. All the patients complained of pain in the stomach and vomiting. In the majority of cases there were diarrhea and collapse. Chemical analysis showed none of the ordinary poisons in the ice-cream. Bacteriologic examination showed that it contained a poison capable of causing inflammation and death in guinea-pigs. This was due to the presence of a bacillus or bacilli of the colon group. About 250 persons purchased the ice-cream, which was made amid very insanitary surroundings and in close proximity to three water closets in a filthy state. Professor Leith, who made the bacteriologic examination, conjectures that excremental organisms were blown into one of the buckets of ice-cream while it was in a warm condition and that rapid multiplication of the organisms took place.

Report of the Commission on Sleeping Sickness of the Royal Society.

The continuation report on sleeping sickness in Uganda by Captain Greig, I.M.S., and Lieutenant Gray, R.A.M.C., has just been published. The evidence brought forward shows: 1, That sleeping sickness is at first a specific polyadenitis caused by the *Trypanosome gambiense;* 2, that a constant lymphocytosis exists at all stages of the disease; 3, that sleeping sickness is the last stage of this disease and is invariably fatal; 4, that resistance of both men and monkeys varies greatly and that acquired immunity is probable; 5, that the action of arsenic *in vita* on the *Trypanosome gambiense* is partial; 6, that bacterial invasion, chiefly coccal, occurs in some cases in the very last days of the sleeping sickness stage of the disease and, therefore, can not determine the onset of this phase of the malady; 7, that in Uganda trypanosomes other than the *T. gambiense* are pathogenic in animals; 8, that these differ entirely from *T. gambiense;* 9, that one of these is probably identical with *T. brucei;* 10, that all trypanosomes are conveyed from the sick to the healthy by the tsetse fly, *Glossina palpalis,* and not by other biting flies (*stomoxys*). In the sleeping sickness areas of Uganda from 50 to 75 per cent. of the inhabitants are in the stage of polyadenitis and are carrying on their ordinary work. These infected people, as they present no symptoms of illness, are especially liable to infect "clean" fly belts and so spread the disease. Recently the districts around Lake Albert and the source of the Nile have become infected and the presence or absence of *Glossina palpalis* in Egypt becomes an important factor in determining the spread of the disease to the north along the shores of the Nile. A newly discovered feature in the morbid anatomy of sleeping sickness is a curious condition of the stomach, comparable with the petechial hemorrhages found under the endocardium and epicardium in trypanosoma infections. The lymphatic glands in every case of sleeping sickness are enlarged and the juice taken by puncture during life contains active trypanosomes.

Irrational Treatment of the Severely Injured.

In a letter to the *Lancet* Mr. C. H. Whiteford makes a very vigorous protest against the current practice of ordering the immediate removal to hospital of a person who has been severely crushed or mangled. The result is the inquest at which the house surgeon reports that the patient was in a state of collapse from which he never rallied and that he died a few hours later. The necropsy often shows an injury which was not incompatible with survival. To remove a patient in a state of collapse, often in a jolting uncovered vehicle over a long distance, is the most certain method of diminishing or destroying any chance of recovery. While it is unadvisable to leave a severely injured man in a gutter or open field, his removal to the nearest place of shelter, usually only a distance of a few yards, is all that is necessary. Here, under the influence of stimulants and warmth, he will recover from the shock, if such recovery is compatible with his injuries. Later he may be removed to a hospital. With the possible exception of cases of internal hemorrhage or injury to internal organs—conditions frequently combined or indistinguishable—the immediate treatment of a severely injured patient can nearly always be summarized as arrest of hemorrhage, rest at or near the scene of the accident, warmth, stimulants, saline injection and, if pain is marked, hypodermic injection of morphin.

A variant of the newspaper account of the inquest is as follows: "The house surgeon stated that the deceased was admitted in a state of collapse, the crushed limbs were at once amputated, but the patient never rallied and died in the evening." Very few severely injured patients survive the extra shock produced by immediate removal to the hospital, followed at once by operation under anesthetic. The fact of a limb being crushed beyond hope of recovery does not justify its immediate removal. The retention for some hours, or even a day, of a mangled limb will not kill the patient, but its removal plus the administration of an anesthetic while he is in a state of collapse is apt to be the "last straw." The immediate treatment of a patient who is brought collapsed to hospital should as a rule be limited to combating the collapse, immediate operation being reserved for such cases as those of internal hemorrhage still going on, in which operation is urgently required.

Fighting Yellow Fever.

At the request of the colonial office the Liverpool School of Tropical Medicine, with the consent of the university authorities, has requested Professor Boyce to visit Belize, in British Honduras, to report on the sanitary measures in that colony necessary in view of the recent outbreak of yellow fever. Professor Boyce, who is now at New Orleans, after completing his observations of the methods employed by the Americans in combating yellow fever, will then proceed to Belize. The latest advices from Brazil have brought news that both members of the yellow fever expedition of the Liverpool school at Manaos have been ill with yellow fever, one very seriously. The expedition expresses the hope that they will now be immune.

Correspondence

The Anti-Tuberculosis Work in Missouri.

St. Louis, Sept. 18, 1905.

To the Editor:—The best way to fight tuberculosis is to fight it; the best agency in the fight is education. During the past year Missouri has made a great advance in the warfare against consumption, and the work has been taken up earnestly and intelligently both by the physicians and the laity. Two lines of action have been followed—one, the organization of local associations for the study and prevention of tuberculosis; the other, the providing for private and public sanatoria, which in themselves are object-lessons teaching the great principles of limitation.

At the last meeting of the state association, a resolution was passed asking each county society to appoint a committee on local organization, and this is to be acted on throughout the state this winter. In the larger towns action is already being taken in the formation of societies and the appointing of committees on legislation and education.

In St. Louis the Society for the Prevention of Tuberculosis has not been idle. Over 250,000 leaflets and cards have been distributed, placards have been placed in street cars and factories, and literature of different kinds bearing on the subject has been distributed by the school children. The daily press and weekly periodicals have given much space to the presentation of facts, and this has been one of the greatest helps. Lectures have been given in many places by members of the society and many more are scheduled for the winter.

The antispitting law came into effect some time ago, and its observance will be more urgently demanded as a police regulation. The new law providing for the registration of consumptives and the disinfection of apartments occupied by them is one of the best ordinances ever passed in St. Louis. It was framed to be as elastic as possible, and yet in its essential points it is effective.

A most important factor in the educational work is the sanatorium, and Missouri is well advanced in this respect. It is not to be expected that any institution can care for a large percentage of the consumptives in the adjacent territory, but it can reach them all through its influence. The state has this year given $50,000 with which to begin the building and maintaining of a sanatorium for tubercular patients. The board of commissioners intrusted with the duty of locating and building the sanatorium have visited the more prominent institutions in the country and with much care have selected a site at Mount Vernon, in the southwestern part of the state. In addition to this being a most charming and healthful locality, the citizens gave a site of 165 acres, valued at $8,500, with $7,000 in cash, free telephone service and free water and electric light for five years. Of course, while this is a most encouraging beginning, it is only a beginning, but there is no doubt that if this money is judiciously expended the state will amply provide for such additions as may be needed in the future. The commission expects to make the educational feature a large part of the work, and in this to enlist the influence of every reputable physician not only to aid in further legislation, but in giving his personal help in molding public opinion and instructing in the necessary methods for prevention. The commissioners are making large plans, and there is little doubt of success if the work so far accomplished is a criterion.

The private sanatoria in the state are meeting with success. Several of more or less pretention have been started during the past year and several "tent cities" are being planned. Mount St. Rose Sanatorium, in St. Louis, has had over 600 cases in less than three years, and, although the new building was thought large enough, it is now in mind to double the capacity. In the new City Hospital a special building is designated for the consumptives, and the Board of Health is doing all possible to enforce every ordinance and provide for every demand originating in the needs of this work.

But neither the public nor the private institutions, nor both together, can care for all of the 5,000 cases of tuberculosis estimated to exist in St. Louis. Possibly they can not care for 10 per cent., and yet they can be of more value as teachers than as care-takers. At some of these institutions every visiting friend of the patients is given a small leaflet of "instructions" regarding the methods of communication of the disease, prevention, etc., and these are the people most interested. It is following what Dr. Trudeau says: "Give the tubercular patients (and friends) education by means of a pamphlet so that they may learn not to infect others and to care for themselves."

William Porter.

Marriages

John B. Ury, M.D., to Miss Lura Kuhn, both of Defiance, Ohio, September 20.

Jacob P"inzing, M.D., to Miss Leah Florence Bourk, both of Ontario, Ore., September 14.

Oliver Fisher, M.D., Sloan, Iowa, to Miss Mina Norwood of Denver, Colo., September 3.

Southgate Leigh, M.D., to Miss Alice Creekmore, both of Norfolk, Va., September 20.

M. D. Baker, M.D., to Miss Mary Reede Riley, both of Waco, Texas, September 27.

Frederick R. Greene, M.D., to Miss Louise Shandorf, both of Albany, N. Y., August 30.

Edward C. Kottcamp, M.D., to Miss Blanche I. Dolson, both of Philadelphia, September 6.

D. E. Singleton, M.D., to Miss Maude Wainwright, both of Shelbina, Mo., September 19.

Ross Lee Moter, M.D., Browns, Ill., to Miss Grace Jones of Princeton, Ind., September 13.

Robert B. Hixson, M.D., to Miss Minerva Barker, both of Cambridge, Minn., September 13.

Clarence A. Good, M.D., St. Joseph, Mo., to Miss Sophie Evans of Erie, Pa., September 15.

Roy E. Mason, M.D., Sapulpa, I. T., to Miss Elizabeth Patee of La Grange, Mo., September 12.

Joseph S. Phalan, M.D., to Miss Margaret M. Fitzpatrick, both of Philadelphia, September 11.

Edgar Allen P. Jones, M.D., Wingate, Md., to Miss Anna B. Patterson, at Baltimore, September 21.

Fred R. Lintleman, M.D., Harlan, Iowa, to Miss Faith Gertrude Willis of Iowa City, Iowa, September 12.

Daniel A. Gray, M.D., Little Rock, Ark., to Miss Annie Statlings of Salisbury, N. C., September 12.

Byron J. Arnold, M.D., Tyler, Texas, to Miss Lessie V. Richmond of Little Rock, Ark., September 14.

Charles A. Sylvia, M.D., Providence, R. I., to Miss Palmira S. Lemos of New Bedford, Mass., September 11.

Roderick D. Kennedy, M.D., Globe, Ariz., to Miss Harriet Lawton Hudson of Mukwonago, Wis., August 15.

William B. Caldwell, M.D., Monticello, Ill., to Miss Anna Olentine of Paxton, Ill., at Sioux City, S. D., September 20.

Walter Vose Gulick, M.D., Rochester, Minn., to Miss Eleanor Frances Brooks of Boston, at Grafton, Ontario, September 19.

Deaths

Frederick Augustus Baldwin, M.D. Bellevue Hospital Medical College, New York City, 1881, a member of the American Medical Association, New York State Medical Association, and New York County Medical Association; from 1883 to 1886, on the staff of the Eastern Dispensary, New York City; from 1884 to 1885 attending surgeon to the Outdoor Department of Bellevue Hospital; from 1885 to 1889 assistant to the late Dr. Valentine J. Mott, died at his home in New York City September 21, after an illness of six months, aged 59.

Henry L. Day, M.D. University of Buffalo (N. Y.) Medical Department, 1860, a member of the American Medical Association, state, county and local medical societies; a member of the ninth International Medical Congress; assistant surgeon of the Seventy-eighth New York Volunteer Infantry in the Civil War; for 24 years a prominent practitioner and leading citizen of Eau Claire, Wis.; twice mayor of that city, died at his home September 16 from pleurisy, after an illness of a month, aged 66.

Joseph Langford Wever, M.D. Albany (N. Y.) Medical College, 1852, surgeon of the Seventh Kansas Volunteer Cavalry during the Civil War; a pioneer of Leavenworth; prominent in educational matters; for 20 years a member and president of the local school board, and for six years a regent of the state university, died at his home from senile debility September 11, after a gradual decline of a year and a half, aged 80.

Theodore Hopkins, M.D. Toronto (Ont.) Medical College, contract surgeon United States Army from 1850 to 1860; during the Civil War surgeon in the army; in active practice for more than 40 years, died at his home in Niles, Mich., September 10, from peritonitis following cholera morbus, after an illness of one week, aged 84.

Cyrus S. Bulhand, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1874, a pioneer of Cass County, Mich., died at his home in Union, Mich., September 11 from cancer of the stomach, aged 59. The Cass County Medical Society passed resolutions of regret and respect.

Joseph Riley Smith, M.D. Transylvania University Medical Department, Lexington, Ky., 1841, the first white child born in Jefferson County, Ala., and for many years a prominent physician of Birmingham, died at the home of his son in Elyton, Ala., August 30, aged 87.

Guy C. M. Godfrey, M.D. College of Physicians and Surgeons, Baltimore, 1892, captain and assistant surgeon United States Army, committed suicide by shooting himself at his quarters in Fort McPherson, Atlanta, Ga., September 24, aged 34.

David Leonidas Norris, M.D. Jefferson Medical College, Philadelphia, 1897, physician for the Bacon-Nolan Hardwood Company, Chancy, Miss., died at that place September 4 from malarial fever, after an illness of about ten days, aged 33.

Lafayette Balcom, M.D. University of Buffalo (N. Y.) Medical Department, 1864, of Buffalo, N. Y., died at the home of his sister in Detroit, Mich., September 14, from nervous collapse following septicemia, after a long illness, aged 67.

Charles Smith, M.D. Missouri Medical College, St. Louis, 1879, an original settler and a pioneer practitioner of Guthrie, Okla., died at his home in that city September 9 from cirrhosis of the liver, after a protracted illness, aged 48.

James H. Kirk Duff, M.D. Western Pennsylvania Medical College, Pittsburg, Pa., 1904, son of the late Dr. John Milton Duff, died at his home in Oakland, Pittsburg, September 16, after a short illness, aged 25.

Simon Fitch, M.D. University of Edinburgh, Scotland, 1841, consulting surgeon to Victoria General Hospital, Halifax, N. S., died at his home in Halifax September 13 after an illness of six weeks.

John Erwin Plummer, M.D., a member of the Madison County (Ark.) Medical Society, died at his home in Huntsville April 22 from heart disease, after an illness of a year, aged 72.

John A. Wilcox, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1872, Wakefield, R. I., was taken suddenly ill at Narragansett Pier August 28, and died August 30, aged 58.

Thomas Jefferson Wright, M.D. St. Louis Medical College, 1866, died recently at his home in Fort Smith, Ark., from chronic intestinal trouble, after a prolonged illness, aged 69.

E. H. Files, M.D. St. Louis College of Physicians and Surgeons, 1901, of Fallis, Okla., died suddenly at Hot Springs, Ark., September 13, from rheumatic endocarditis.

Alfred A. Dreher, M.D. University of Wooster Medical Department, Cleveland, Ohio, 1884, died at his home in Cleveland, September 19, after a short illness, aged 46.

James R. Walker, M.D. Toledo (Ohio) Medical College, 1891, died at his home in Walbridge, Ohio, September 12 from nephritis, after a long illness, aged 45.

George W. Ellis, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1861, of Philadelphia, died in Paris, France, June 5.

Louis Henry Schultz, M.D. Baunscheidt College, Bonn, Germany, 1857, of Philadelphia, died at Atlantic City August 28 from heart disease, aged 71.

Wilson Stuve, M.D. St. Louis Medical College, 1882, died at his home in Oklahoma City, Okla., August 31, from heart disease, aged 46.

Daniel H. Hanks, M.D. New York City, 1874, died at his home in Ballston Lake, N. Y., September 3, aged 81.

William M. Brown, M.D. Rush Medical College, Chicago, 1881, died at his home in Chicago, September 14.

Deaths Abroad.

Thomas John Barnardo, M.D., the well-known founder and director of institutions for destitute children, whereby more than 55,000 orphan waifs have been rescued from poverty and crime, died at his home in London, Eng., September 20 from angina pectoris after a short illness, aged 60. He was born in England, received his preliminary education in private schools, and subsequently pursued medical studies in London, Edinborough and Paris. He was licensed in medicine in 1876 and obtained the degree of F.R.C.S. Edin., in 1879. In 1886, while in the London Hospital, he first had his attention directed to the condition of the street waifs of London, and the amelioration of their condition he afterward made his life work, placing thousands of them in comfortable homes or on farms in England and in the Dominion of Canada, New Zealand and Australia. In 1885 he was awarded the diploma and medal of the Société Nationale d'Encouragement de Bien of Paris. He was commonly known as the "foster father of nobody's children." He was a member of the British Medical Association, and was consulting surgeon of the Hospital for Sick Children, Stepney.

P. Schubert, M.D., a well-known ophthalmologist and aurist of Nuremberg, prominent for his efforts to promote school hygiene, died at Nuremberg, August 25, aged 56. He was one of the organizers of the first International Congress of School Hygiene held at Nuremberg last year.

B. H. Laehr, M.D. of Zehlendorf, called the Nestor of German alienists, died August 25, aged 85. His sanitarium Schweizerhof, for nervous and mental affections in women, is world-famous, and recently celebrated its semi-centennial.

Dr. Borchert, assistant at the Institute of Physiology at Berlin, committed suicide by taking sublimate when he learned that his application for the post of privat docent had been rejected.

A. J. Kunkel, M.D., professor of pharmacology at Würzburg and author of important contributions to toxicology and hygiene, died at Würzburg, August 23, aged 57.

Book Notices

Physiological Economy in Nutrition, with special reference to the Minimal Proteid, Requirement of the Healthy Man. An Experimental Study, by Russell H. Chittenden, Ph.D., LL.D., Sc.D.. Illustrated. Cloth. Pp. 478. Price $3.00. New York: Frederick Stokes Company, 1904.

There is no subject of greater physiologic importance or of greater moment for the welfare of the human race than that of nutrition. Certain dietetic standards have been more or less widely adopted, but a careful scrutiny of the conditions under which the data were collected leads to the conclusion that the standards in question have a very uncertain value. Especially do we need more definite knowledge of the true physiologic necessities of the body for proteid or albuminous foods which we are accustomed to look on as the essential foods. The author presents results of extensive experiments and gives brief summaries of the results. The subjects of the experiments represented three quite distinct classes—professional men, soldiers (volunteers from the hospital corps of the United States Army), and athletes. Accepted dietaries, as those of Voit, Moleschott, Ranke, Forster, Atwater and Schmidt, give the minimal daily proteid requirement for the average male adult at moderate work as 100 grammes to 134 grammes. Is it not possible that the accepted dietary standards are too high? The author has always maintained that man is disposed to eat far more than the needs of the body require, but his active interest in this problem was aroused especially by his observations of Mr. Fletcher (first observed by Dr. Van Someren, then by Michael Foster and later by the author), and the marked physiologic economy that Fletcher was able to practice not only without detriment, but with great gain to the body as regards strength, vigor and endurance, coupled with an apparent resistance to disease. The first experiments were on five professional men connected with Yale University as professors and instructors, the author himself being one of the subjects. Dr. Chittenden reduced his ingested proteid to nearly one-third that prescribed by Voit and says regarding his experience with the light diet: "Health, strength, mental and physical vigor, have been maintained unimpaired and there is a growing conviction that in many ways there was a distinct improvement in both physical and mental condition. Greater freedom from fatigue, greater aptitude for work and greater freedom from minor ailments have gradually become associated in the writer's mind with this lowered proteid metabolism and general condition of physiologic economy." The author found that other professional men gave substantially the same results, and summarizes his experiments as follows: "The professional man can safely practice a physiologic economy in the use of proteid food equal to the saving of one-half to two-thirds of the amount called for by existing dietary standards, and this without increasing the amount of non-nitrogenous food consumed." In summarizing the results obtained from experiments on soldiers the author says: "The subjects lived without discomfort for a period of five months on amounts of proteid food not more than one-half that called for by ordinary standard dietaries, and this without increasing the amount of non-nitrogenous food. . . . The subjects were less conscious of fatigue than formerly. . . . All the men have been well and remarkably free from colds and other minor ailments throughout the experiments." The author found that his group of athletes yielded substantially the same results as the other groups. The work is a most valuable contribution to the literature of nutrition.

The Surgical Assistant. A Manual for Students, Practitioners, Hospital Internes and Nurses. By W. M. Brickner, B.S., M.D., with 123 Original Illustrations. Cloth. Pp. 363. Price $2.00. New York: International Journal of Surgery Co.

Few books on surgery devote much space to the duties of the surgical assistant; Brickner's work therefore fills a want. The first chapter deals with the conduct of the assistant and his relations with the surgeon and the patient, and lays emphasis on the fact that the assistant must display considerable tact, especially in answering the patient's questions and in calling the surgeon's attention to details which he may have overlooked. Chapter 2 deals with the duties of hospital internes. Subsequent chapters give in detail the duties of an assistant in the various operations, whether in hospitals or in private houses, and directions are also given for preparing an operating room. Although this latter duty is usually relegated to a nurse and seldom has to be attended to by the assistant; he often must supervise it and see that it is properly done. Twenty-one pages are devoted to the duties of the anesthetist and to the various methods of inducing anesthesia. In it Brickner calls attention to the necessity for good judgment on the part of the anesthetist in order to determine at times whether the patient is "coming out" and needs more of the anesthetic or is getting too much. The book is well illustrated, and an appendix contains directions for the preliminary preparation and postoperative care of patients, methods of preparing suture materials and gauze, and an illustrated list of instruments.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Second Series. Vol. X. M.—Mnikhovski. Cloth. Pp. 935. Washington: Government Printing Office. 1905.

This is a welcome addition to the volumes already out. We have commented, in mentioning the appearance of the other volumes, on the excellent typographic arrangement, making the volume so convenient for consultation. This volume contains the important references of: Man, Marriage, Massage, Materia Medica, Measles, Medicine, Melancholia, Meningitis, Mercury, Metabolism, Microscope, Milk and many others, which indicate the value of this volume alone as an index medicus. The word "Medicine" alone covers 270 pages of closely printed references.

Psychological Medicine. A Manual on Mental Diseases for Practitioners and Students. By M. Craig, M.A., M.D. Cloth. Pp. 449. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co. 1905.

This is a systematic work on psychiatry, beginning with a chapter (18 pages) on normal psychology, embracing a consideration of the different forms of mental disease and ending with a chapter on treatment (39 pages). There is also a chapter of considerable size on general symptomatology, others on feigned insanity, relation of insanity with law, sleeplessness, etc. The author is a thoughtful, competent alienist of wide experience, but he has not found the secret of lucid, consecutive writing. No doubt he himself has a clear appreciation of the fundamental lines, the dominating traits of mental maladies, but he fails to bring them into salient relief. He lacks the power of graphic description. The book and the chapters are systematically divided, the paragraphs are not. For instance, under physical symptoms of alcoholism (page 191), is given a hodge-podge of symptoms; each one correct, but all enumerated in a hit-and-miss way which must be confusing to the student or general practitioner. Another feature which detracts from the value of the work as a text-book is an excess or rather malposition of qualification. The word may is sadly overworked. Frequently the author starts a description with this modifier. For example, on page 150 he begins a presentation of the symptoms of the catatonic form of dementia præcox by saying: "This type of dementia præcox may develop in an insidious manner," and then not only fails to state what the rule of onset is, but entirely neglects to say whether it ever develops in any other way.

All this is not to say that the work is poor, for it is not. In the main, it is a perfectly safe guide, there are very few omissions and we have discovered no errors of fact. Not only is the chapter on treatment good, but through the book this branch of psychiatry receives fuller and better attention than it does in most text-books. The careful and judicious consideration of prognosis will also be a boon to many a beginner and general practitioner. We distinctly approve the insertion of a chapter on epochal insanities—puerperal insanity, climacteric insanity, senile insanity. While they present nothing characteristic in form or nature, the circumstances and some features make it clinically practical to consider them separately. The chapter on general paresis is good. Here the author's experience and good judgment outweighs his rather prosy and disjointed, even distrait, style. The chapters on the relationship of insanity with law and on case-taking will prove most useful to those of limited experience with the insane. The subjects epilepsy and insanity and hysteria and insanity are well done from the viewpoint of the asylum physician. In matters strictly neurologic, the author is scarcely *au fait.* For instance, he says (page 269) that the Babinski sign is found in paralysis from "organic disease," but fails even to intimate that it is only in organic disease of the pyramidal tract that the sign may be elicited. Further indicative of neurologic delinquency is the section on traumatic neuroses. It is crude to a degree. The book is well printed on excellent paper and the illustrations are fine.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

CONTRACT SERVICE FOR ACCIDENT INSURANCE.

Oconto, Wis., Sept. 22, 1905.

To the Editor:—This city has about 6,000 inhabitants. The place has three saw mills, several planing mills and a pail factory. There are eight physicians in the place. The city has no hospital facilities. The physicians here call themselves just plain "physicians and surgeons." We have no specialists. Everyone of these physicians expects to do a certain amount of the surgical work called for, due to accidents in the above-named mills, for individuals who are otherwise considered as belonging to their respective clientele. Under such circumstances would it be an infringement of professional ethics if I signed the enclosed blank contract, and the company with such signed contract succeeded in controlling the accident cases and liabilities connected therewith of the various mill companies located in this city and thus in a manner directing the surgery into the hands of the subscriber, he being then the "contract surgeon"? Please give me your opinion. Kindly return the blank contract to me. How would this compare with contract lodge practice. C. W. Stoelting.

The contract referred to is of a well-known life insurance company and witnesses as follows:

> That whenever the said company issues a policy of liability insurance covering business operations conducted within such territorial limits as may be assigned to the doctor, and which provides therein for the furnishing of full medical and surgical attendance to persons injured as a result of the operations covered and contemplated by said contract of insurance and during its full term, then, in that event, the said doctor agrees to furnish such medical and surgical service and reports as may be required.
>
> It is further agreed on the part of the doctor that he will, himself, provide this service or furnish competent and reputable substitutes subject to call at all reasonable hours, and in all cases within reasonable and convenient access to the locations within or in the vicinity of the City of Oconto, Wis., where said business operations may be conducted.
>
> Said company agrees promptly to notify the said doctor on its issuance of any such contracts with complete information as to the name and location of the individual, firm or corporation assured thereunder, and said doctor will immediately designate such of his substitutes as will act in his absence or stead in the performance of the services required to be rendered under each such contract of insurance.
>
> It is further agreed that said doctor shall use his best efforts and influence to arrange for the furnishing of ambulance and hospital services which may be necessary in connection with the injuries covered under said contract as will result in a minimum of expense to the firm or individual who shall become responsible for the cost of such ambulance or hospital service.
>
> In consideration of the foregoing, and as full compensation for all of the services so to be rendered, either by himself or his substitutes it is hereby agreed, that the said doctor shall receive 10 per cent. of the gross earned premiums on all contracts so written, which compensation shall be payable as follows: Five per cent. on the estimated premium, payable the first of the month succeeding the date of the collection of said premium by the company, the balance, making the total equivalent to 10 per cent. of the gross earned premium, shall be payable on the first of the month following the ascertaining and collection of said earned premium.
>
> It is further agreed that this contract may be terminated at the option of either party thereto on thirty days written notice, except that the said doctor agrees at the option of the company to render such full medical treatment of injuries covered by any policy issued prior to such notification until the expiration of such policy.
>
> It is further specified that during the continuance of this agreement, the doctor shall not enter into any contract of a similar nature with any other insurance company.

Answer.—From the broad view-point of the general professional welfare there can be but one answer to this letter. The signing of such a contract is, in the widest sense, "unprofessional conduct." Everywhere the profession should agree never to accept work under such conditions. The fees offered are purely contingent: and, according to the good or the ill fortune of the mill hands and varying with the success of the insurance company's agent, the fees may be utterly inadequate or, perchance, too high. In any event the physician's remuneration for his work is wholly speculative. A more objectionable arrangement would be difficult to conceive. On the practical side our correspondent is entitled to sympathy and counsel. No doubt he feels that if he does not accept this contract one of his competitors will. Herein lies the value of a united profession working together. Let all eight of the physicians in the place meet and agree to accept no such contract. If there is already a county society, so much the better, but if not either one should be organized or these eight physicians should at once as a preliminary move agree to stand against this form of contract practice. This is the remedy. It is wholly effectual. Under such conditions the company must either withdraw from caring for its employes in the town or else must arrange to deal fairly with physicians. The ethics of the case is perfectly clear. To accept this contract, means essentially that the contracting physician underbids his competitors in the effort to take from them their work. On no other presumption could this form of liability insurance be made profitable to the mill-owners who take out such policies. Medical men must unite in the effort to put an end to such methods.

CHOICE OF LIGATURES.

Waverly, Mo., Aug. 29, 1905.

To the Editor:—What are the main indications for use of silk, catgut and silkworm gut ligatures? What is the best ligature material for bleeding vessels? In a tenorrhaphy where much strain comes would silk do best, and would a flexed position be proper for dressing?

Answer.—There are no absolute contraindications to the use of fine silk ligatures in clean wounds, though it is probably better practice to employ catgut. The latter is almost positively indicated in the presence of certain, or even possible, suppuration since its absorption within a few days eliminates a foreign body and, therefore, a *locus minoris resistantiæ*. Silkworm gut is applicable to every form of wound closure (unless buried) as interrupted, tension or continuous subcutaneous sutures. As ligature material, the use of silkworm gut is rarely, if ever, justified. A tendon suture under tension should always be avoided, when necessary, by some form of plastic operative lengthening of the tendon or of the muscle itself. Silk, or better, kangaroo tendon or chromicized catgut, would serve as suture material, but so applied as to give direction to the tendon ends rather than needlessly to make accurate approximation requiring even a little tension. Fixation in any exaggerated position, unless as an over-correction of a pre-existing deformity, as a rule, is to be avoided.

LAPAROTOMY UNDER LOCAL ANESTHESIA IN AGED PATIENT.

Manchester, N. H., Sept. 20, 1905.

To the Editor:—Noticing Dr. Igel's report of an operation on a patient 72 years old, I would like to mention one. In a man aged 78 there was an irreducible inguinal omental hernia, on the right side, which had been strangulated for 24 hours. The patient was removed about four miles, in an ambulance, to a local hospital, and under subcutaneous injection of sterile water, the sac was opened. The ring was cut, the omentum tied off, and the canal closed. He was allowed up on the eighth day: walked about the next day, and went home on the thirteenth day. A. H. Wheat.

State Boards of Registration

COMING EXAMINATIONS.

Central District Indian Territory Board of Medical Examiners, South McAlester, October 2. Secretary, W. B. Caldwell, Hugo.

Utah State Board of Medical Examiners, Salt Lake City, October 2. Secretary, R. W. Fisher, Salt Lake City.

Board of Medical Examiners of Arizona, Phoenix, October 2-3 Secretary, A. Martin, Phoenix.

Idaho State Board of Medical Examiners, Boise, October 3. Secretary, J. L. Conant, Jr., Genesee.

Indiana Board Medical Registration and Examination, State House, Indianapolis, October 3. Secretary, W. T. Gott, Crawfordsville.

Board of Medical Examiners of Montana, The Capitol, Helena. October 3. Secretary, W. C. Riddell, Helena.

North Dakota State Medical Examining Board, Grand Forks, October 3. Secretary, H. M. Wheeler, Grand Forks.

Minnesota State Board of Medical Examiners, Old Capitol Building, St. Paul, October 3-5. Secretary, C. J. Ringnell, Minneapolis.

Rhode Island State Board of Health, State House, Providence. October 5-6. Secretary, G. T. Swarts, Providence.

Regular Board of Medical Examiners of Georgia, The Capitol. Atlanta, October 9. Secretary, F. D. Paterson, Cuthbert.

Michigan State Board of Registration in Medicine, Capitol Building, Lansing, October 10. Secretary, B. D. Harison, Sault Ste. Marie.

State Medical Board of the Arkansas Medical Society, Little Rock. October 10. Secretary, J. P. Runyan, Little Rock.

Board of Medical Examiners of State of Florida, Jacksonville, Oct. 10-11. Secretary J. D. Fernandez, Jacksonville.

Kansas State Board of Medical Registration and Examination, State House, Topeka, October 10-11. Secretary, G. F. Johnston, Lakin.

State Board of Medical Registration of Vermont, Y. M. C. A. Hall, Burlington, October 10-12. Secretary, W. S. Nay, Underhill.

Board of Medical Supervisors of Washington, D. C., Washington D. C., October 12. Secretary, W. C. Woodward, Washington, D. C

Board of Medical Examiners of State of Texas, San Antonio, October 17. Secretary, T. T. Jackson, San Antonio.

State Board of Medical Examiners of New Jersey, Trenton, October 17-18. Secretary, E. L. B. Godfrey, Camden.

State Board of Health of Illinois, The Great Northern Hotel, Chicago, October 18. Secretary, J. A. Egan, Springfield.

Louisiana State Board, New Orleans, October 20-21. Secretary, F. A. Larue, New Orleans.

Next Florida Examination.—The fall examinations of the Regular Board of Medical Examiners of the State of Florida will be held at Jacksonville, October 10 and 11, at the auditorium of the Board of Trade, corner of Main and Adams streets. Applications for examination must be made in person to the secretary of the board so that he can inspect the diploma of the applicant, and register him on the day prior to the examination, or in the week preceding. Any information desired will be furnished the applicant when he registers with the secretary, at his office, 28 West Ashley Street. J. D. Fernandez, M.D., Secretary, Jacksonville, Fla.; H. E. Palmers, M.D., President, Tallahassee, Fla.

Maryland June Report.—Dr. J. McP. Scott, secretary of the Board of Medical Examiners of Maryland, reports the examination held June 21-24, 1905. Students who had completed the second year were granted an examination in anatomy, chemistry, materia medica and physiology. Their ratings were carried forward and will be made a part of their final examination. The total number of candidates examined was 147, of whom 24 were re-examined in the subjects in which they had previously failed, and 28 failed, while 22 were second-year students. Graduates of the following colleges passed:

The following questions were asked:

PASSED.

University of Maryland, (1904) 77; (1905) the grade of 75 was reached by one; 76 was reached by two; 77 by one; 78 by three; 79 by one; 80 by two; 82 and 83 by two each; 84 by three; 85 by four; 86 by two; 87 by one; 88 by two; 89 and 91 by one each.
University of Pennsylvania........................(1902) 91
University of Virginia ....(1905) 86
College of P. and S., Baltimore, (1901) 75; (1904) 84; (1905) the grade of 76 was reached by one; 80 was reached by two; 81 and 83 by one each; 84 by three; 88 by one.
Woman's Med. Coll. ....(1905) 79, 83
Maryland Med. Coll., (1904) 88; (1905) the grades of 75 and 78 were reached by one each; 80 was reached by three; 85 by one.
Baltimore Med. Coll., (1905) 76, 78, 79, 80, 80, 83, 84, 86, 92.
Johns Hopkins University (1900) 88; (1905) 78, 83, 85, 86, 87, 88, 90, 92, 94.
Georgetown University ....(1905) 87
George Washington University ....(1905) 89

The following questions were asked:

CHEMISTRY.

1. (*a*) Define: Atom; molecule; radical; valence. (*b*) Define: Acids; bases; salts. Give the general properties of each with an example. (Applicant must answer either one (*a*) or (*b*) of the questions above, but must not answer both.)
2. Give formula for "hydrogen peroxid" and the reasons for its use in surgery as a disinfectant and antiseptic.
3. Describe bismuth subnitrate and explain the dark color of the stools following its therapeutic use. Name its most dangerous impurity and give test for detection of same.
4. Give formula and general physical properties of chloroform. Construct its "graphic (structural) formula" and from this show what relation it bears to the paraffin group of hydrocarbons, say marsh gas CH_4.
5. What is the chemical constitution of urea? Give approximate amount normally excreted in 24 hours, and a method for its quantitative determination.
6. Give in detail a test for the detection of lactic acid in a specimen of the gastric contents.

OBSTETRICS.

1. Describe the placental circulation.
2. Give the best method of managing a shoulder presentation.
3. Give management of a normal labor in its three stages.
4. Describe anteversion and anteflexion, also retroversion and retroflexion.
5. Mention some of the uses of vaginal tampons and how they should be prepared and introduced.
6. How would you manage a case of prolapsed funis.

MATERIA MEDICA.

1. What do you understand by the incompatibility of drugs? Give example.
2. In what particulars are opium and belladonna synergists and antagonists?
3. Name three of the principal alkaloids of opium. Give dose of each.
4. Name the official preparations of zinc. Dose and use of each.
5. What is the composition of Donovan's solution?
6. What is the source of potassium? Name four of the principal preparations, their use and dose?

THERAPEUTICS.

1. Give the symptoms and treatment of lead poisoning.
2. Give the symptoms you would expect to find when an over dose of chloral hydrate had been taken and the treatment of such a case.
3. What are the therapeutic uses of digitalis and the contraindications for its use?
4. Differentiate the coma of alcoholism, apoplexy, opium and uremia: give treatment of each.
5. Quinin: Indications for, and mode of administration of quinin as an antiperiodic, an antipyretic, and oxytocic. How eliminated?
6. Therapeutics of heat.

PRACTICE.

1. Define arteriosclerosis, diabetes mellitus, tenia solium, and dermatitis.
2. Give diagnosis and treatment of angina pectoris.
3. Give differential diagnosis between malarial and typhoid fevers and treatment of each.
4. Give the symptoms of locomotor ataxia; its causes and treatment.
5. Give differential diagnosis between scarlet fever and measles, the treatment and sequelæ of each.
6. Name the symptoms of cerebral hemorrhage.

SURGERY.

1. Give the differential diagnosis of a fracture of the neck of the humerus from a downward dislocation of the humerus, and give in detail a method of treating each condition.
2. Give the differential diagnosis between perinephritic abscess and appendicitis.
3. Give causes and symptoms of adenitis.
4. Give symptoms and treatment of dislocation of radius at elbow.
5. Describe an approved method for the removal of foreign bodies from the ear.
6. Describe an aseptic operation in any region you wish.

PHYSIOLOGY.

1. (*a*) What is the composition of the saliva? (*b*) What is its most important function? (*c*) What action has atropin, pilocarpin and nicotin on the salivary glands and their secretion?
2. What is the difference between Pettenkofer's reaction and Gmelin's test? Describe each.
3. What is meant by diffusion and osmosis?
4. Describe the effect of strychnia on the central nervous system.
5. State what you know of the composition and physiologic action of the pancreatic secretion.
6. Through what three main channels is water lost from the body. Describe the function of each.

PATHOLOGY.

1. Describe the various laboratory methods of sterilization and explain the meaning of the term "fractional sterilization."
2. Give Koch's dicta (laws) regarding the bacterial cause of disease and state whether these dicta (laws) are fulfilled in the following diseases: Typhoid fever; croupous pneumonia; diphtheria; measles.
3. Give Cohnheim theory regarding the cause of tumor formation. Define sarcoma and carcinoma and give the usual method of metastatic extension of each.
4. Describe the gross and microscopic appearances of a solitary gray or miliary tubercle. Give in detail the method of staining tubercle bacilli in the sputum.
5. Describe the autopsy findings, as regards the vascular and urinary systems, one would expect in a case of arteriosclerosis of long standing.
6. Describe what you consider the most characteristic anatomic lesion of typhoid fever and give the chief avenues of elimination of the specific organism from the body.

ANATOMY.

1. Describe the thoracic duct.
2. Name the muscles of the eye and give their nerve supply.
3. What are the ureters and where do they begin and end?
4. Name anatomic structures severed by a circular amputation through the middle of the forearm.
5. (*a*) What are the divisions of the brain? (*b*) Name ventricles of the brain. (*c*) What arteries supply the membranes of the brain?
6. After a ligation of the axillary artery in its middle third, how is collateral circulation established?

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending September 23:

Allen, John H., asst.-surgeon relieved from duty at the Army General Hospital, Presidio of San Francisco, and ordered to Fort Sill, O. T., for duty.

Rich, Edwin W., asst.-surgeon, relieved from temporary duty at Depot of Recruits and Casuals, Fort McDowell, Cal., and from further duty in the United States transport service, and ordered to Fort Ontario, N. Y., for duty.

Dale, F. A., asst.-surgeon, leave of absence extended thirty days.

Williamson, L. P., asst.-surgeon, granted two months and ten days' leave of absence, with permission to go beyond the sea.

Truby, Albert E., asst.-surgeon, ordered to accompany 3d Battalion of Engineers from Presidio of San Francisco, to Fort Leavenworth, Kans., then return to his proper station.

Banister, Wm. B., surgeon, left Jefferson Barracks, Mo., on thirty days' leave of absence.

Reynolds, Chas. R., asst.-surgeon, granted leave of absence for one month and fifteen days.

Kennedy, James M., asst.-surgeon, leave of absence extended thirty days.

Cass, William E., contract surgeon, relieved from duty in the Philippines Division, and ordered to Vancouver Barracks, Wash., for duty.

Woods, Oscar W., contract surgeon, relieved from duty at Vancouver Barracks, Wash., and ordered to the Army General Hospital, Fort Bayard, N. M., for duty.

Wall, Francis M., contract surgeon, left Fort Fremont, S. C., and arrived at Fort Oglethorpe, Ga., for duty.

Halliday, Francis A., contract surgeon, arrived at Fort Fremont, S. C., for duty.

Carpenter, Alden, dental surgeon, ordered to Fort Liscum, Alaska, for temporary duty.

Gardner, Fletcher, contract surgeon, relieved from duty in the Philippines Division, and ordered at the expiration of his present leave of absence to Fort Crook, Neb., for duty.

Hereford, John R., contract surgeon, arrived at San Francisco, on leave of absence for three months, from the Philippines Division.

Boak, S. Davis, dental surgeon, ordered to Fort Washington, Md., for temporary duty, from Fort Myer, Va.

Treuholtz, Clarence A., contract surgeon, returned to duty at the Army General Hospital, Fort Bayard, N. M., from temporary duty in Alaska.

Suggs, Frank, contract surgeon, reported for duty at Fort Mansfield, R. I., after two months' sick leave of absence.

Ware, William H., dental surgeon, left Fort DuChesne, Utah, and arrived at Fort Douglas, Utah, for temporary duty.

Branch, Frederick D., contract surgeon, returned to duty at Fort Wood, N. Y., from sick leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending September 23:

Thompson, J. C., Benton, F. L. surgeons, commissioned surgeons, with rank of lieutenant commander, from March 3, 1903.

Garton, W. M., surgeon, commissioned surgeon, with rank of lieutenant commander, from March 12, 1903.

McCullough, F. E., surgeon, commissioned surgeon, with rank of lieutenant commander, from June 9, 1903.

Furlong, F. M., surgeon, commissioned surgeon, with rank of lieutenant commander, from June 20, 1903.

De Valin, H., acting asst.-surgeon, resignation accepted, to take effect September 20.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending September 20:

Banks, C. E., surgeon, to proceed from Flomaton, Ala., to Magnolia Bluff, Fla., for special temporary duty.

Stoner, J. B., surgeon, granted leave of absence for two days, from September 16.

Goldberger, Joseph, P. A. surgeon, to proceed from Mobile, Ala., to New Orleans, and report to P. A. surgeon N. J. Rosenau for special temporary duty.

Foster, A. D., asst.-surgeon, granted leave of absence for seven days, from August 7, 1905, under paragraph 191 of the regulations.

Peters, R. H., acting asst-surgeon, to proceed from Livingston, Guatemala, to Zacapa, Gualan, Las Amates and Puerto Barrios for special temporary duty.

Stearns, W. L., pharmacist, to proceed to Magnolia Bluff, Fla., and report to Surgeon Banks, for special temporary duty.

BOARDS CONVENED.

Board to meet at Bureau in Washington, D. C., on Monday, September 18, for the purpose of examining candidate for entrance as cadet in the Revenue Cutter Service. Detail for the Board: Asst.-Surgeon J. W. Trask, chairman; H. McG. Robertson, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended September 16, 1905:

SMALLPOX—UNITED STATES.

California: Los Angeles, Aug. 26-Sept. 2, 1 case; San Francisco, 2 cases.

District of Columbia: Washington, Aug. 26-Sept. 9, 9 cases.

Massachusetts: Lowell, Aug. 26-Sept. 2, 1 case.

Michigan: Grand Rapids, Aug. 26-Sept. 9, 1 case, 1 death.

New York: New York, Aug. 26-Sept. 2, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 22-29, 7 cases.

Brazil: Bahia, Aug. 6-12, 3 deaths; Rio de Janeiro, July 27-Aug. 6, 23 cases, 5 deaths; Aug. 13-20, 9 cases, 7 deaths.

Cuba: Santiago Province, Aug. 29-Sept. 5, 2 cases, 1 death.

Ecuador: Guayaquil, Aug. 1-8, 4 deaths; Aug. 15-22, 1 death.

France: Paris, Aug. 19-26, 17 cases, 9 deaths.

Great Britain: Newcastle-on-Tyne, Aug. 16-23, 1 case.

India: Calcutta, July 29-Aug. 5, 3 deaths; Madras, July 29, Aug. 4, 6 cases.

Mexico: City of Mexico, Aug. 12-26, 15 cases, 9 deaths.

Russia: St. Petersburg, Aug. 6-19, 7 cases.

Turkey: Constantinople, Aug. 6-20, 7 deaths.

YELLOW FEVER—UNITED STATES.

Florida: Pensacola, Aug. 29-Sept. 12, 38 cases, 6 deaths.

Louisiana: Ascension Parish, to Sept. 10, 44 cases, 3 deaths; Assumption Parish, Aug. 26-Sept. 11, 13 cases; Caddo Parish, to Sept. 9, 4 cases, 1 death; East Baton Rouge Parish, Sept. 9, 1 case; East Carroll Parish, Aug. 14-Sept. 12, 106 cases, 9 deaths; Iberville Parish, to Sept. 11, 14 cases, 6 deaths; Jefferson Parish, 215 cases, 27 deaths; Lafayette Parish, to Sept. 12, 7 cases; Lafourche Parish, to Sept. 10, 332 cases, 35 deaths; Madison Parish, Aug. 14-Sept. 10, 87 cases, 12 deaths; Orleans Parish, New Orleans, July 21-Sept. 13, 2,406 cases, 323 deaths; Plaquemines Parish, to Sept. 11, 54 cases, 7 deaths; Rapides Parish, to Sept. 3, 7 cases; St. Bernard Parish, to Sept. 12, 33 cases, 1 death; St. Charles Parish, to Sept. 12, 94 cases, 16 deaths; St. James Parish, to Sept. 9, 6 cases; St. John the Baptist Parish, to Sept. 11, 149 cases, 14 deaths; St. Mary Parish, 478 cases, 18 deaths; St. Tammany Parish, 2 cases, 1 death; Terrebonne Parish, to Sept. 9, 90 cases, 3 deaths.

Mississippi: Anguilla, vicinity of Sept. 6, 1 case, imported; Gulfport, Aug. 15-Sept. 11, 53 cases; Gulf Quarantine, July 22-Aug. 26, 57 cases, 1 death; Mississippi City, Aug. 22-Sept. 11, 40 cases; Natchez, to Sept. 11, 23 cases.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, July 30-Aug. 6, 7 cases, 3 deaths; Rio de Janeiro, Aug. 13-21, 3 cases, 2 deaths.

Ecuador: Guayaquil, Aug. 1-8, 1 death; Aug. 15-22, 1 death.

Guatemala: Gualon, Aug. 19-26, present.

Honduras: Puerto Cortez, Aug. 18-25, 2 deaths.

Mexico: Tehuantepec, Aug. 27-Sept. 2, 1 case; Tezonapa, 2 cases; Vera Cruz, 4 cases, 1 death.

Panama: Bocas Del Toro: Aug. 18-25, 1 case; Colon, Aug. 19-26, 2 cases; Panama, 5 cases, 2 deaths.

PLAGUE—FOREIGN.

Africa, Port Elizabeth, July 29-Aug. 5, 1 case.

Brazil: Rio de Janeiro, July 30-Aug. 6, 8 cases, 2 deaths; Aug. 13-20, 2 cases.

India: General, July 15-27, 2,578 cases, 1,810 deaths; Calcutta, July 29-Aug. 5, 14 deaths.

Panama: La Boca, Aug. 6, 1 death.

CHOLERA—FOREIGN.

India: Calcutta, July 29-Aug. 5, 15 deaths; Madras, July 29, Aug. 4, 6 deaths.

Japan: Kobe, July 29-Aug. 12, 2 cases.

Medical Organization

California.

Monterey County Medical Society.—At a meeting of this society August 5, in Monterey, it was decided by unanimous vote to incorporate the society.

Solano County Medical Society.—A number of physicians of the county met at Vallejo, July 28, and organized a county medical society to be in affiliation with the state society and the American Medical Association. The following officers were elected: Dr. H. O. Miller, Vallejo, president; Dr. G. C. Browne, Benicia and Samuel G. Bransford, Suison, vice-presidents; Dr. Chadwick E. Arnold, Vallejo, secretary; Dr. Bernard J. Klotz, Vallejo, treasurer, and Drs. Lester P. Hall, Dixon; Winfield S. Makemson, Rio Vista; and W. L. McFarland, Benicia, censors.

Indiana.

Carroll County Medical Society.—This society met at Camden August 18 and reorganized with the following officers: President, Dr. Wilber F. Sharrer, Delphi; vice-president, Dr. Judson J. Schultz, Delphi; secretary, Dr. Charles C. Crampton, Delphi, and treasurer, Dr. Patrick W. Conway, Oekley.

Pennsylvania.

Fifteenth District Medical Association.—Physicians of Blair, Cambria, Clearfield and Center counties met at Lakemont Park, Altoona, August 15, and organized a district association, electing Dr. Frank A. Ford, Altoona, president, and Dr. James L. Henderson, Osceola Mills, secretary.

West Virginia.

Jefferson County Medical Society.—Physicians of Charlestown and Jefferson County met at Charlestown August 18, to reorganize a county medical association. Dr. J. J. Pittman, Charlestown, presided, and Dr. George A. Davis, Summit Point, acted as secretary. A letter from the secretary of the West Virginia Medical Association, outlining a plan for reorganization was read, after which the meeting adjourned to meet in Shepardstown, September 1, to complete organization.

Society Proceedings

COMING MEETINGS.

Colorado State Medical Society, Colorado Springs, October 3-5.
American Association of Railway Surgeons, Chicago, October 4-6.
Idaho State Medical Society, Boise, October 5-6.
Delaware State Medical Society, Wilmington, October 10.
Mississippi Valley Medical Association, Indianapolis, October 10-12.
Vermont State Medical Society, Burlington, October 12-13.
New York State Medical Association, New York City, October 16-19.
Kentucky State Medical Association, Louisville,, Oct. 5.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Eighteenth Annual Meeting, held at New York, Sept. 19-21, 1905.

The President, Dr. Howard W. Longyear, in the Chair.

The association met in College Hall of Hotel Astor, and, after an address of welcome by Dr. George B. Fowler, New York, which was responded to by Dr. Charles A. L. Reed, Cincinnati, proceeded with the reading of papers.

Annual Dinner.

The annual dinner was held at the Hotel Astor, September 20. The toastmaster was Dr. Robert T. Morris. The following toasts were responded to: "American Medical Association," Dr. L. S. McMurtry; "Our Nippon Neighbors," Surgeon-General Suzuki, Imperial Japanese Navy; "American Gynecological Society," Dr. Hermann J. Boldt; "The Doctor's Vacation," Dr. Brooks H. Wells; "In Manchuria with the Belligerents," Dr. L. L. Seaman; "Problems of Public Health," Dr. Daniel Lewis.

Officers.

The following officers were elected: President, Dr. John Young Brown, St. Louis; vice-presidents, Drs. James N. West, New York, and Frank F. Simpson, Pittsburg, Pa.; secretary, Dr. William Warren Potter, Buffalo, N. Y. (re-elected); treasurer, Dr. X. O. Werder, Pittsburg, Pa. (re-elected); members of council, Drs. Robert T. Morris, New York, and Howard W. Longyear, Detroit.

Multiple Pregnancy Complicated by Double Pyosalpinx.

Dr. O. H. Elbrecht, St. Louis, reported an interesting case in detail. The most striking feature was the obscurity of this fortunately rare complication, for without the autopsy he would certainly have abided by his first and only antemortem diagnosis, i. e., sapremia, and would have continued to believe that the general peritonitis was the result of the sapremic infection traveling upward through the tubes and thus into the abdominal cavity, for such a process, to his mind, would be all the more plausible in the large and flabby uterus of multiple pregnancy, more especially from the fact that large blood clots were passed on the first day, showing the relatively imperfect contraction of the uterus. The case also shows very plainly the ability or the degree of tolerance of the pelvic peritoneum to cope with infections, as it is his opinion that the peritonitis was not general until the sixth day, for up to that time there was no hiccoughing, no vomiting, no abdominal distension and no apparent weakness. Another deduction is that gonorrheal peritonitis, while not very dangerous, if confined to the pelvic peritoneum, is surely dangerous when it creeps out of the pelvis and becomes diffuse. It is also his firm belief that the pyosalpinx in this case was unilateral at the time of impregnation, and that the infection was transmitted by the escape of virulent pus to the open fimbriæ of the unaffected side.

The only cases he could find analogous to his have been reported by Hare and Talley. The reports of two pathologists in the speaker's case, who worked independently of each other, both showed that the tube, which was secondarily infected, was infected by way of the fimbriæ, as its pathology was confined entirely to its outer third; the middle third showed only slight inflammatory changes, and the inner third, including the uterine attachment, was normal.

Blank projects the theory that virulent bacteria in the tube have a tendency to become pyosalpinx during pregnancy by reason of the hyperemia. He further states that 50 per cent. of those cases in which the tubes are adherent in the cul-de-sac rupture as pregnancy advances, from tension, pressure or from stretching of the adhesions, which forces pus out of their fimbriated extremity. The experience of the essayist with three cases of this class substantiates Blank's theory. These three cases were reported.

DISCUSSION.

Dr. Charles A. L. Reed, Cincinnati, said that this case, with the pus tube undetachable, only adds one possible condition that points to the reason why possibly these cases should be subjected to operation earlier and more radically than they have been heretofore. With a double pus tube, with antecedent conception, it follows that the deduction of the essayist, that the infection of the tube was unilateral prior to impregnation, was absolutely incontrovertible. As to infection on the other side, the probability is that it resulted from a progressive invasion of tissue, the mucous structure serving as a nidus of infection occurring within the uterus following delivery.

Dr. Herman E. Hayd, Buffalo, N. Y., is inclined to believe that we see many cases of pyosalpinx complicating delivery that are due to a latent gonorrhea existing in the tube, which springs into activity as a result of the trauma incident to labor.

Dr. Charles L. Bonifield, Cincinnati, believes many cases of double pyosalpinx clear up sufficiently to allow the patients to become pregnant. In years gone by he told patients they would never become pregnant when he detected a mass on each side and there were further evidences of pyosalpinx, and on a few occasions he has been deceived after six, eight or twelve years, the pus having become absorbed and the women having become pregnant. He cited a case he had many years ago of double pyosalpinx, or he thought it was such. The woman refused operation. Everything in the pelvis was matted together. She gradually got better, and at the end of six or eight years became pregnant, and he delivered her. She passed through labor nicely, but at the end of a week she suddenly raised herself in bed and dropped over dead.

Dr. Rufus B. Hall, Cincinnati, does not believe that a woman with double pus tubes can afterward become pregnant. If such a woman should become pregnant he would be inclined to doubt the diagnosis of bilateral pyosalpinx.

Dr. John Young Brown, St. Louis, thinks the mere existence of pregnancy in the case narrated by the essayist precludes the possibility of the woman having had bilateral pyosalpinx. The pathology, as revealed by the autopsy, shows conclusively that the case was one of unilateral pyosalpinx, which was dormant and lighted up by the trauma of labor, and that the leakage from the pus tube produced the diffuse peritonitis, and the condition found on the other side was due to bathing this side with the pus that was produced by the peritonitis.

Dr. James F. Baldwin, Columbus, Ohio, has not had a case of double pyosalpinx followed by pregnancy, yet he thinks it may occur.

Dr. Lewis S. McMurtry, Louisville, Ky., said abdominal section in a puerperal convalescent is a very serious procedure. The operation of vaginal incision and drainage, so enthusiastically advocated by Pryor, would accomplish very little in a case like the one reported from the standpoint of therapeutics: hence, in the case reported we have a very valuable addition to the scanty literature of the subject as to the possibility of pathology of the tubes connected with puerperal disease, and a valuable guide to operative interference.

Some General Principles in Conservative Pelvic Surgery.

Dr. John F. W. Whitbeck, Rochester, N. Y., said that it is decidedly advantageous to have a general knowledge and a general experience before making use of special methods in the treatment of pelvic disorders. Medical and mechanical means should be tried in suitable cases before resorting to surgical intervention. Only diseased organs should be removed. Sound organs and normal parts of unhealthy organs should be preserved. Conservative plastic surgery should be employed to save such organs as can be made functional or to serve some useful purpose. Diseased organs should be removed in the order of their pathologic precedence and importance, with a view to benefit the patient by promoting her comfort and prolonging her life, even if a perfect cure is not to be expected.

Cesarean Section.

Dr. Henry Schwarz, St. Louis, reported the case of a child wife who was in labor sixty hours, with repeated attempts at forceps delivery by the family physician. Apparently she was not infected. Instead of a Porro, as is usual in such cases, he did the classical Cesarean operation, which was followed by recovery of both mother and child. The baby was asphyxiated, membranes and amniotic fluid yellowish green. His assistant worked over the baby an hour at artificial respiration before spontaneous breathing was established. Pressure marks on the scalp showed locking of the head between the promontory and symphysis; necrotic tissue dropped out a few days afterward, and the baby recovered.

Pregnancy Associated with Diabetes.

Dr. Magnus A. Tate, Cincinnati, mentioned the reports of numerous investigators, calling attention to sugar in the urine of pregnant women. He collected all cases that could be found in medical literature where pregnancy was complicated by diabetes. He reported an additional case, and presented a study of these tabulated cases as to their frequency, results, mortality and other similar data.

Cysts of the Mesentery.

Dr. Orange G. Pfaff, Indianapolis, said that these growths are comparatively rare; their diagnosis is difficult, if not impossible; their pathology is not fully and clearly understood, but most of them, if not all, are of probable embryonal origin. He reported two exceedingly interesting and instructive cases.

(*To be continued.*)

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARNYGOLOGY.

Tenth Annual Meeting, held at Buffalo, N. Y., Sept. 14-16, 1905.

(*Continued from page 939.*)

The Lens Capsule in the Operation of Cataract.

Dr. Herman Knapp, New York, said that if one lives long enough he will get cataract. He has never seen a patient who, after having attained the age of say 80, did not have a cataract. Only a very small proportion, however, of these cases come to operation. The capsule is the most unpleasant feature in cataract operations, and should be removed with the cataract. Since he has been doing flap extraction he has not had a case of sympathetic ophthalmia. He described his own technic of the operation, and referred to some of the accidents and complications met with in cataract extraction.

Accidents and Complications in Cataract Extraction.

Dr. D. W. Greene, Dayton, Ohio, gave a brief review of the history of the operation, showing the evolution through which the different stages have passed from Petit (1706), Daviel (1745), to the present time. The shifting of the section forward is now accomplished until it is now made entirely corneal. He referred to the smaller iridectomy or its entire omission, and described the different methods of opening the capsule and delivering the lens and cortical débris. Reference was made to the so-called toilet of the operation. He said the combined operation is usually made. He spoke of the accidents in and what are complications of the operation. A strict definition of each is difficult. He outlined the management of a normal case, also the management of accidents and complications. Accidents are usually operative. Complications may be present at the time of operation; they may result from accidents during operation, but as a rule are postoperative. Age as such is never a contraindication. The physical and mental conditions incident to it may be complications. He discussed the matter of when the lens is extracted within the capsule. Allusion was made to the use of flannel bandages, lint and cotton compresses in the treatment. Confinement in bed is not rigidly enforced after the second day. All of the things mentioned are intended to lead up to and make clear the title of the paper, as well as the subjects treated under it.

DISCUSSION.

Dr. John E. Weeks, New York, said that in operating for cataract the incision should be made in the vascular portions of the eye, that is, at the limbus, making a conjunctival flap. He now makes a conjunctival flap in all cases. He removes a portion of the capsule. The method of opening the capsule advocated by Knapp is a good one, but is not free from objection. The method recommended by von Graefe for opening the capsule is excellent. He prefers the combined operation rather than simple extraction.

Dr. Edward Jackson, Denver, has for several years practiced opening the capsule; he demonstrated his method of doing it.

Dr. Alvin A. Hubbell, Buffalo, said the incision of Daviel is ideal, but Dr. Hubbell makes it upward instead of downward, almost at the corneo-scleral junction. The drawbacks of the simple operation are greatly in excess of those of the combined method. He prefers the combined operation. The capsule can be opened centrally. He favors the T-shaped incision of von Graefe, and spoke of the importance of irrigating the anterior chamber.

Dr. Eugene Smith, Detroit, said that it is an easy matter to remove the anterior capsule in operating for cataract, and he has been doing this for several years—fifteen or twenty years. He prefers simple extraction in suitable cases, the combined operation in others. He advocates the use of capsule forceps.

Dr. Baker, Cleveland, added his testimony to the value of the peripheral capsulotomy of Knapp. He favors the combined method.

Dr. J. E. Willis, Pittsburg, said the lens should be extracted as soon as possible, and with the least interference with the eye. He favors simple extraction, as he gets better results. He thinks it is an ideal operation. He believes a preliminary iridectomy is unnecessary.

Cyst of the Thyroglossus Duct.

Dr. John J. Kyle, Indianapolis, stated that the thyroglossus duct is an embryologic structure which disappears about the eighth week of fetal life. From faulty growth the duct may remain and manifest itself in extrauterine life by the formation of a cyst, which may be situated near the base of the tongue or between the deep fauces of the neck, and between the hyoid bone and the thyroid cartilage. The review of the literature was given with the description of the case observed in a woman 45 years of age.

DISCUSSION.

Dr. Andrew Timberman, Columbus, has never seen a case of cyst of the thyroglossus duct. He spoke of the difficulties attending the diagnosis of it.

Dr. Kate Wylie Baldwin, Philadelphia, has had two cases of cyst of the thyroglossus duct, one in a girl of 16 and the other in a woman of 25. In one the cyst was the size of a hickory nut; in the other the size of a pullet's egg. These cysts were thoroughly dissected out; healing by first intention occurred, and there has been no return.

Dr. Joseph C. Beck, Chicago, saw a case in the practice of Nicholas Senn, which was operated on, but in which recurrence took place.

The Pinguecula and Pterygium.

Dr. Adolph Alt, St. Louis, read a paper with this title which was illustrated by stereopticon slides. He reviewed the literature on this subject, with special reference to the connection between the two affections from the standpoint of the pathologist, and said that it rehabilitates in some measure Arlt's marginal ulcer as a cause of pterygium.

The Mammalian Eye.

Dr. Casey A. Wood, Chicago, gave a talk on the mammalian eye, illustrated by colored slides prepared from original drawings by the artist, Dr. A. W. Head. This is the first time these fundus pictures were ever presented or exhibited in America, and it is through the courtesy of Dr. Head that they were obtained.

Filaria Loa.

Dr. Derrick T. Vail, Cincinnati, discussed the varieties of nematodes simulating *Filaria loa* (eye worms); he described the parasite, its habitat, and mentioned the theories as to its development. He also spoke of the mode of infection and of the rarity of actual cases in this country. He reported a genuine case and exhibited specimens.

The Ciliary Processes in Accommodation.

Dr. F. Parke Lewis, Buffalo, spoke of the importance of accommodation in relation to the eye itself, and pointed out the difficulty of studying the problem from a physiologic standpoint. He said that pathology interrupts its smooth working and makes evident points otherwise obscure. Tension was directed to the inadequacy of the Helmholtz theory. The Tscherning theory is more satisfactory, but is not explained by the mechanism. The relations and nature of the ciliary processes were discussed. Nature adapts an organism to existing necessities, but does not often vary fundamental principles. He describes the ciliary processes in the pig, in the reptile, in the bird, in the fish and in man, illustrated by a series of stereopticon slides. The segmental action of the ciliary processes is necessary to explain visual correction of an astigmatic cornea. There is conjugate action of corresponding segments in one eye or in both. He spoke of its importance in nutritive conditions of the lens, and in sympathetic ophthalmia in correlated brain centers.

Should Tonsillar Tissue Be Removed in All Cases?

Dr. George W. Spohn, Elkhart, Ind., said that the glandular tissue in the pharyngeal vault, between the pillars of the fauces, at the base of the tongue, within the ventricle of the larynx and within the nasal orifices, is generally known as the tonsillar tissue. As regional glands they are physiologic. As tonsils they should be known as pathologic conditions. As diseased glands, tonsils should be removed. When not diseased and normally functionating they should not be removed.

Spontaneous Hemorrhage into the Vitreous.

Dr. Theodore B. Schneideman, Philadelphia, stated that hemorrhages into the vitreous of traumatic origin are not very rare, but spontaneous hemorrhage is quite uncommon. The latter is dependent on changes in the walls of the blood vessels. Of constitutional affections responsible for such changes, tuberculosis, pernicious anemia, syphilis, malaria, are to be particularly mentioned. In older subjects atheroma occupies the first place. In the two cases the author reported the underlying cause was obscure. One occurred in a young man of 21, and the other in a neurotic woman about the time of the menopause.

Hemorrhage from the Eye.

Dr. Alvin A. Hubbell, Buffalo, reported two cases of profuse hemorrhage from the eye. One was from the conjunctiva of a new-born infant after several instillations of a 2 per cent. solution of nitrate of silver, and the other from the eyeball of an adult whose cornea had become ulcerated and perforated in the course of a long-continued glaucoma.

DISCUSSION.

Dr. W. L. Dayton, Lincoln, Neb., mentioned a case of retinitis albuminurica occurring in a young patient in whom there was extensive hemorrhage into the vitreous about the macular region. The peripheral portion of the retina could be distinctly seen.

Dr. F. Park Lewis thinks the cause of hemorrhage into the vitreous in some cases may be due, first, to some local degenerative condition of the vessels, and, second, to some irritative condition of sufficient intensity to cause the normal vessel to contract.

Dr. Percy Fridenberg, New York, narrated an interesting case of intraocular hemorrhage in connection with disorders of menstruation. In this case both retinæ became detached.

Dr. Edward J. Bernstein, Kalamazoo, Mich., reported a case of intraocular hemorrhages with fibrous bands in a boy of 14. The case progressed to complete disorganization of the eye.

Dr. Alvin A. Hubbell recalled four cases of recurrent hemorrhages into the vitreous. All of the patients were males. Two were young men of 22 or 23. The other two were men in middle life. In each case the hemorrhages occurred at irregular intervals, and the hemorrhages would absorb with very little destruction of vision. He has never seen a case of recurrent hemorrhage into the vitreous in a female. He has no explanation to offer as to the cause of these hemorrhages.

Dr. George M. Gould, Philadelphia, referred to eye-strain as a possible cause of hemorrhage into the vitreous. He has seen several cases of hemorrhage into the vitreous or anterior portions of the eye which he has relieved, and these were found to be due to eye-strain.

Dr. H. B. Young, Burlington, Iowa, has seen, in the past month, a case of spontaneous hemorrhage into the vitreous in a man, 30 years of age, married, of good habits, but who for years has had chronic albuminuria. Young considers the connection between a vitreous hemorrhage and albuminuria a definite one. He has also seen a case of excessive subconjunctival hemorrhage in a man of 50 without any known cause.

Dr. L. A. W. Alleman, Brooklyn, reported cases similar to those narrated by Gould.

Dr. Gould raised the point as to whether strong solutions of nitrate of silver may not cause these vitreous hemorrhages in some cases.

Dr. Adolph Alt, St. Louis, mentioned a case in which one drop of a 2 per cent. solution of nitrate of silver was dropped on the cornea, and in a few hours thereafter hemorrhage from the conjunctiva occurred which could not be controlled, so that the child died in a week or less from exhaustion and exsanguination.

Dr. John E. Weeks said that in the preparations of silver we have protargol and argyrol, which are efficient and harmless remedies. If argyrol is used in a strength of 35 per cent. solution, or protargol in a relatively strong per cent., the danger to the patient would be *nil*, and the effect produced would be as good, in his opinion, as that to be obtained by the use of nitrate of silver.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Hyperidrosis.

Brocq, in *Archives de Méd. et Chir.*, recommends that insoles made of filter paper, linen or cork be saturated with the following mixture and allowed to dry before being inserted in the shoes:

℞.	Potas. perman.	gr. xv	1	50
	Thymol	gr. viii		
	Aquæ	℥iiiss	105	

M. Sig.: Saturate the insoles with the solution, and after they have dried insert them into the shoes, and change daily. Or:

℞.	Naphthol	gr. lxxv	5
	Glycerini	ʒiiss	10
	Alcoholis	℥iiiss	105

M. Ft. lotio. Sig.: Bathe the feet well with the lotion and dust them with the following powder:

℞.	Naphthol	gr. xv	1
	Pulv. amyli	℥ii	60

M. Sig.: To be used as a dusting powder for the feet.

Or the following powder may be used:

℞.	Pulv. talci	℥i	30
	Bismuthi subnit.	ʒx	40
	Potass. perman.	gr. xlv	3
	Sodii salicylatis	gr. xxx	2
	Pulv. amylii	℥ii	60

M. Ft. pulvis. Sig.: To be used locally as a dusting powder. Or:

℞.	Tinct. ferri chloridi	℥i	30
	Glycerini	ʒiiss	10

M. Ft. solutio. Sig.: Apply locally to the soles of the feet. Or:

℞.	Quin. sulphatis	gr. lxxv	5
	Acidi tonnici	gr. xxx	2
	Alcoholis	℥iii	90
	Aquæ	℥viii	240

M. Ft. lotio. Sig.: To be used as a wash for the feet.

This is to be followed by a powder composed of:

℞.	Acidi salicylici	gr. xlv	3
	Pulv. amyli	ʒiiss	10
	Pulv. talci	℥iii	90
	Pulv. aluminis	℥iss	45

M. Ft. pulvis. Sig.: To be used as a dusting powder for the feet. Or:

℞.	Tinct belladonnæ	ʒvi	24
	Spiritus odoratus	℥iv	120

M. Sig.: To be applied locally to the sweating feet.

Treatment of Phlebitis.

Phlebitis, according to Robin in *Med. Press,* should be divided into three distinct phases: acute, convalescent and chronic.

As soon as the trouble is properly diagnosed the limb should be placed in a box or wire splint and well covered with cotton wool, first powdering it with the following:

℞.	Acidi boracici	ʒiii	12
	Pulv. talci	℥iii	90

M. Ft. pulvis. Sig.: Dust over the affected limb before applying the splint.

He does not recommend the local application of ointments as usually recommended during this stage, but prefers the dry treatment. Milk should be the principal article of diet. At the end of three weeks or a month the second stage, as mentioned by the author, begins, when the splint should be removed from the limb and the limb gently rubbed with a lubricant such as lanolin or oil of theobroma, and again enveloped in cotton wool and allowed to rest on a support for three days. If at the end of that time no pain is felt or any rise of temperature observed, the covering may be removed and the following gently applied locally once a day:

℞.	Ext. hamamelidis flu	ʒss	2
	Lanolini	℥i	30

M. Ft. unguentum. Sig.: Apply locally to the affected limb.

At this period the limb may be given massage in a gentle manner to promote the general circulation. It must be done lightly with the palm of the hand for five or six minutes once a day. In order to facilitate resolution the following may be rubbed in every evening:

℞.	Ergotin	ʒi	4
	Kalii iodidi		
	Ext. nucis vom., āā	ʒss	2
	Lanolini	℥i	30

M. Ft. unguentum. Sig.: Apply locally.

After fifteen days of this treatment active and passive movements of the limb are recommended by the author, these consisting in flexion, extension, abduction and rotation of the foot.

The treatment of phlebitis is concluded by the author by applying a bran bath every day for twenty minutes, gradually lengthening the time to forty-five minutes. After the bath the patient must be instructed to rest for half an hour, when massage should be given for ten minutes, followed by a rest of thirty minutes, when the patient may be allowed to take a little exercise on the feet. This treatment may be kept up for three weeks, but the author cautions against giving massage in the region of the large veins, in the popliteal space, in Hunter's canal or in Scarpa's triangle. To promote the nutrition of the atrophied muscles and to improve the venous circulation walking is recommended in moderation, avoiding fatigue. This author forbids the patient standing or sitting down; he must either walk or lie down.

To Prevent the Shedding of Hair.

David Walsh of London, according to an abstract in *Med. Standard*, recommends the following combination to prevent the hair from falling out, stating that it is preferable to an ointment, especialy in the cases of women:

℞.	Acidi salicylici	ʒiii	12
	Acidi carbolici	ʒi	4
	Olei ricini	ʒiii	12
	Spts. vini rectif. q. s. ad	℥vi	180

M. Sig.: Apply locally once or twice daily.

Mucus Colitis.

R. C. Kemp, in *Amer. Med.*, recommends in the treatment of mucus colitis that the patient be put to bed and heat applied to the abdomen by means of flaxseed poultices, turpentine stupes or hot pepper poultices, using dram one (4.00) of red pepper to a pint of boiling water, a flannel wrung out of this solution applied to the abdomen and covered with oiled silk. Dry heat may be employed if necessary by means of a hot-water bag, a hot bag of salt or a tin plate heated and covered by flannel and applied to the abdomen. Moist heat, however, is preferable. The greatest relief from the cramp, according to the author, are afforded by enteroclysis, using a recurrent irrigator and the normal saline solution at a temperature of from 110 to 120 F., and adding the oil of peppermint, from five (.30) to fifteen minims (1.00) to the quart of water. Several gallons may be used once or twice in the twenty-four hours, allowing no water to remain in the bowels to excite further cramps. High enemas of olive oil, using a pint or a quart of the oil, are also of value in relieving the spasm in similar manner to the relief of spasm of the pylorus by the internal administration of olive oil.

Hot saline enemas containing from two to four ounces (60 to 120) of the milk of asafetida are also of value in relieving the cramps.

Liquid diet, such as broths, soups and milk, should be prescribed. The tincture of belladonna as recommended by all authors is advised, beginning with 10 minim doses every three or four hours, and increasing the dose till the physiologic symptoms occur, is recommended to give relief from the spasms. Occasionally the author resorts to codein in doses of grain ¼ to grain ½ (.015 to .03), or even morphin in doses of grain ⅛ to grain ¼ (.008 to .015) when the pain is excessive.

If the acute attack is prolonged the valerianates or asafetida are recommended internally and the milk of asafetida as an enema. Between the attacks proper support to the abdomen is advised, producing pressure backward and upward by means of a silk abdominal supporter, or in its stead an adhesive plaster belt. If the latter is used the surface of the abdomen must be smoothly shaven and cleansed with alcohol or ether before the adhesive belt is applied. The belt should be changed about once in four weeks. To relieve constipation enemas of the normal saline solution are recommended several times a week to promote intestinal peristalsis, and in this way to prevent the accumulation of mucus and thus to lessen the tendency to the recurrence of the spasms. He emphasizes the importance of using only the normal saline solutions or the demulcents as enemas for the removal of the mucus, as the condition is due to hypersecretion and not to inflammation. He avoids the use of irrigations of silver, tannin, alum, etc., as they can produce an artificial hypersecretion. Nux vomica or strychnia may be given between the attacks to increase the muscular tone of the intestine. If much gastrointestinal fermentation is present the following combination is recommended:

℞.	Resorcini	gr. v	30
	Sodii benzoatis		
	Bismuthi salicylatis, āā	gr. v-x	30-.65

M. Ft. capsula No. i. Sig.: One such capsule three times a day before food.

W. H. Thomson recommends the following in mixed cases in which some catarrh of the intestine is present:

℞.	Argenti nitratis	gr. v	30
	Resinæ terebinthinæ	ʒiii	12
	Liq. potassæ	ʒi	4
	Pulv. glycyrrhizæ q. s.		

M. Ft. pil. No. lx. Sig.: Three pills three times a day.

Copper sulphate grain ¼ (.015) may be substituted for the foregoing later. Fowler's solution in one-drop (.06) doses three times a day is also recommended in mixed cases.

The general treatment consists in outdoor exercise, such as golf, to strengthen the abdominal muscles, and in winter fencing is of value. Anemia must be corrected by means of Bland's mass combined with small doses of arsenic and nux vomica.

Medicolegal

Age or Weight and Personal Injuries.—The Court of Errors and Appeals of New Jersey holds, in the personal injury case of Staines vs. Central Railroad Company of New Jersey, that the fact that the injuries of the plaintiff would not have happened to a younger person, or one of less weight, did not absolve the defendant from liability for such injuries.

Injured Physician May Testify as to Earnings.—The Supreme Court of Missouri says, in the case of Sluder vs. St. Louis Transit Co., where a physician was incapacitated to practice his profession for eleven and one-half weeks by a collision of a street car with a carriage in which he was riding, that no reason was stated why it was not competent for the physician himself to testify what his actual monthly practice averaged him. It was not guesswork, but actual knowledge, to which he was testifying. It was not remote, but the value of his profession to him for the immediate months during which he was disabled, and the court agrees with him that the best evidence was the actual earnings of the month in which he was injured. In other words, the court holds that there was no error in permitting him to testify to his earnings for the corresponding months of the previous year.

Mental Disease Relieving from Criminal Responsibility.—The Supreme Court of Georgia holds, in Allams vs. State, that where the accused on trial for murder relied on the defense of insanity at the time of the homicide, it was not error to instruct the jury that the burden was on him to show "that at the time of the killing he was not of sound memory and discretion. He must show this not beyond a reasonable doubt, but to the reasonable satisfaction of the jury, by a preponderance of the evidence." Nor was it error on the trial of such a case to charge the jury that, if the accused had been shown to be insane prior to the date of the homicide, the presumption would be that he continued to be insane, "and the burden of proof would be on the state to show to the reasonable satisfaction of the jury, by a preponderance of the evidence, that at the time of the alleged homicide the defendant was of sound memory and discretion."

The rule of law in force in Georgia which relieves one from criminal responsibility for the commission of an unlawful act on account of mental disease is: If a man has reason sufficient to distinguish between right and wrong in relation to a particular act about to be committed, he is criminally responsible. An exception to this rule is where a man has reason sufficient to distinguish between right and wrong as to a particular act about to be committed, yet, in consequence of some delusion, his will is overmastered, and there is no criminal intent, provided that the act itself is connected with the peculiar delusion under which the prisoner is laboring. It follows, therefore, that it was not accurate to charge as follows: "The insanity which the law recognizes as an excuse for crime must be such as dethrones reason and incapacitates an individual from distinguishing between right and wrong as to the particular act in question, and of being mentally incapable of choosing to do or not to do the alleged act, and governing his conduct in accordance therewith." To relieve one from criminal responsibility on account of mental delusion for the commission of an unlawful act, it is not necessary that he be incapable of distinguishing right from wrong as to the particular act in question, and also incapable of choosing to do or not to do such act, and of governing his conduct in accordance therewith.

Alcoholic Compounds Labeled as Medicines.—The United States Commissioner of Internal Revenue says, in Internal Revenue Circular No. 673, dated Sept. 12, 1905, addressed to collectors of internal revenue, with regard to alcoholic compounds labeled as medicines and held out to the public as remedies for diseases.

Among the various alcoholic compounds now on the market, advertised and sold under the name of whisky, bitters, tonic, cordials, etc., there are some that are composed chiefly of distilled spirits, or mixtures thereof, without the addition of drugs or medicinal ingredients in sufficient quantities to change materially the character of the alcoholic liquor.

The fact that these compounds during the existence of the statute imposing tax on proprietary medicines were without the necessity of investigation into their character by the terms of the law made subject to that tax, because they were held out to the public as medicines, does not afford ground for relieving the manufacturers from special tax as rectifiers and liquor dealers, or dealers therein from special tax as liquor dealers under the provisions of Section 3244, Revised Statutes, and amendments.

It is held that the statute requires the exaction of this special tax from the manufacturer of every compound of distilled spirits, even though drugs are declared to have been added thereto, when their presence is not discoverable by chemical analysis, or it is found that the quantity of drugs in the preparation is so small as to have no appreciable effect on the alcoholic liquor of which the compound is mainly or largely composed.

The same ruling applies to every alcoholic compound labeled as a remedy for diseases and containing, in addition to distilled spirits, only substances or ingredients which, however large their quantity, are not of a character to impart any medicinal quality to the compound; but where substances undoubtedly medicinal in their character are combined with whisky or other alcoholic liquor, and are used in sufficient quantity to give a medicinal quality to the liquor other than that which it may inherently possess, such compound is, of course, not to be included in this ruling.

The question, in each case, arising under the terms of this circular will be determined by this office, not merely on examination of the formula submitted by the manufacturer of the compound, but on result of the analysis in the chemical laboratory here of samples obtained in the open market and sent in by the local internal revenue officers and agents.

The ruling as to these compounds in the fourth paragraph of Circular No. 608 (Treasury Decisions, 1901, Vol. 4, p. 210), "that if they are composed of spirits in combination with drugs, herbs, roots, etc., and are held out as remedies for diseases stated in labels on the bottles, they are to be regarded as medicines until the facts ascertained, as to the purpose for which they are usually sold or used, show them to be beverages, and until such facts are obtained druggists and merchants who sell these compounds in good faith as medicines only are not to be called on to pay special tax as liquor dealers on account of such sales," is hereby revoked.

But in order that no injustice may be done to these druggists and merchants who, without holding special-tax stamps as liquor dealers, now have in stock these compounds for sale as medicines, this circular will not be put into effect until Dec. 1, 1905.

Collectors will, however, immediately on the receipt of this circular send out notice to all druggists and merchants dealing in proprietary medicines in their districts who do not hold the requisite special-tax stamp as liquor dealers, that on and after Dec. 1, 1905, they will be required to pay special tax for selling the alcoholic compounds coming within the ruling now promulgated, even when they sell them in good faith for medicinal use only, never selling them as beverages, nor selling them knowingly to those buying them for use as beverages. [In this connection, see editorial Sept. 23, 1905.]

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

September 16.

1 Treatment of Malignant Strictures of the Rectum. H. A. Kelly, Baltimore, Md.
2 *Therapeutic Value of Bactericidal Serums. H. D. Pease, Albany, New York.
3 *Gastrojejunostomy for Benign Stenosis of the Pylorus. W. H. Morrison, Philadelphia.
4 Acute Prostatitis. H. M. Christian, Philadelphia.
5 *Emotional Shock and Fright as Causes of Epilepsy. W. P. Spratling, Sonyea, N. Y.
6 Chorioepithelioma Malignum. W. L. Wallace, Syracuse, N. Y.
7 *Operative Treatment of Cleft Palate and the Causes of Failure. J. D. Singley, Pittsburg, Pa.

2. **Therapeutic Value of Bactericidal Serums.**—Pease reviews some of the clinical results obtained by the use of the various antistreptococcic serums in streptococcus infections, scarlet fever, rheumatism and smallpox, and the antipneumococcic, antityphoid, antituberculosis, antidysenteric, antiplague and antianthrax serums in their respective diseases, and calls attention to the variability in the reports of different writers on their results from the use of these serums, and the necessity for taking the personal equation into consideration in passing judgment on such reports. He concludes that it is evident that in no one of the diseases considered has there yet been demonstrated an entirely satisfactory serum therapy. Although sufficient beneficial results have been obtained with some of the streptococcic, dysenteric, plague and anthrax antiserums to warrant at least some hope of better results when

our knowledge of these infections and their etiologic agents has become materially increased.

3. **Gastrojejunostomy for Benign Stenosis of Pylorus.**—Morrison reports the case of a man, aged 44, who came under observation when he was suffering from a sudden attack of severe hematemesis. He had had three previous attacks at intervals of about one year: in the intervening periods he was fairly well and able to work. There had been considerable digestive disorder with frequent attacks of vomiting. Examination showed marked dilation of the stomach, the greater curvature extending two inches below the umbilicus. There was no tenderness and no tumor could be detected. The contraction of the pylorus increased until apparently nothing passed into the intestine, all food taken being vomited after a longer or shorter interval. The abdomen was opened in the median line and a communication established between the posterior part of the stomach and the jejunum, four inches from the duodenojejunal fold, a large-sized Murphy button reinforced by a continuous peritoneal suture being employed. Recovery was uneventful.

5. **Emotional Shock and Fright as Causes of Epilepsy.**—According to Spratling, emotional shock and fright, as causes of epilepsy, do not receive the attention they should. Epilepsy may supervene immediately after the application of such a cause or be delayed for some time. The reapplication of the primary cause often induces successive attacks similar in nature. Predisposition usually exists in all such cases. In 1,323 cases Spratling found emotional shock or fright to have been the cause in 62 cases, 5.5 per cent. Of these patients, 22 were males in a total of 814, and 40 were females in a total of 509, being 3 per cent. of the former and 8 per cent. of the latter. This shows such causes to be nearly three times as active among men as among women. This greater susceptibility in women is present from childhood. During the first ten years of life there were 14 cases due to this cause among 814 males, and 15 cases among 519 females. After the twentieth year there was only one case in either sex. It appears from the studies in question that emotional shock or fright most often leads to epilepsy in the female sex, and that these factors are most apt to be active about the age of puberty.

7. **Operative Treatment of Cleft Palate.**—Singley states that the results in the operative treatment of cleft palate are almost certain to be good if accurate approximation can be secured and maintained without tension. From three to five months before operation a dentist places in the three upper posterior molars a small metal clamp, the two sides of which can be gradually approximated by a screw and nut, thus diminishing the width of the cleft. The clamp is removed a few days before operation. The edges of the cleft are split laterally, using a small knife with a flexible copper shank, thus securing broader surfaces for union. The relaxation incisions on either side are kept packed with strips of iodoform gauze, preventing contraction during healing of these incisions with pulling on the suture line. A marked Trendelenburg posture is used with the head of the patient just above the knees of the operator. Proper postoperative treatment ranks next in importance to approximation without tension. This comprises absolute starvation for two or three days with nutritive enemas, absolute prohibition of talking, and frequent irrigation of the parts with a mild antiseptic solution. The gauze packing is removed and replaced daily.

Medical News, New York.

September 16.

8 *A Test of Condition: Preliminary Report. C. W. Crampton, New York.
9 Intussusception. W. E. Dicken, Oklahoma City, O. T.
10 Retained Intubation Tube Treated by Gradual Dilatation. F. L. Taylor, New York.
11 Dermoid Cysts of the Mediastinum. R. S. Morris, Ann Arbor, Mich.
12 Diagnosis and Differential Diagnosis of Incipient Pulmonary Tuberculosis. H. F. Stoll, Hartford, Conn.
13 *Rod Auscultation. E. Reichmann, Berlin, Germany.

8. **Test of Condition.**—For the purpose of determining the real condition or relative degree of health of an individual, Crampton has devised a condition test. The patient is directed to lie down flat on a couch with no head rest. The armlet of the blood pressure instrument is then placed around the upper arm. This should be arranged so that it bears the same relation to the heart lying as it will when the patient is standing, so that no hydrostatic error will be included. Absolute quiet is insisted on, relaxation of the muscles is necessary, and all emotional disturbances should be guarded against. The pulse rate is then taken by quarter minutes for at least four successive quarters. These should be recorded until a plateau is arrived at in which the heart is steady, the indication of which may be taken to be the point where four records show no decrease. These four records forming a minute's record should be noted for comparison with the standing rate. Without releasing the grip on the radial artery, the systolic pressure should be taken. This should be taken twice, and if any great difference is noted, a third time, and the average struck. If there is any considerable variation noted, it may be due to several disturbing factors, such as an uncomfortable position, emotional disturbances, nervous muscular contractions, holding the breath, etc., all of which should be eliminated. These items recorded, the patient is allowed to stand and the same records taken in the same way with the same precautions. It is important that the pulse rate should be allowed to fall to its standing normal after rising, for it is accelerated by the muscular act of getting up. The blood pressure also rises considerably at first (though it may fall), but it strikes a balance, as a rule, a little before the pulse rate does. Compare results and arrive at a conclusion as to the condition of the individual. The whole test takes less than five minutes. It is advisable, at first, to repeat the test and to corroborate the findings of the first examination; with little practice, however, a repetition is unnecessary. By the use of this test one can estimate the progress made in chronic cases and the value of the remedies applied. It is inapplicable to any but ambulant cases, for rest in bed interferes with it strongly. A moderate amount of rest in the run-down will increase the efficiency of the vasomotor mechanism, but long-continued rest decreases its efficiency, from disuse, to a marked extent. The fall of cerebral pressure and consequent syncope caused by even the sitting up in bed of a patient long recumbent is familiar to all. Its chief use in future will no doubt be in the diagnosis of the amount of damage to the general vitality of any hidden disease or any course of life has produced in the patient under observation for the first time, and also in the estimation of the progress made under treatment. In therapeutics it is not enough to know how a drug affects the blood pressure; the physician must know how it affects the vasomotor control. Crampton has applied this test to a number of hard-worked business and professional men with most satisfactory results. In every case it formed an accurate and reliable index to real improvement. It was very much steadier in its readings than would be expected from the apparent variations in observed condition, which were extremely variable, but it seemed to check real improvement much more positively than could be determined by observation. In one case of neurasthenia, in which a relative degree of sexual impotence was a symptom, the index followed the regaining of this function very exactly, and marked a relapse as accurately.

13. **Rod Auscultation.**—To practice Reichmann's method, a small rod of special design is applied firmly and vertically to the surface of the body, and the top of the middle finger is passed with moderate force over the rod, while it is steadied with the thumb and index finger. This friction produces, in the rod, vibrations—sound-waves—which, in accordance with well-known physical laws, are transmitted in every direction. Hence they pass also on the surface of the body, and, if sufficiently strong, into the subjacent organs, from which they are again transmitted in every direction. If then a stethoscope be placed near the rod, with the ear applied thereto, these sound waves can be heard, and a sound of a peculiarly grating character, resembling somewhat the noise produced when a finger is passed over silk or similar material, is noted. If the skin is soft and not tense, the sound waves can pass through it for only a very short distance, and likewise they can not go very far in the loose subcutaneous tissue. If they encounter an underlying contracted muscle, or,

for instance, a rib, they will naturally be transmitted into the structure, and, according to its course, continue in it, becoming audible nearly over the full extent of this muscle or rib, provided that both stethoscope and rod are placed over the same structure; an internal organ under these conditions will, therefore, not be able to influence the audibility of the sound waves. The conditions are different if a muscle or a rib does not intervene between the internal organ and the stethoscope and rod, or if either the stethoscope or the rod is applied so as to avoid a muscle or rib. In this case, then, it is impossible for the sound-waves to be transmitted through the latter from the rod to the stethoscope, and the examination of the internal organ is no longer disturbed thereby. Since the sound waves are transmitted in every direction in this internal organ, the sound produced by them can be heard as long as stethoscope and rod are over this organ, and cease to hear them when one or the other has left the organ; this for the reason that the waves being reflected at the boundary of the organ, at the serous covering, are thus prevented, or nearly so, from passing to an adjacent organ; hence, the sound that is heard becomes more dull and now resembles the noise produced by a finger passing over rubber or similar substances. Small organs are but little suited for rod auscultation, as transmission through the skin and the surface of the body is most likely to interfere with the examination. The heart also, in most instances, can not be outlined with sufficient exactness by this method. This is more especially true of the right and left boundaries of the heart because transmission through the ribs too often plays a disturbing part and vitiates the findings. The upper and the lower boundaries are more readily determined. It is much easier to examine the lungs. By means of rod auscultation it is possible also to differentiate the individual lobes of the lungs, provided they do not coalesce with one another. It is equally possible to determine the boundaries of the liver readily and accurately if the abdominal muscles are not tense, and especially when that organ is somewhat hard, and firm organs better conductors than flaccid and soft ones. The method is of special value in cases in which the diagnosis is somewhat in doubt and in which it becomes a matter of importance to clear this up, as, for instance, whether an abdominal tumor that has been definitely made out has its origin in the liver or is merely situated in its vicinity—a point that can not always be determined by palpation and percussion. The change of the friction sound in this case is bound to occur very distinctly between liver and tumor if the tumor does not coalesce with the liver; the change will not take place if it does so coalesce; the sound waves in the latter instance encounter no obstacle from which they are reflected.

Medical Record, New York.

September 16.

14 *Remarks on the Diagnosis of Diseases of the Nervous System J. Collins, New York.
15 *Case of Laryngeal Diphtheria Necessitating Intubation, Complicating Cerebrospinal Meningitis in an Adult. W. K. Simpson, New York.
16 Gall-Bladder Surgery. T. C. Kennedy, Shelbyville, Ind.
17 *The Influence of Pneumococci on the Healing of Wounds. J. W. Robinson, Bozeman, Mont.
18 Control of Tuberculosis in the Philippines. D. M. Appel, U. S. A.
19 *Aortic Reflexes. A. Abrams, San Francisco.
20 *Rôle of Trichocephalus in the Etiology of Typhoid Fever. G. Spezia. Turin, Italy.

14. **Diagnosis of Diseases of the Nervous System.**—Collins says that the reasons why nervous diseases are considered to be a strange country by the general practitioner are: (1) Because there is an inherited conviction that such diseases are extremely obscure; (2) because there is an acquired conviction that in order to unravel the intricacies of such diseases, a comprehensive knowledge of the anatomy and physiology of the nervous system is required; and (3) because many physicians do not take the trouble to acquaint themselves with the simple methods of testing for the existence of nervous disease. He explains that this is a mistaken standpoint and shows that nervous diseases, if approached with the same care that is necessary for the study of other affections, are no more difficult or obscure than most medical problems. Any medical man who will free himself from his preconceived ideas of the difficulties of the subject will have no more difficulty in dealing satisfactorily with nervous diseases than he has with any other disease in the province of internal medicine. The diagnosis of the commoner and more important nervous maladies is analyzed at length, for each condition, and illustrative cases are cited.

15. **Laryngeal Diphtheria Complicating Cerebrospinal Meningitis.**—Simpson reports a case of laryngeal diphtheria which existed at the same time with cerebrospinal meningitis and did not modify the disease. This occurred at the time when the attempt was being made to modify the cerebrospinal meningitis by the use of diphtheria antitoxin. The patient had all the classical symptoms of cerebrospinal meningitis, when she began to complain of hoarseness, croupy cough and dyspnea. There was no membrane in the pharynx or on the tonsils, but pieces of membrane were coughed up in which the Klebs-Loeffler bacillus were found, in pure cultures. Intubation became necessary, and antitoxin was administered with good effect on the diphtheria, but without modifying the symptoms of the other disease in any way. Lumbar puncture was also performed on three occasions. The case went to irregular heart action and high temperature, and the patient developed pneumonia with fatal result.

17. **Influence of Pneumococci on Wound Healing.**—Robinson describes cases in which severe infections with pure cultures of pneumococci went on to a very favorable outcome. He concludes that (1) The pneumococci, if alone, cause little inflammatory reaction in the healing of wounds. (2) Possibly, in surgical diseases caused by pneumococci, some protective substance is formed that ameliorates the symptoms, as occurs in the crisis of a pneumonia. (3) In the treatment of a pus case care should be used to prevent a mixed infection, as healing is much more apt to be rapid and smooth if only one variety of bacteria is present.

19. **Aortic Reflexes.**—Abrams considers the aortic reflexes of great importance in medical diagnosis. To get these reflexes the palm of one hand is applied closely to the spinous processes, while the other clenched fist is used as a percussion hammer, using sharp, vigorous blows. For the reflex of dilatation he concusses the spinous processes of the eighth, ninth, tenth, eleventh and twelfth dorsal vertebræ. Then he quickly percusses the region of the thoracic aorta, and the course of that vessel is easily defined. This is a curved line beginning at the right sternal line in the middle of the first intercostal space, and ending at the point of insertion of the first rib to the sternum. The highest point is about 5 centimeters from the anterior thoracic wall, and the beginning 2 centimeters from it. Concussion of the seventh cervical vertebra causes aortic dullness to evanesce at once, as a result of the cause there is an inherited conviction that such diseases are fairly constant but variable in duration.

20. **Trichocephalus in Typhoid.**—Spezia made observations in 19 cases of typhoid, in 17 of which he found eggs of trichocephalus in the feces. In other diseases of the gastrointestinal tract these eggs are rare. The author believes that the trichocephalus inflicts wounds on the intestines, which permit of the entrance of the *Bacillus typhosus* in the intestinal wall. In view of these facts, it will be necessary, in typhoid fever, to use disinfectants capable of dissolving the resistant covering of these eggs, as well as of destroying the bacillus of Eberth; such, the author holds, are concentrated solutions of potassium and sodium salts.

Boston Medical and Surgical Journal.

September 7.

21 *Causes of Disability After Fractures of the Lower Leg and Ankle. F. J. Cotton, Boston.
22 Applied Anatomy of the Frontal Sinus. H. F. Mosher, Boston.
23 Study in Abnormal Psychology. G. M. Parker, New York.

September 14.

24 Modern Conception of Tuberculosis of the Skin. C. J. White, Boston.
25 *Clinical and Laboratory Study of the Therapeutic Value of Hydrochloric Acid in Diseases of the Stomach. R. F. Chase, Boston.
26 Ocular Vertigo of Interest to the General Practitioner. B. P. Croft, Greenfield, Mass.

21. **Causes of Disability After Fractures of Leg and Ankle.**—As the result of a careful study of 47 cases, Cotton found

that the chief causes of disability in leg and ankle fractures are: (1) Failure to preserve the line of the limb—and consequent static trouble. (2) Mechanical damage to the ankle joint. (3) Static trouble from overload on atrophied muscles—apart from any malposition. (4) Contractures. The tendency to malposition must be guarded against, first by careful study of lesions and by careful reduction; second, by careful review (checked, if possible, by x-rays) of the result of reduction and of the present condition—a review to be made after, not over two or three weeks, when swelling and spasm are gone, yet while correction of mistakes is still easy. Later, operations are the only resort—undesirable, yet they are often of great service. The pure static troubles independent of malposition are usually readily relieved by careful plate support. Cotton believes that the contractures are avoidable in all cases unless there is long-continued tendency to recurrence of deformity or delayed union or extreme trauma affecting soft parts as well as bone. In his opinion they call for treatment directed toward preserving flexibility and nutrition of the muscles, instituted before fixation has rendered the early spastic changes permanent. This means that rigid plaster bandages must be made removable at from two to four weeks, not at three months, and that exercises without weight bearing must be performed persistently under proper supervision. If this is not done, stiffness of ankles and less often of the knees must be expected as one of the great factors of disability.

25. **Therapeutic Value of Hydrochloric Acid in Stomach Affections.**—Chase gave 20 minims of HCl in 90 c.c. of water, two or three times, at fifteen-minute intervals, after an Ewald test breakfast. One hour after the meal was given the gastric contents were withdrawn and the acidity tested. Four tests were made. The total acidity was always increased, and in three of the four tests, free HCl was present in appreciable amounts. In one test it was absent. From 15 to 25 minims of HCl were given in 99 c.c. of water three times within an hour after the ingestion of a large meat sandwich, and 300 c.c. of water. Nine tests were made. In from sixty to seventy minutes after the meal was given, the total acidity of the gastric contents was always found increased, but free HCl was never present. Chase also found that the long-continued use of large doses (45 drops, three times daily), of HCl diminished the total acidity. He believes that the HCl has a depressing influence on the gastric acidity which is not generally recognized. Peptic digestion, however, is accelerated by the use of HCl, although in certain conditions large doses in some manner retard peptic digestion. He is of the opinion that while large doses of HCl often alleviate certain symptoms, they never improve any function of the stomach.

New York Medical Journal.

September 16.

27 The Food Factor in Asthma: Hyperpyremia. F. Hare, London.
28 *Floating Kidney Due to Colon Displacement. S. Chandler, Philadelphia.
29 *Epilepsy and Eyestrain. W. P. Spratling, Sonyea, N. Y.
30 *Convenient Method of Leucocyte Counting. E. L. Gros, Paris, France.
31 Formative Period of Early Infancy: Its Opportunities. E. Campbell, Cincinnati.
32 Mixed or Secondary Infection, with Some Considerations as to Treatment. E. A. Gray, Chicago.
33 Study of Masked Rheumatism. (Continued.) G. F. Souwers, Germantown, Pa.
34 Renal Distention. A. M. Wose, Syracuse, N. Y.
35 Hints on the Hygiene of Infancy. L. Johnson, Washington.

28. **Floating Kidney Due to Colon Displacement.**—A case of this kind is reported by Chandler. The left kidney was normal and in position. The right kidney was absent from its position. The small intestines and appendix were apparently normal, but the entire first portion of the large intestine was movable, and adherent to it was a tumor believed to be the absent right kidney. When the kidney space was opened it was impossible to find the kidney, yet it was readily felt in the anterior abdominal cavity. It was judged, therefore, to be free in this cavity, attached to the ascending colon, and this proved to be true. The intestine, in being displaced during pregnancy two years previously, had drawn the kidney with it, and gradually the peritoneum had closed behind the kidney, forming a pedicle carrying the vessels and ureter.

29. **Epilepsy and Eyestrain.**—Spratling cites one case for the purpose of calling attention to the fact that the wearing of glasses seemed to repress the epileptic attacks in a manner not dissimilar to the repression that is often secured by the use of bromids, and that like bromids, while they may mitigate the disease, they are without power to cure. Spratling says that he has yet to see a case of genuine epilepsy cured by correction of ocular abnormalities or by the use of bromids alone.

30. **Convenient Method of Leucocyte Counting.**—Gros designates this as the acetic acid and gentian violet method. The solutions used are: (1) Aqueous solution acetic acid, 5 to 1,000—30 grams; (2) saturated alcoholic solution of gentian violet, 10 drops. The best instrument to use for the count is Hayem's hematimeter. In addition, one must have a pipette for measuring 20 cm. of blood. Also one for measuring .5 c.c. of the acetic-gentian-violet solution. Another necessary accessory is a small glass-stoppered tube, containing about 1 c.c., in which the mixture is kept to be examined either at the bedside of the patient or at the doctor's office any time between one-half hour to three hours after the blood has been drawn. The acetic acid dissolves the red blood corpuscles, and the leucocytes alone appear in the microscopic field. The gentian violet is not strong enough to color strongly the whole leucocyte, but it makes the nuclei very visible and allows one not only readily to make the count, but also rapidly to determine the relative number of uninuclear and multinuclear cells.

St. Louis Medical Review.

September 16.

36 Etiology of Cancer. M. Schueller, Berlin, Germany.
37 Climate and Relapses in Pulmonary Tuberculosis. A. Dixon, El Paso, Texas.

Lancet-Clinic, Cincinnati.

September 16.

.38 Perfected Surgical Treatment of Fibroid Tumors of the Uterus. L. S. McMurtry, Louisville, Ky.
39 Scarlet Fever: Its History, Symptoms, Duration, Incubation and Variation in Type. J. M. Battern, Dowington, Pa.
40 *Infantile Paralysis: Its Nature and Treatment. A. E. Sterne, Indianapolis, Ind.

40. See abstract in The Journal, Oct. 24. 1903. p. 1041.

Pacific Medical Journal, San Francisco.

September.

41 Patent Poisons for Poor People. W. Anderson, London.

Journal of Infectious Diseases, Chicago.

June.

42 *Blood in Scarlet Fever. W. Tileston and E. A. Locke, Boston.
43 Case of Hematochyluria, with Some Observations on the Morphology of the Embryo Nematode—Filaria Nocturna. W. B. Wherry and J. R. McDill, Manila, P. I.
44 Case of Pulmonary Infection with an Acidfast Actinomyces. E. E. Butterfield, Washington, D. C.
45 Bacillus Mycogenes (Bacterium Mucogenum). Nov. Spec. An Organism Belonging to the Bacillus Mucosus Capsulatus Group. R. T. Edwards, Baltimore.
46 *The Nitrate and Nitrite Content of Witte's Peptone, with Special Reference to Its Influence on the Demonstration of the Indol and Cholera Red Reactions. W. B. Wherry, Manila, P. I.
47 Occurrence of Fusiform Bacilli and Spirilla in Morbid Processes. G. H. Weaver and R. Tunnicliff, Chicago.
48 Quantitative Study of Hemolytic Serum. W. H. Manwaring, Chicago.
49 *Rôle of the Typhoid Bacillus in the Pulmonary Complications of Typhoid Fever. G. C. Robinson, Philadelphia.
50 Thermostabile. Hemolytic Precipitate from Nutrient Broth. E. O. Jordan, Chicago.
51 Comparison Between the Results of Blood Cultures Taken During Life and After Death. N. B. Gwyn and N. MacL. Harris, Baltimore
52 Contribution to the Clinical Knowledge of Texas Fever. C. C. Guthrie, Chicago.

42. **Blood in Scarlet Fever.**—The investigations made by Tileston and Locke include the study of the blood of 34 cases of scarlatina, 28 of the patients being between the ages of 2 and 10 years, 1 under 2 years, and the remaining 5 varying from 11 to 23 years. Since the patients were observed in hospital wards, it was seldom possible to make an examination of the blood previous to the second or third day, as the patients usually did not enter until the disease was well developed. On the other hand, the examinations once begun were continued until death in the fatal cases, or until the establishment of complete convalescence in those ending in recovery. Only such cases were selected as gave unmistakable evi-

dence of the disease and remained under a constant diet and treatment. In no instance was any medication used other than small doses of strychnia, and even that in but few. The blood was taken about 9.30 a. m. or 4 p. m., in order to avoid any possible influence by the ingestion of food. The authors found that the blood of scarlatina in children differs from that in adults only in proportion to the differences in normal blood at the different ages. A slight secondary anemia is the rule in all but the very mild cases, varying directly with the severity and duration of the disease. The fall in hemoglobin is from 5 to 25 per cent., and in the erythrocytes from 100,000 to 700,000 per cm. Both return to normal after a period of several weeks. A hyperleucocytosis almost invariably accompanies the disease, and runs a characteristic course. Rising abruptly from the second to eighth day (18,000 to 40,000 per cm.) the count falls rapidly for a few days, then more gradually to reach normal in convalescence, usually at the end of from three to six weeks. During the period of invasion and eruption, the polynuclear leucocytes are both relatively and absolutely increased, but decrease gradually with the fall in the leucocytes till convalescence, when they may become relatively, though never absolutely, below normal. The mononuclears take an exactly opposite course. With the onset the eosinophiles disappear entirely or are greatly reduced, to rise above normal when defervescence begins. This eosinophilia persists until late convalescence. Myelocytes are often seen in small numbers, as in all infectious diseases. Complications, with a few exceptions, exert no influence on the course of the blood. If severe, they may increase the anemia, and in a few instances (nephritis and diphtheria) may even produce a rise in the leucocytes.

46. **Nitrate and Nitrite Content of Witte's Peptone.**—Wherry concludes that nitrites, and probably nitrates also, may gain entrance to artificial media from various sources—certain waters, "peptones" and filter papers—yielding distinct reactions for nitrites with naphthylamine hydrochlorid and sulphanilic acid. A sufficient quantity of nitrites may be further absorbed, in a few days, from the laboratory atmosphere, to yield a distinct indol reaction on the addition of 0.5 c.c. of chemically pure sulphuric acid to, for example, a culture of *Bacillus coli communis* 577 grown for twenty-four hours at from 36 to 37 C. in 10 c.c. of Dunham's peptone solution, which originally contained insufficient nitrite to yield such a reaction. The cholera spirillum does not produce nitrites in nitrate and nitrite-free "peptone" solution, prepared from Witte's "peptone" dialyzed free from nitrites; and when nitrites apparently are formed, their presence may be explained by the simultaneous testing of uninoculated controls. The vermilion-colored "cholera red reaction" must be distinguished from the purple-colored "indol reaction." The production of "cholera red," by the cholera spirillum or *Bacillus coli commuis*, takes place only, under the conditions of these experiments, during the reduction of a trace of nitrates, and when formed is demonstrable as such, whether pure sulphuric acid alone or sulphuric acid and nitrite are added, although an excess of nitrite furnishes enough nitrous acid to obscure the reaction. The growth of the *Bacillus coli communis* or of the cholera spirillum in the presence of sufficient nitrite to yield the indol reaction on the addition of a pure acid alone does not influence the character of the indol formed; but if a considerable amount of nitrite be present in the medium, the further addition of nitrite yields enough nitrous acid to obscure the indol reaction. The cholera red reaction is not specific. It is recommended that media used in testing for the production of indol or cholera red be examined for nitrates and nitrites before used.

49. **Typhoid Bacillus in Lung Complications in Typhoid.**—Robinson noted carefully the clinical history and course of several cases of typhoid which succumbed with symptoms indicating a pulmonary complication. A study of the postmortem findings in these cases, as well as a review of cases recorded in the literature, lead Robinson to draw the following conclusions: The typhoid bacillus not infrequently invades the lung during typhoid fever. It may invade areas of the lung already the seat of hemorrhagic infarction and there produce abscess formation and gangrene. The organism may cause bronchopneumonia, but lobar pneumonia as a complication of typhoid fever is usually due to the pneumococcus. This organism may be present as a general infection in the circulating blood simultaneously with the *Bacillus typhosus*. It is probable that both *Bacillus typhosus* and *Bacillus para typhosus*, type *B*, can produce a massive pneumonia, lobar in type. When these organisms are the causative factors, the pneumonia is of a peculiar hemorrhagic character, which may be recognized clinically from the bloody nature of the sputum. The typhoid bacillus is not infrequently found in the sputum of typhoid fever patients with pulmonary complications. This fact should be emphasized in order that spread of the disease by this means may be prevented.

Surgery, Gynecology and Obstetrics, Chicago.

September.

53 *Conservation of the Ovaries and the Uterus in Operative Procedures on the Uterine Adnexa. Th. Tuffier, Paris.
54 Supernumerary Thyroid at Base of Tongue. D. P. Allen, J. M. Ingersoll and A. I. Ludlow, Cleveland, Ohio.
55 Appendicitis; Earliest and Complete Removal of the Appendix. J. W. Kennedy, Philadelphia.
56 *Anatomic, Experimental and Clinical Study of Acute Phlegmons of the Hand. A. B. Kanavel, Chicago.
57 Diagnosis and Treatment of Rupture of the Uterus G. Schmauch, Chicago.
58 *Intussusception. M. H. Richardson and F. W. Palfrey, Boston, Mass.
59 Management of Uterine Fibroids. B. B. Davis, Omaha, Neb.

53. **Conservation of Ovaries and Uterus.**—Tuffier pleads for the saving of the ovaries in certain adnexal diseases. His conclusions are based on 28 cases in which he has practiced conservatism. He is satisfied that the diagnosis of sclerocystic ovaries has concealed diagnostic mistakes, and has justified many useless operations. He believes that this condition is more often dependent on disturbances of ovarian vascularization than on infection, hence he removes these ovaries only in exceptional instances. His technic is as follows: The tube is attacked from the uterus toward the fimbriæ. Forceps are placed on the uterine end of the tube and another forceps without that. He incises between the two, and isolates the uterine angle with its forceps by the aid of a compress. The broad ligament is incised immediately below the body of the tube, thereby removing the tube up to its fimbriæ, carefully isolating the ovary from its salpingo-peritoneal adhesions. Hemostasis must be perfect. The uterine angles and the intrauterine in course of both tubes are destroyed with the thermocautery. The angles are then closed with deep catgut sutures, overlapped with Lembert sutures, thus isolating the uterine mucosa and preventing infection of the neighboring tissues. One extremity of the tubo-ovarian ligament is fixed to the round ligament. The abdominal wall is closed in two layers of the catgut, and the skin is united with hooks. Tuffier has operated according to this method twenty-eight times. The tubal lesions noted at the time of operation were: Salpingitis, with the exception of one case, was always bilateral. Twenty of the cases were suppurative salpingitis, four hematosalpinx, eight cystic, ten interstitial and two tuberculous. The ovaries were apparently sound in 19 cases, somewhat sclerocystic in nine cases. The uterus presented the following appearances: Retroflexed, five times; in normal position, but slightly anteflexed, twenty-three times. In all cases it was infected. If a fungus metritis be present, Tuffier advises curetting the uterus before opening the abdominal cavity. The operative mortality was 3.5 per cent.—one death in 28 cases. This patient died of a late septicemia, due to an effusion of blood in Douglas' cul-de-sac, which suppurated, and was followed by peritonitis. The two postoperative accidents observed had the same origin and the same termination. On the fourth and fifth days the patients had a slight elevation of temperature, some pain, some nausea, some vomiting. Vaginal touch showed that there was an induration of the posterior cul-de-sac. In both cases the posterior cul-de-sac was incised, relief was immediate and cure was complete. Of twenty-eight patients, fifteen have been traced. One suffered some pain despite her regular menses, but she had a tuberculous salpingitis, diagnosed by inspection and by the microscope. Tuffier performed an abdominal panhysterectomy, and found the uterus in place and the left ovary bound to it by a distinct liga-

ment. The right ovary had been removed, the orifices of the tubes were closed and covered with peritoneum, but the whole surface presented tuberculous granulations. One patient had fungus metritis, and had to be curetted. She is now in perfect health. With the exception of these two, all the patients have been remarkably benfited by the intervention.

56. **Study of Acute Phlegmons of the Hand.**—Kanavel presents the results of a most detailed study of fascial space inspection of the hand undertaken for the purpose of demonstrating a means of shortening the course of treatment of pus infections of the hand and producing more fortunate results. Since making these investigations, clinical experience has shown that the course of many cases may be shortened, and that better results may be obtained by taking into consideration the facts demonstrated. The length and thoroughness of the paper prohibits the making of a short abstract, but as a result of this investigation the following facts may be stated: There are five great spaces, with their tributaries, in which pus can accumulate. First, the dorsal subcutaneous, which is an extensive area of loose tissue, without definite boundaries, allowing pus to spread over the entire dorsum of the hand. Second, the dorsal subaponeurotic space, limited on its subcutaneous side by the dense tendinous aponeurosis of the extensor tendons, on the deep side by the metacarpal bones, having the shape of a truncated cone, with the smaller end at the wrist and the broader at the knuckle. Laterally the aponeurotic sheet shades off into the subcutaneous tissue. Third, the hypothenar area, a distinctly localized space. Fourth, the thenar space, occupying, approximately, the area of the thenar eminence, to the flexion adduction crease of the thumb, not going to the ulnar side of the middle metacarpal. It should be remembered that this space lies deep in the palm, just above the adductor transversus. Fifth, the middle palmar space, with its three diverticula below along the lumbrical muscles, limited by the middle metacarpal bone on the radial side, overlapped by the ulnar bursa on the ulnar side, and separated from the thenar space by a partition which is very firm everywhere except at the proximal end, where it is rather thin. A small isthmus can be found leading from the proximal end of the space under the tendons and ulnar bursa at the wrist up into the forearm. Kanavel summarizes his paper as follows: 1. There are certain well-defined, uniform spaces on the fingers, palm, and dorsum of the hand in which pus can accumulate. 2. There are definite anatomic channels by which infection arising in a given spot will extend to certain of these spaces, while certain other spaces will remain uninvolved; hence the diagnosis of the position of the pus is simplified and the proper site for the incision determined. 3. There are definite anatomic channels by which pus can be spread from the uniform spaces mentioned, and when this occurs the position of the pus can be prognosticated. 4. The boundaries of the fascial spaces having been determined, it is readily seen that in some of these the incision for evacuation must be made at definite spots, otherwise important structures may be injured, or by ill-advised incisions adjacent spaces may be opened at the same time, and a spread of the infection favored to parts of the hand that would not become involved without this unfortunate surgical procedure. 5. It can be readily understood why, in certain cases, the infection has persisted for weeks and months after apparently opening the pus pocket, since diverticula and intermediary chambers have not been taken into consideration.

58. See abstract in The Journal. July 29, 1905, page 350.

Journal of Nervous and Mental Diseases, New York.

September.

60 *Acute Anterior Poliomyelitis in a Youth. T. A. Hoch, Worcester, Mass.
61 Epileptiform Attacks During the Course of Dementia Præcox. P. Masoin, Belgium
62 *Fracture of the First. Second and Third Dorsal Vertebræ; Seven Other Fractures; Laminectomy. G. Hinsdale, Hot Springs, Va.
63 Small Round Cell Sarcoma of the Spinal Column. M. A. Bliss, St. Louis.
64 Family Atrophy of the Peroneal Type. G. L. Walton, Boston.

60. **Acute Anterior Poliomyelitis in a Youth.**—Hoch cites the case of a strong and apparently healthy boy, who after a few days of general indisposition suddenly developed a flaccid paralysis beginning in the leg and within twenty-four hours spreading to the arms. These phenomena were accompanied by a rise in temperature. After a brief acute stage, gradual but slight improvement took place. After thirteen weeks death ensued from pneumonia. The onset of the disease was sudden and there was no history of preceding infectious disease or of exposure.

62. **Paraplegia from Fracture of Upper Three Dorsal Vertebrae.**—Hinsdale's patient sustained ten fractures, including the first, second, and third dorsal vertebræ, the sternum, right clavicle, right radius, left elbow-joint; a compound fracture of the right ankle joint; fracture of the left fibula; dislocation of the left radius at the wrist; fracture of the nose and a lacerated wound of the right brow. During the operation of laminectomy on the second and third, and a part of the fourth dorsal vertebræ, it was found that the arches of these vertebræ were impacted as well as fractured. The fragments were lifted out without much use of the bone forceps, except for trimming. It is now four years since the operation and the patient's condition is a very satisfactory one. She can take long drives and does not show fatigue or any tendency to weakening of the spinal column. She is able to walk with assistance.

Interstate Medical Journal, St. Louis.

September.

65 *Operation in Hypertrophied Prostate. H. G. Mudd, St. Louis.
66 Study of Thirty Cases of Chronic Non-Tuberculous Joint Disease Occurring in Adults, with Special Reference to Some Cases of Doubtful Identity. H. W. Jones, St. Louis.
67 *Considerations on the Treatment of Diabetes Mellitus. R. W. Webster, Chicago.
68 *Congenital Enterocyst. P. Y. Tupper, St. Louis.

65. **Operation in Hypertrophied Prostate.**—Mudd discusses the time for operative interference and the choice of methods.

67. **Treatment of Diabetes Mellitus.**—Webster calls attention to the dangers and fallacies of an exclusive proteid diet, as well as those of a diet containing a minimum of carbohydrate and an excess of fat. A proper balance of these constituents is as vital to a diabetic as to a normal being, and must be as accurately and as scientifically calculated as possible, if good results are to follow. The dangers of increased glycosuria and acidosis can best be fought by a properly regulated diet; hence every effort should be made to find out just what diet is best suited to the case under treatment. Webster believes that the old diet tables, which did good service in the past, succeeded not because of, but in spite of their characteristics. To cut off carbohydrates to the point of exclusion may be homicidal in some cases, while in others it may be a necessity. The treatment is long and tedious, and if scientifically carried out will yield satisfactory results. It is necessary, however, that the physician should possess a thorough knowledge of the composition of foods, of their absorption, metabolism and excretion. Regarding the signs of approach of coma, Webster advises a very careful examination of the urine for increased ammonia and an administration of $NaHCO_3$ whenever the relation of ammonia nitrogen to total nitrogen equals 10 per cent. or over. Such an excretion means an almost certain danger of coma and should be carefully watched.

68. **Congenital Enterocyst.**—Tupper reports a case of this kind occurring in a girl, aged 13. At birth the child seemed strong and natural in every way, except for the existence of a large sac containing fluid that occupied and protruded from the region of the inferior pelvic outlet. This mass was about four or five inches in its greatest transverse diameter and about 7 or 8 inches in its vertical diameter. On manipulation and pressure the fluid could not be displaced to any extent from the sac, nor were any symptoms referable to the central nervous system produced by such pressure. The sac protruded posterior to the rectum and forced this organ and the urogenital tract firmly forward under the pubic arch. When the child was 3 days old the cyst was tapped. It was tapped a second time during the first year of her life. After this there was no great reaccumulation of fluid, the cavity continuing to discharge passively for a time through the trocar opening. At 11 years of age the growth showed irritation from pressure and interfered with the sitting posture, unless the child sat

perfectly upright. The mass was removed by making anterior and posterior flaps extending transversely across its base. At the site of section the original cavity of the cyst had been completely obliterated. The tumor did not form again.

Medical Fortnightly, St. Louis.

September 11.

69 *Practical Suggestion Respecting the Removal of Foreign Bodies from the Larynx. Illustrated by a Case of Cockle-Burr on the Vocal Cords. R. Barclay, St. Louis.
70 Points from General Practice. M. E. Fitch, Philadelphia.
71 Radio-Rectal Dilators—Radio-Urethral Sounds. H. Robarts, St. Louis.
72 Relation of Man to Nature. (Continued.) A. S. Ashmead, New York.
73 *Hemorrhagic Diathesis. C. P. Frantz, Burlington, Iowa.

69. **Removal of Foreign Bodies from Larynx.**—Barclay calls attention to the immediate difficulty with which one may have to contend in attempting forcibly to remove a foreign body, especially a cockleburr, from the larynx, that of the intense reflex laryngeal spasm which may be excited thereby against the sharp spines of the cockleburr. In attempting the removal of such a foreign body, Barclay invokes the aid of an antagonistic reflex—a reflex not only antagonistic to, but far more imperious than that of the dreaded laryngeal spasmodic reflex—namely, that of the demand of the body for oxygen after forced, prolonged expiration. The tissues of the larynx are anesthetized with a cocain solution. The patient is instructed to attempt to phonate the vowel "a," the laryngeal mirror and the Fauvel forceps having been introduced previously. The cockleburr is seized firmly just as the patient phonates, and is held immovably until the patient grows desperate for air, when she is ordered to breathe. The larynx relaxes into the position of forced inspiration, and as it does so a slight wigwag motion of the forceps will instantly bring away the cockleburr without the loss of a single one of its spines and without wounding the laryngeal tissues.

73. **Hemorrhagic Diathesis.**—Frantz reports two cases of hemophilia, one acquired and the other hereditary, which illustrate the futility of all known methods for checking hemorrhage in a bleeder after tonsillectomy.

Quarterly Journal of Inebriety, Hartford, Conn.

July.

74 Forms of Insanity Due to Alcohol, Especially in Their Medicolegal Relations. C. K. Mills, Philadelphia.
75 Present Position of the Medical Profession in Relation to Alcohol. T. B. Bart, London.
76 Inebriety and Some of the Medical Problems of Alcohol. G. H. Benton, Gowanda, N. Y.
77 Morbid Phases of Inebriety. T. H. Evans, Philadelphia.
78 New Phase of Alcoholic Unconsciousness. T. D. Crothers, Hartford.
79 Wine and the Poets—Critical Study of the Poet's Devotion to the God of Wine. J. Madden, Milwaukee, Wis.

Journal Kansas Medical Society, Lawrence.

August.

80 Railway Injury. L. H. Munn, Topeka.
81 Traumatic Neuroses. W. S. Lindsay, Topeka.
82 Borderland of Neuropsychoses. C. C. Goddard, Leavenworth.
83 Hyperacute Mania. T. C. Biddle, Topeka.
84 Exophthalmic Goiter. S. S. Glasscock, Kansas City, Kan.
85 Psychics in the Practice of Medicine. P. S. Mitchell, Iola.
86 Skin Therapeutics. H. Wilkinson, Kansas City, Kan.

Detroit Medical Journal.

August.

87 Alfred Bernard Nobel. F. S. Sherrill, Detroit.
88 Emil Adolph Behring. G. L. Kiefer, Detroit.
89 Etiology of Diabetes. S. C. Dickerson, New Bedford, Mass.
90 Case of Diabetes Insipidus. M. A. Fechheimer, Detroit.

Alienist and Neurologist, St. Louis.

August.

91 Outlines of Psychiatry in Clinical Lectures. C. Wernicke, Breslau.
92 The Feeble-Minded Child. Physical and Physiologic Problems. M. W. Barr, Elwyn, Pa.
93 Dyspepsia Considered as a Brain Disease. C. H. Hughes, St. Louis.
94 Early American Description of Astasia Abasia. C. F. Taylor, New York.
95 Mixoscopic Adolescent Survivals in Art, Literature and Pseudo-Ethics. J. G. Kiernan, Chicaga.

Archives of Physiological Therapy, Boston.

August.

96 Electro-Therapeutics in Chronic Maladies. J. H. Kellogg, Battle Creek, Mich.
97 High Frequency Current and the X-Ray in Pulmonary Tuberculosis. O. S. Barnum, Los Angeles, Cal.
98 Deaf Mutism, Treatment by Galvanocautery with Resulting Cure. F. P. Hoover, Jacksonville, Fla.
99 Mechanical Vibration and Digestion. H. W. Barnum, Poughkeepsie, N. Y.

Annals of Gynecology and Pediatry, Boston.

July.

100 Insanity Precipitated by Pelvic Disease in the Female. R. R. Huggins, Pittsburg, Pa.
101 Total Absence of the Vagina, and Its Surgical Treatment. Dr. Vautrin, Nancy, France.
102 Suppression of Urine After Diphtheria. F. A. Hubbard, Taunton, Mass.

Journal of Nervous and Mental Diseases, New York.

August.

103 Brain Tumors; Study of Clinical and Postmortem Records Bearing on Their Operability and Symptomatology. G. L. Walton and W. E. Paul, Boston.
104 Experimental Study on the Regeneration of Peripheral Nerves. S. D. Ludlum, Philadelphia.
105 Importance in Clinical Diagnosis of Paralysis of Associated Movements of the Eyeballs (Blicklaehmung), Especially of Upward and Downward Associated Movements. W. G. Spiller, Philadelphia.

Journal Medical Society of New Jersey, Newark.

August.

106 Surgical Treatment of Chronic Bright's Disease. A. Marcy, Jr., Newark.
107 The Trained Nurse and the Doctor. E. J. Ill, Newark.
108 Modern Neurology. R. C. Newton, Montclair.
109 Surgical Diagnosis. F. D. Gray, Jersey City.
110 Physical Education Versus Physiology. G. O. Brewster, Grantwood.
111 How to Modify and Abort Measles. E. B Silvers, Rahway.

New York State Journal of Medicine.

August.

112 Therapeutic Value of Antitoxic Sera. H. T. Marshall, Baltimore, Md.
113 Reasons Why We Should Dispense. G. A. Chapman, Glens Falls.
114 General Tuberculosis Problems. G. W. Goler, Rochester.
115 Feeding in Acute Diseases. A. H. Baker, Elmira.
116 Pelvic Infection, Including Pyosalpinx and Pelvic Abscess. J. F. Myers, Sodus.
117 Etiology and Pathology of Arteriosclerosis. G. S. Towne, Saratoga Springs.
118 Conservative Surgery of the Abdomen. D. C. Moriarta, Saratoga Springs.
119 Fads in Surgery. H. Lilienthal, New York.
120 Accidents of Anesthesia. S. O. Goldan, New York.
121 Satisfactory Anesthesia of Short Duration. P. Le Breton, Buffalo.
122 Respiratory Prophylaxis. P. F. Sondern, Rochester.
123 Official Surgery—Its Absurdities, Philosophy and Merits. H. E. Hayd, Buffalo.
124 Hydatid Cyst. J. E. Welch, New York.

Oklahoma Medical News-Journal.

August.

125 Quacks and Quackery. J. O. Davis, Oklahoma City

Canada Lancet, Toronto.

August.

126 Simple Ulceration of the Stomach and Duodenum. F. M. Marlow, Toronto.
127 Bronchopneumonia—Contrast Between Urban and Rural Results. J. Biggard, Tillsonburg.
128 Surgical Treatment of Chronic Nephritis. H. Howitt, Guelph.
129 Methods of Studying Affections of Heart. A. J. Mackenzie, Toronto.
130 The Nurse: Her Place and Equipment. J. Hunter, Toronto.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 2.

1 *Educational Number.

The Lancet, London.

September 2.

2 *Students' Number.

1 and 2. **Educational Numbers.**—These issues of the *British Medical Journal* and the *Lancet* contain information for the prospective medical student and the recent graduate. They discuss the financial outlook of the profession of medicine; the profession from the intellectual, ethical and social standpoint; the choice of a medical school; the cost of a medical education; suggestions for the benefit of the medical student as to the books he is likely to find most useful in the course of preparation for his examinations; the course of professional training through which the medical student must pass; the regulations of the general medical college and the medical examining bodies in the United Kingdom; the facilities of the various medical colleges, universities, and hospitals, and such other information as is likely to prove of interest. A statistical study, such as is given annually by The Journal A. M. A., is not undertaken.

The Practitioner, London.

September.

3 *Enlarged Prostate, Its Nature, Smptoms and Treatment. C. Wallace.
4 Incision of the Tympanic Membrane. J. G. Connal.
5 Hydrocephalus and Posterior Basic Meningitis. (Concluded.) O. Hildesheim.
6 *Ano-Rectal Ulceration. F. C. Wallis.
7 *Remarkable Collection of Foreign Bodies Removed from the Stomach. H. H. R. McLeod.
8 Treatment of Venereal Diseases in the Services. P. N. Randall.
9 Value of Pain in Gynecologic Practice. C. Lockyer.
10 Needle in Hand. S. Hastings.
11 *Cultivation of the Parasites of Smallpox and Vaccinia in Vitro. W. E. DeKorte.

3. **Enlarged Prostate.**—Wallace presents a very detailed study of prostatic enlargement, discussing, in turn, the comparative anatomy of the gland, its development and growth in man, functions, external characteristics, structure, the nature of enlargements and their clinical history and treatment. Prostatectomy is the operation favored by Wallace.

6. **Ano-rectal Ulceration.**—This is the term applied by Wallis to a condition constantly found in the lining membrane of that part of the bowel which lies between the anus and the internal sphincter. This condition Wallis believes to be the initial cause of many of the ordinary rectal ailments, of genuine pruritus ani, fissure in ano, fistula, and also many of those distressing cases of infected ulceration of the rectum, commonly ascribed to syphilis. The lining membrane of the proctodeum is neither skin nor mucous membrane; hence any lesion occurring in this area has a small chance of recovery, (1) because of the scanty blood supply, (2) because of the constantly altering dimensions, and (3) because of the contents of the intestine which are constantly passing over it. Although these abrasions not infrequently occur at two or three different places, the commonest situation is just to one side or the other of the dorsal mid-line. They become covered with granulation tissue, and are practically chronic ulcers which exude in irritating secretion causing pruritus ani. The abscesses discussed by Wallis are the subcutaneous, submucous, ischiorectal, and pelvirectal. He advises opening the ischiorectal abscess outside the sphincter, making one common cavity of existing pockets, draining by a tube through a free skin incision, but not dividing the external sphincter. When the abscess is of the submucous variety, he dilates the opening, passes a hooked director through it and incises the skin over this, dividing everything lying above the director. Thus the external sphincter is divided and the abscess cavity can be thoroughly explored and treated, without materially damaging the mucous membrane. The same method should be adopted in the treatment of pelvirectal abscesses, care being taken not to interfere with the internal sphincter, the levator ani muscles or the mucous membrane. Infective proctitis is treated as follows: The bowels are thoroughly emptied, and at the same time some form of intestinal antiseptic is given by the mouth. The rectum is washed out daily with some antiseptic solution for a week or more, the patient being kept in bed. As soon as the patient's condition permits, the affected bowel is completely excised, and the healthy gut brought down and stitched to the anal margin.

7. **Foreign Bodies in Stomach.**—Following the amputation of a thumb, the patient in question, a woman, aged 30, became very much depressed in spirits, but did her housework as usual. Finally, she began to complain of pain above and to the left of the umbilicus, where a very tender, rounded swelling was evident. The tumor became more pronounced day by day and there was some fever. Alarmed at the suggestion of an operation, the patient confessed that for three weeks she had been swallowing various articles with suicidal intent. A small abscess had developed in the left rectus sheath, and on opening the abscess it was found to communicate directly with the stomach. This opening was enlarged, and by means of a blunt-dressing forceps MacLeod removed a large number of hairpins, sewing and darning needles, safety pins, horse-shoe nails, and ordinary nails, tacks, screws, pins, coins, fragments of glass, chalk, etc. The patient died of exhaustion six days after the operation.

11. **Cultivation of Smallpox and the Vaccinia Parasites In Vitro.**—DeKorté found that the parasites of smallpox and vaccinia will grow and multiply in pure culture in the vitreous humor of the rabbit's eye which is obtained in a sterile condition by withdrawing it from the eye of a freshly killed rabbit with a sterile hypodermic syringe. Care should be exercised in the operation to procure the medium in a clear condition. It is also advisable to collect it in a vessel in which it can be centrifugalized, the object being to free it from any cellular element which might obscure the issue. The clear supernatant fluid is pipetted off and distributed in small tubes, capped with rubber sheeting to prevent subsequent evaporation. This sterile medium is inoculated with a fair quantity of the infected material which has previously been ascertained by subculture in gelatin and broth to be free from contaminating organisms.

Journal Royal Army Medical Corps, London.

September.

12 *Report of Commission Appointed by the Admiralty, the War Office and the Civil Government of Malta, for the Investigation of Mediterranean Fever Under the Supervision of an Advisory Committee of the Royal Society. (Continued.) W. H. Horrocks.
13 Preliminary Note on the Susceptibility of Goats to Malta Fever. T. Zammit.
14 *Preliminary Note on Goats as a Means of Propagation of Mediterranean Fever. W. H. Horrocks.
15 Prevalence of Enteric Fever in Pietermaritzburg. R. J. S. Simpson.
16 Gunshot Injuries of the Spine. S. F. Lougheed.
17 Case of Kala Azar. J. C. B. Statham.
18 Some of the Blood-Sucking Insects of the Mediterranean Littoral. H. Ross and G. M. Levick.
19 *Value of Couper as a Means of Purifying Drinking Water. C. E. P. Fowler.
20 Additional Plea for the Recruit. E. Fairland.

12. **Mediterranean Fever.**—Horrocks adduces experimental evidence to show that the *Micrococcus melitensis* when present in dry dust is capable of being absorbed by monkeys. The path of absorption may be through the nares, throat, respiratory passages, and alimentary canal. When present in food it is also taken into the system of monkeys; here, again, the path of absorption may be through the throat as well as through the mucous membrane of the alimentary canal. When transmitted through an unbroken mucous membrane the process of absorption is comparatively slow, and under these conditions the wave of fever appears to be prolonged. The long and variable incubation period observed in monkeys infected through an unbroken mucous membrane is frequently observed in man infected under natural conditions. When the *Micrococcus melitensis* is absorbed through a crack in a mucous membrane or in the skin, or is injected subcutaneously, the absorption is rapid, and the incubation period in monkeys varies from five to seven days. The curve of fever is characterized by a rapid rise usually followed by a rapid fall. These acute infections have also been observed in man infected under the same conditions, but the period of incubation appears to be longer in man than in the monkey. Healthy monkeys may become infected by urine secreted by monkeys suffering from Mediterranean fever, just as in the case of man; the *M. melitensis* is excreted in the urine of infected monkeys. And it seems probable that healthy monkeys walking in the infected secretion convey that specific microbe into the mouth by means of the paws. Infection by means of urine excreted by patients with Mediterranean fever readily explains the cases of Mediterranean fever which appear to rise spontaneously in hospitals. In the absence of specific knowledge as to the mode of excretion of the *M. melitensis* from the human body, sufficient care has not been taken hitherto to sterilize bedpans, urine bottles and sheets soiled by these patients. There is no evidence that Mediterranean fever can be contracted by contact with cutaneous surfaces uncontaminated by urine.

14. **Goats and Mediterranean Fever.**—Horrock's investigations on goats as a means of propagation of Mediterranean fever show that some of the goats in every herd examined were suffering from that disease. The *M. melitensis* is exuded in the milk in enormous numbers when the disease has been present sufficiently long to cause a change in the physical character of the fluid. It is also excreted in considerable numbers even when the animals are in "full milk," and no changes have occurred in either the physical or chemical characters of the milk. The *M. melitensis* is also excreted in the urine of

goats suffering from Mediterranean fever, but up to the present it has only been found when the disease has existed for some time and physical changes have occurred in the milk.

19. **Value of Copper for Purifying Drinking Water.**—According to Fowler, a contaminated water standing for twenty hours in a copper vessel, even though containing a large quantity of copper foil, is not rendered safe for consumption. The time limit of twenty hours is the very extreme one for such a process to be of any practical value, as the water treated one day should be available for use early the next morning. Copper sulphate will act as a fairly efficient germicide of intestinal organisms in twenty-four hours up to 1 part per 60,000 parts with a clear water; up to 1 part per 30,000 parts with a somewhat turbid water, and up to 1 part per 10,000 parts with a foul water. Copper sulphate at 1 part per 10,000 can not be tasted, but it gives a bluish opalescence to the water; at 1 part per 30,000 there is a faint turbidity and a slight trace of blue coloration; at 1 part per 60,000 there is a very slight turbidity, but no blue color. Copper sulphate at 1 part per 60,000 parts of water is just over 1 grain per gallon, and it is a question whether the consumption of such an amount might not have some harmful effect on the consumer. If a man drinks 2 pints a day, he would seem to be taking one-fourth of a grain of the copper sulphate daily. The dose as an astringent is from one-half to 2 grains (B. P.)

Presse Médicale, Paris.

20 (No. 64.) La cellule interstitielle du testicule. A. Branca.
21 (No. 65.) *Valeur diagnostique, pronostique et thérapeutique de la ponction lombaire chez le nouveau-né. L. Devraigne.
22 *Distension cardiaque et angine de poitrine. J. P. Tessier.
23 (No. 66.) *Les injections d'eau de mer en thérapeutique infantile (sea water). L. G. Simon and Pater.
24 *Anévrisme artério-veineux du triangle de Scarpa. L. Latour.
25 (No. 67.) *How to Install an Infant Consultation.—Comment installer une consultation de nourrissons. V. Bué.
26 L'acidité des urines à l'état physiologique. H. Labbé.
27 (No. 68.) *Le laboratoire le plus haut situé d'Europe (on the summit of Mont Blanc). R. Bayeux.
28 Les infections paratyphoides dans l'ouest de la France. E. Sacquépée and F. Chevrel.
29 La vibration du coeur (of heart). C. Vermeulen.
30 (No. 69.) Gymnastique de la respiration et du maintien. P. Desfosses and G. Santos.
31 *Treatment of Infants of Tardy Growth.—Traitement des nourrissons en état de croissance retardée. E. Terrien.
32 (No. 70.) Le dispensaire antituberculeux de la Ville de Paris. M. Letulle.
33 *Le régime alimentaire des épileptiques. J. Voisin and R. Voisin.
34 (No. 71.) *La vaccination anticholérique et antipesteuse de W. M. Haffkine.

21. **Lumbar Puncture in the Newly Born.**—Devraigne relates that he has been long impressed with the constancy of meningeal hemorrhage in cases of cyanosis, convulsions, coma, stiffness of the neck, temperature and contractions occurring in a new-born, apparently asphyxiated infant. Lumbar puncture in such cases reveals the hemorrhage and the hopelessness of attempts to revive the child in the severer cases. Experience has demonstrated that lumbar puncture has been able to effect a cure in certain cases of meningeal hemorrhage in the adult, and he became convinced that it might be applicable likewise for the same condition in the newly born. In May, 1904, a child, after forceps delivery, presented the classical syndrome of meningeal hemorrhage, and about 3 c.c. of bloody fluid was withdrawn by lumbar puncture. The child improved almost at once, and a second puncture two days later showed merely a pinkish fluid. The improvement continued, and a third puncture was made the seventh day after birth, and the fluid was scarcely tinted. The child was cured. Several other infants have been treated in the same way with equally favorable results. In another case the fluid was almost entirely blood, and the unfavorable prognosis was confirmed by the death of the child the next day, when, as surmised, a very large hemorrhage was found. The puncture is made in the same way as in adults, but the needle should carry a wire, as it is liable to become obstructed. The needle should not be inserted for more than from 10 to 15 mm., and Bonnaire says not more than from 10 to 12 mm. The amount withdrawn should not be over 10 c.c., and he never took more than from 3 to 6 c.c. The withdrawal of the fluid reduces the pressure on the nerve centers, the diffused blood possibly acting, besides, as a toxin in the submeningeal space.

22. **Distension of the Heart and Angina Pectoris.**—Tessier thinks that mere distension of the heart may sometimes be the cause of an attack of angina pectoris. He draws a sharp distinction between distension and dilatation and outlines the treatment indicated by the former condition. The heart should be spared all but the minimum of work, and it should be stimulated. The main causes of distension of the heart are sudden aortic insufficiency and overexertion.

23. **Injections of Sea Water.**—Simon and Trousseau have given a fair trial to the therapeutic application of injections of sea water which some observers have recently lauded. In five children with tuberculosis, the injections not only failed to display any beneficial action, but rather seemed to aggravate the course of the disease. In another group of non-tuberculous children, no benefit was apparent. There was generally a temperature reaction.

24. **Recovery After Removal of Large Aneurism in the Thigh.**—The sac was not entirely removed, but all the veins and arteries were ligated, not omitting a single collateral. The aneurism had developed in consequence of a bullet wound, and the patient recovered without gangrene or disturbances of any kind. Latour gave him a certificate which released him from military service, as he feared that a long march might bring on trouble again.

25. **Infant Consultations.**—Bué describes how to install a special service for healthy infants. All the mothers delivered in his maternity are urged to bring their babes back for consultation once a week at a certain hour. Records are kept of each child's weight and general condition from week to week, and if there is any interruption in normal growth the causes are sought and remedied. The education of the mothers in hygiene and in the care of their children has been of incalculable value, and the pride of the mothers as they present their healthy little ones and compare them with others has been an important factor in the fine results attained. These "consultations" are now installed in a number of French, German and Spanish cities since Budin first originated them in 1892. The advantage to young physicians to study the normal child's development is not one of the least of the benefits of the plan. Most of the "consultations" now have a milk delivery station attached, and to this feature the "consultations" owe their popular name of the *Goutte de Lait* (Drop of Milk). Only three things are necessary to install one of these, namely, scales to weigh the infants, an apparatus for sterilizing the milk, and the devoted services of some physician. The community generally donates the room or three rooms required and the expense of installment, but if sufficient funds are not realized in this way private benevolence must be solicited. The daily press will usually respond to an appeal for this philanthropic purpose. The waiting room requires merely benches, the weighing room has a table with the scales and another table for the assistants to write on, and the third room is the milk sterilizing and supply department. A record of each child is kept in a large ledger, with the details of its weight, health, etc., at each visit, and a card is given each mother each week on which is recorded the weight of the child, and whether nursing or bottle fed, and the amount of milk it is taking, this card to be presented with the child at each consultation. In the industrial centers the consultations are held on Sundays. The mothers are warned not to bring the children to these consultations if they seem sick, and each child as it arrives is hastily examined and turned away if not apparently healthy. After all the children have been weighed and registered, in turn, in the presence of the mother, the physician makes a short address to the assembled mothers, using one of the infants for a demonstration. In one town in France the mortality has fallen from 17.5 to 2.28 per cent. among the infants brought to these consultations.

27. **The Laboratory on the Summit of Mont Blanc.**—In 1893 Janssen witnessed the completion of the laboratory built on the ice at the top of Mont Blanc and was able to confirm his previous assumption that the oxygen lines in the spectrum are of telluric origin and that there is no oxygen in the sun's

actual spectrum. Switzerland now has three such laboratories, the one on Mont Rosa, where Mosso works, and Vallot's observatory, lower down on Mont Blanc. Valuable contributions to our knowledge of physiology may be expected from these elevated laboratories, but, as Bayeux remarks, a robust physique, besides scientific ardor, is required for physiologic research at these altitudes. Many are called, but few are chosen.

31. **Treatment of Infants of Tardy Growth.**—Terrien discusses the indications for buttermilk, malt soup, and Mery's vegetable soup for the feeding of children who are not developing normally, or who have just passed through an acute gastrointestinal affection. The buttermilk is slowly heated to the boiling point after addition of a tablespoonful of rice, arrowroot or oatmeal, and allowed to boil up three times, constantly stirring, then set aside to cool. The buttermilk contains large proportions of lactic acid, sugar and starch, with very little fat.

33. **Diet in Epilepsy.**—Good general hygiene and avoidance of digestive disturbances are sufficient, without any special dieting, in epilepsy, according to Voisin.

34. **Haffkine's Anticholera and Antiplague Vaccination.**—Lew concludes from the history of Haffkine's work in India that his method of vaccination renders contagion of plague three times less probable than without it, and a fatal termination two times less probable, that is, it reduces the chances of death to one-sixth of the non-vaccinated subjects. His anticholera vaccination has now established itself on such a footing that its results are no longer published any more than those of vaccination against smallpox.

Berliner klinische Wochenschrift.

35 (XLII, No. 31, July 21.) *Die bakteriologische und die klinische Diagnose bei den fibrinösen Entzündungen der oberen Luftwege. Gerber.
36 Route of Tubercle Bacilli from Mouth to Lungs.—Ueber den Weg der Tuberkelbacillen von der Mund und Rachenhöhle zu den Lungen. H. Beitzke.
37 Experimentelle Beiträge zur Lichtbehandlung (sensitizing, etc. in phototherapy). F. Schulz.
38 (No. 32.) Ein Fall von Meningokokken-Septikämie. Martini and Rohde.
39 Prospects of State Measures Against Trachoma.—Was haben wir von einer staatlichen Trachombekampfung zu erwarten? Greeff.
40 Fall von symmetrischen sarkomatösen (?) Tumoren der Schläfenregionen und der Wangen-Chlorom? (of temples and cheeks). A. Buschke.
41 *Zur Kenntnis der atypischen myeloiden Leukämie. H. Hirschfeld.
42 *Neue Reaktion zum Nachweis von Aceton samt Bermerkungen über Acetonurie. V. Frommer.
43 *Zur Pathogenese der Lungentuberkulose. F. Weleminsky (Commenced in No. 29).
44 Ueber den Prolaps der Vagina und des Uterus und seine Behandlung. E. Runge.

35. **Bacteriology of Fibrinous Inflammations of Air Passages.**—Gerber found diphtheria bacilli in more than three-fourths of his 40 cases of fibrinous rhinitis. There were no general symptoms or fever in about three-fourths of all the cases, including those with and those without diphtheria bacilli. The proportion was less in the fibrinous throat affections, not more than half of 127 patients with fibrinous pharyngitis presenting the diphtheria bacilli. He advises therapeutic injections whenever the general symptoms are severe, even when bacteriologic examinations are negative, but, on the other hand, does not advise them even when diphtheria bacilli are found if the clinical manifestations are insignificant.

41. **Atypical Myeloid Leukemia.**—Hirschfeld draws the composite picture of acute myeloid leukemia from 8 cases in the literature, and that of chronic atypical myeloid leukemia from 12 cases. He then reports a case of myeloid leukemia, personally observed, in which the blood findings were at first typical, but gradually became atypical, as he describes in detail.

42. **Test for Acetone.** Frommer alkalinizes the urine with potassium hydrate and then adds a few drops of a 10 per cent. alcoholic solution of salicyl aldehyd (1 salicyl + 10 alcohol absol.) and heats to 70 C. (158 F.) In the presence of acetone a purple ring forms at the junction of the two fluids.

43. **Pathogenesis of Tuberculosis.**—Weleminsky has been making an extensive study of the behavior of the regional lymph glands in respect to organs infected with tuberculosis. He has found that when the tubercle bacillus has been at work for a certain length of time in a region the lymph passages are no longer susceptible of being infected. Infection then spreads by way of the blood or by contiguity. Spontaneous infection of man is always lymphogenic. Putting these facts together has convinced him that man becomes infected with tuberculosis from without only once during his lifetime, the same as in syphilis and in other chronic infectious diseases. Almost every case of spontaneous tuberculosis in man and animals is a primary affection of the lymphatic system.

Deutsches Archiv f. klinische Medizin, Leipsic.

Last indexed page 79.

45 (LXXXIV, Nos. 1-4, Merkel Festschrift.) *Ein Fall von Darmkonkrementen (intestinal concrements). B. Naunyn.
46 *Ueber ein eigentümliches Auftreten tympanitischer Schallbezirke im Gebiet der Flüssigkeitsansammlung bei Sero- und Pyopneumothorax (resonant area in dullness). Bäumler.
47 Ueber Taenia cucumerina beim Menschen (in man). O v. Bollinger (Munich).
48 *Ueber die Heilung des tuberkulösen Pneumopyothorax. F. Penzoldt.
49 *Bemerkungen über die Behandlung der Epilepsie. A. Strümpell.
50 Ueber die epidemische Genickstarre. Ein Beitrag zur Bakteriologie und Behandlung (cerebrospinal meningitis). H. Lenhartz.
51 Fall von beiderseitiger abgeheilter Lungenspitzentuberkulose mit Bronchiektasien bei gleichzeitiger Tuberkulose des Kehlkopfes (cure of apical tuberculosis with laryngeal tu culosis, etc.) G. Hanser.
52 Der Unterleibstyphus in der bayerischen Armee von 1 -1904 (typhoid fever in Bavarian Army). v.Bestelmeye
53 Ein Beitrag zur Lehre der Therapie der durch Diphtherie bedingten strikturierenden Trachealnarben. Cnopf.
54 Zur Kasuistik des Naevus vasculosus verrucosus faciei (Darier). C. Kopp.
55 *Die Laparotomie bei Peritonealtuberkulose. Göschel.
56 *Ueber essentielle Albuminurie. R. Nenkirch.
57 Ueber Mitosen und atypische Regenerationen bei Nephritis. C. Thorel.
58 *Beitrag zur Behandlung der nicht karzinomatösen Pylorusstenose. F. Fraenkel.
59 *Schwere spondylitische Paraplegie, spontan geheilt unter Anwendung der Rauchfuss'schen Schwebe, die auch zur Prophylaxe des Dekubitus bei spondylitischen Lähmungen dient. Schilling.
60 *Fall diffuser symmetrischer Fettgewebswucherung (lipomatosis). H. Koch.
61 *Zur Kasuistik des Sanduhrmagens (hourglass stomach). F. Goldschmidt.
62 *Beitrag zur Behandlung der Pleuritis exsudativa im Verlaufe der Lungentuberkulose. H. Doerfler.
63 Erhebungen und Betrachtungen über 10 Jahre Sterblichkeit an Tuberkulose in Nürnberg. A. Frankenburger.
64 *Ueber die Anwendung des Olivenöls bei Erkrankungen des Magens und des Duodenums (olive oil in affections of stomach, etc.). F. Merkel.
65 Fall von Milzruptur infolge Abszessbildung bei Abdominaltyphus (rupture of typhoid spleen). R. Bandel.
66 Beiträge zur frage der Ammoniak-Ausscheidung (elimination). T. Schilling.
67 *Ueber die Genese der weiblichen Genitaltuberkulose. H. Merkel.

45. **Intestinal Concrements.**—Naunyn relates that a peasant of 40 suddenly exhibited symptoms of ileus, and after extensive irrigation of the bowels passed fifty cherry stones. Ten or eleven months had passed since he had eaten the cherries. Naunyn reviews the present status of our knowledge of intestinal concrements and then describes the case of a young physician who had used for ten years a mouth wash of tincture of myrrh and ratanhia to relieve a painful gingivitis. He used the wash several times a day, especially before meals. The particles of resin in the mouth wash collected in the digestive tract and caused symptoms suggesting recurring appendicitis or perityphlitis, when, in fact, the trouble was merely irritation of the mucosa from the rubbing of the conglomerations of resin. These accumulated at the sigmoid flexure and sometimes caused slight fever, but the symptoms were always comparatively mild. The disturbances were cured by dieting to insure soft stools with as little development of gas as possible. Every development of gas is liable to entail great disturbances. This explains the severe trouble after apparently insignificant errors in diet. The case was puzzling until the discovery of the lumps in the stools, and the chemical tests revealed the presence of resin, when the patient, on inquiry, told of his mouth wash.

46. **Resonance in Area of Dullness in Effusions in the Thorax.**—Bäumler calls attention to a peculiar tympanitic,

resonant area inside the limits of the dullness from accumulations of fluid or pus and air in the thorax. He has noticed it in several cases, and here describes in detail five of them. The underlying conditions were different in each, but all presented this resonant area in the midst of the area of dullness. In one it was due to a compressed strip of lung tissue adherent to the thoracic wall, in others to accumulations of air in masses of fibrin left from preceding inflammation. He gives illustrations of five cases, with postmortem findings in four. One patient recovered after treatment for pneumothorax, followed by large serous effusion. The area of resonance in this case was at the right, low down, near the spine, but it changed more to the front and became higher if the patient lay on his left side. The depth to which the exploratory needle is inserted should be measured in such a case. The relics left of the pneumothorax above probably caused the resonance which was transmitted through the fluid below.

48. **Cure of Tuberculous Pneumothorax.**—Penzoldt is able to report the cure of a patient with tuberculous pneumopyothorax with tuberculosis of the lung, with no recurrence during nearly five years since. Treatment consisted of the strictest rest and open-air reclining, with abundant nourishment. For eleven months this was enforced, the patient, a physician of 30, living in this way on a veranda and never leaving the floor during this period. He did not resume his work in the laboratory for two years and did not take up his full work until after three years. The fever gradually subsided during the first month, and in two months afterward a large effusion had collected in the place of the pneumothorax, containing pus cells, but not causing fever after the first month. The local treatment was by repeated punctures, followed by injections of iodoform. Notwithstanding the compression by air, and fluid for nine months at least, the lung did not seem to have lost its elasticity, but resumed its functions when the compression was removed. Tubercle bacilli were found alone in the puncture fluid. The first symptoms of a tuberculous affection had been noticed about a year before the pneumothorax developed. Nearly a year elapsed before the patient was allowed to go up or down stairs, and more than a year before he was allowed a short stroll in the garden. The rest and repose are considered by Penzoldt as perhaps the most essential factors in the treatment. In two apparently similar cases this treatment failed to arrest the progress of the tuberculous affection. If there is a possibility that the aggravation of the case is due merely to the pyothorax, then the Bulau, Pichler or Perthes' procedures might be tried. In case pus cocci are found in the effusion, and the trouble seems to be merely a pyothorax in a tuberculous person, if the general health allows and the lesion is unilateral, radical intervention is justified and may insure good results. If tuberculous patients were content to continue the open-air reclining and taking an abundance of nourishing food long enough, better results would certainly be chronicled in many cases. Above all things, they should not allow themselves to be deluded into relaxing their absolute rest mode of life when improvement begins to become manifest. Physical rest is imperative for months and years.

49. **Treatment of Epilepsy.**—Strümpell remarks that the majority of his epileptic patients have already been treated for years by other physicians before they come to him, and have taken quantities of the bromids without apparent benefit. His experience has convinced him that, as a rule, the symptomatic results of this drug have been overestimated, while its injurious by-effects have been underestimated. In a recent case he does not give the bromids nor in cases in which the intervals are two or three months or longer. When the attacks are very frequent he gives bromin, but very cautiously, watching for its general as well as for its symptomatic effect. The mental decline which some accept as the inevitable result of the epilepsy in certain cases, he thinks is much more liable to be due to chronic bromin intoxication. In place of bromin he gives belladonna and zinc oxid. They have sometimes succeeded after failure of bromin; especially in petit mal the latter has rendered him good service at times. An infusion of valerian, particularly before retiring, has also been found beneficial by some patients. In discussing the subject of exercise for epileptics, he states that one of his patients took a mountain pedestrian tour and afterward felt better than for years. He emphasizes the fact that the epilepsy is only a symptom, and that the general and psychic condition must be studied as much as this one symptom. He suggests that possibly the epileptic seizure may be a sudden discharge of all the accumulated tonicity ("spannkräfte") in the motor centers. This suggests further the possibility that it might be possible to prevent the seizures by calling on and fatiguing the motor centers until there is no possibility for their tonicity to accumulate. Treatment by muscular exercise certainly has some theoretic grounds, and he is now ordering therapeutic gymnastic exercises for some of his patients. If the cramps occur specially in a certain limb, he has the patient exercise the groups of muscles involved. He has no special successes to report from this exercise-therapy, and it should always be strictly individualized, absolute rest being indicated for some patients.

55. **Laparotomy in Tuberculous Peritonitis.**—Göschel's experience harmonizes with Wunderlich's in that about 23.3 per cent. of the cases of tuberculous peritonitis with exudation and in 9.8 per cent. of the cases with adhesions the patients can be permanently cured by operative intervention. The laparotomy does not cure the disease, but it creates much better conditions for the spontaneous healing of the lesions. Children recover spontaneously in about a third of the milder, uncomplicated cases. Between 1894 and 1904 Göschel operated on 19 patients with tuberculous peritonitis, the ages ranging from 16 to 56. In three patients the intestines were affected, and the lungs were tuberculous in all but seven. Three of the patients were completely cured, the interval of good health being from six to eleven years. A number of others were materially improved; the rest succumbed to the progress of the disease or its localizations elsewhere than in the peritoneum. The details of a number of the cases are given, with the admonition that laparotomy always helps, sometimes cures and never harms.

56. **Essential Albuminuria.**—Neukirch's daughter, when about 10, had an attack of diphtheria, and afterward for years passed alternately normal and albuminuric urine. The transition from normal to albuminuric urine was sudden and liable to occur at any time. The albuminuria finally vanished altogether in about five years, after a sojourn among the mountains, and there has been no sign of nephritis at any time. The patient has been in perfect health for eight years. By exclusions he has come to the conclusion that the albuminuria must have been the result of some disturbance in the innervation of the kidney.

58. **Gastroenterostomy in Treatment of Non-cancerous Stenosis of Pylorus.**—Fraenkel relates the details of 13 cases and the results of recent examination of the 9 cured patients. The outcome of the latter is extremely gratifying and should compel an earlier resort to intervention in such cases without postponing it so long that the patient succumbs to starvation or to the result of repeated hemorrhages as in the four fatalities in his experience.

59. **Cure of Spondylitic Paraplegia.**—Schilling comments on the fine results that can be attained in the treatment of spinal affections when the physiologist, the neurologist and the surgeon work together for this end. In a case described, the symptoms suggested spastic, atactic paraparesis at first, but a tuberculous apical affection and the prominence later of the fifth dorsal vertebra confirmed the diagnosis of spondylitic paraplegia. The patient was treated with the Rauchfuss method of suspension, with the result of a complete cure in two and a half years. He recommends this hammock-like appliance as desirable to prevent decubitus in the bedridden.

60. **Symmetric Proliferation of Fat Tissue.**—Koch attributes the symmetric lipomatosis in the case under observation to a fall from a scaffolding three years previously. The patient fell on his feet and the spine has been sensitive ever since. There was symmetric weakness in the arms and they grew very fat in parts, with great weakness. The weakness in the arms was not noticed until about a year after the accident, but then became so severe that the man was unable to

work. The proliferation of fat accompanying the motor weakness of the musculature is corroborative of the spinal origin of the trouble.

61. **Hourglass Stomach.**—The hourglass stomach in the case reported by Goldschmidt was evidently congenital, and had caused no symptoms until hemorrhage occurred in a small ulcer in the pylorus region. The blood filled the cardial part of the stomach which protruded in the right half of the hypochondrium, and was supposed at first to be the tumefied spleen. There was no vomiting and the stools were normal.

62. **Treatment of Pleuritis with Effusion in Course of Pulmonary Tuberculosis.**—Doerfler noticed long ago that progressing cases of pulmonary tuberculosis seemed to be favorably influenced by an intercurrent pleuritic effusion on the same side when the latter was removed by thoracentesis after it had lasted about a week. His experience since has effectually confirmed this observation, and he states that of 45 patients with pleuritis with effusion accompanying pulmonary tuberculosis, treated by thoracentesis, only 5 failed to derive great benefit from it. He explains this benefit as due to the hyperemia which follows the removal of the effusion. The action of the intervention is similar to that of a laparotomy in tuberculous peritonitis. Doerfler waits a week to allow the lung to be well compressed by the effusion, and then evacuates it as completely as possible. The beneficial effect observed has led him to ask whether it might not be possible to accomplish the desired end without waiting for intercurrent pleurisy to develop. He refers to Murphy's work in this line. As every case of pleuritis with effusion is suspicious of tuberculosis, the effusion should not be left for more than a week. He adds that it might be well to experiment on animals as to whether an artificial hydrothorax and its removal at the proper time might not help to cure a tuberculous process in the lungs.

64. **Olive Oil in Affections of Stomach and Duodenum.**—Merkel reviews his very favorable experience with olive oil in cases of stenosis of the pylorus with hyperacidity consecutive to an ulcer, also chronic ulcers with hyperacidity, and of hyperacidity with pyrosis, and cases of uncomplicated ulcer. The effect was magical in one case of ulcer, and the patients all gained in weight and strength.

67. **Genesis of Tuberculosis of Female Genitals.**—Merkel describes a case of tuberculous ulceration of the vagina in a woman who had pulmonary tuberculosis and had been in an asylum for five years on account of progressive paralysis. He is inclined to attribute the fresh tuberculous process in the vagina to infection from the woman's sputum-soiled fingers.

Deutsche medizinische Wochenschrift, Berlin and Lepisic.

68 (XXXI, No. 32, August 10.) *Die congenitale Coxa vara. A. Hoffa.
69 Histologische Untersuchungen über die Einwirkung der Finsen-Bestrahlung bei Lupus. J. Doutrelepont.
70 New, Effective, Soluble Element in Ergot.—Ueber einen neuen, wirksamen, wasserlöslichen Bestandteil des Mutterkorns. E. Vahlen.
71 *Mammary Tumors.—Die operative Behandlung der Geschwulste der weiblichen Brust. E. Braatz.
72 Zur Pathogenetischen Bedeutung des Bacillus funduliformis. Kiskalt.
73 *Beitrag zur Pathogenese des chronischen Magengeschwurs (gastric ulcer). C. E. Bloch. (Commenced in No. 31.)
74 Cooling Box for Milk.—Kühlkisten zur Kühlung der Säuglingsmilch im Hause. A. Speck.

68. **Congenital Coxa Vara.**—Hoffa shows by Roentgen pictures that there is a sharp distinction between the congenital and the traumatic or rachitic coxa vara. He thinks the former is the result of some arrest of growth during intrauterine existence, probably due to some affection of the bone. He has encountered six unilateral and five bilateral cases.

71. **Operative Treatment of Tumors in Female Breast.**—Braatz urges the removal of every lump in the breast, even when positively benign, as it may become cancerous later. The benign tumors he cuts out with the scissors under local anesthesia, keeping close to the tumor. General anesthesia is imperative for cancerous growths. For several reasons he urges that an ulcerating cancer should be kept covered tight. Sometimes the growth will heal over under a zinc vaselin dressing. He comments on the way in which a woman with an ulcerating cancer will finger the growth and then shake hands with friends and handle articles in constant use in the family. He does not advise an operation for far advanced carcinoma in elderly women, but insists on the protecting dressing. In removing a cancerous growth, he removes both pectoral muscles with it. Functional disturbances from loss of these muscles are readily prevented by certain exercises which he describes. In order to have complete oversight over the axilla, he carries the incision back to the margin of the latissimus dorsi and makes another, perpendicular incision extending upward to the junction of the middle and outer thirds of the clavicle.

73. **Pathogenesis of Chronic Gastric Ulcer.**—Bloch believes that the reason why ulcers develop more frequently near the pylorus is because this part of the stomach is not subject to such contraction as the greater curvature. When the walls contract over a lesion it is more apt to heal than when it is left open, exposed to the action of the gastric juice. The primary lesion must be often a slight necrosis from some small hemorrhage. This loosens the epithelium and leads to the necrosis, and this, in time, if unprotected, leads to erosion from the gastric juice and ulceration. Attempts to produce a gastric ulcer were successful only when they included some injury to the nerves.

Münchener med. Wochenschrift, Munich.

75 (LII, No. 31, August 1.) *Ueber das Vorkommen von Typhus bazillen in der Galle von Typhuskranken und "Typhusbazillentragern" (bacilli in gall bladder). F. Forster and H. Kayser.
76 Ueber Multiplizität von Tumoren. S. Oberndorfer.
77 *Zur Nachweis der Spirochaete pallida im Blut Syphilitischer. C. T. Noeggerath and R. Staehelin.
78 *Die radikale Heilung der durch Prostatahypertrophie bedingten Harnverhaltung mittelst Prostatectomia suprapubica totalis. Rebentisch.
79 Passage of Ankylostoma Larvæ Through Intact Skin.—Die Durchwanderung der Ankylostomalarven durch die menschliche Haut. H. Bruns.
80 Modified Counting-Chamber Stain.—Eine Modifikation der Zollikoferschen Kammerfärbungsmethode. W. Riebes.
81 *Operations to Reduce Size of Nose.—Weiteres über Nasenverkleinerung. J. Joseph.
82 Tracheal Hook.—Einfache Trachealhaken zum Gebrauche beim Kanulenwechsel. v. Stubenrauch.
83 *Determination of Acidity in Stomach Content.—Ueber die Säurebestimmung im Mageninhait. H. Leo.
84 *Ueber Cytotoxine, mit besonderer Berücksichtigung der Ovariotoxine und Thyreotoxine. H. Lüdke. (Commenced in No. 30.)
85 *Influence of Bicycling on Heart.—Der Einfluss des Radfahrens auf das Herz. Beyer. (Commenced in No. 30).
86 *Physicians in Politics.—Aerzte in der Politik. W. Kühn (Leipsic).
87 (No. 32.) Simple Hemometer.—Ein einfacher Hämometer fur den praktischen Arzt. H. Breyer.
88 *Face Presentations.—Lässt die Haltungsverbesserung bei Gesichtslagen einen besonderen Vorteil erwarten? O. v. Herff.
89 *Zur Kenntnis der Fruktosurie. O. Neubauer.
90 *Depressive Conditions in the Aged.—Die Depressionszustande des hoheren Lebensalters. R. Gaupp.
91 *Action of Digitalis on Sound Subjects.—Ueber Digitaliswirkung am gesunden Menschen. A. Fraenkel.
92 *Permeability of Gastrointestinal Walls in Newborn Animals.—Die Durchgängigkeit des Magendarmkanales neugeborener Tiere für Bakterien and genuine Eiweissstoffe. A. Uffenheimer.
93 *Red Light and Scarlet Fever.—Ueber den Einfluss des roten Lichtes auf Scharlachkranke, welcher im Nürnberger Kinderspital beobachtet wurde. Cnopf.
94 *Ueber die Leberfistel (Hepatostomie). F. Cahen.
95 *Infant Mortality and Survivals.—Sauglingsmortalitat und Auslese im Darwinschen Sinne. H. Koeppe.

75. **Typhoid Bacilli in Bile of Typhoid Patients.**—Recent experiences by Forster and Kayser indicate that the gall bladder is the lurking place of typhoid bacilli, both in man and in animals. The bacilli linger here and propagate, and are frequently found years after the typhoid fever when attention is attracted to the gall bladder by lithiasis. The cases in which bacilli are eliminated in the feces occasionally in persons apparently healthy, is explained by the finding of these nests of bacilli in the gall bladder. As they are eliminated in the bile, the fact that they do not cause disease may be explained by assuming that the course of the digestive tract below the gall bladder does not contain any portals of entry for these germs. This is an argument in favor of the tonsillar etiology of typhoid. Or it may be that the intestinal tract may have acquired a local active immunity. It is possible also that after subsidence of the irritation in the gall bladder the typhoid germs may die out—an argument in favor of surgical removal of gallstones in such cases. In the cadaver of a woman of 84 who had succumbed to pneumonia, the gall bladder was found chronically inflamed and full of

stones. A few cultures of the colon bacillus developed from .05 c.c. of bile, with innumerable typhoid bacilli. Nothing was known of typhoid in her previous history. In another case, paratyphoid bacilli were found in pure cultures in the bile of a woman of 74 with cholelithiasis. No symptoms of the latter and no history of typhoid had been known during life. In the case of a woman of 40 there have been severe attacks of gallstones yearly for several years. The patient is otherwise healthy, although with a history of typhoid at 10. Typhoid bacilli are found intermittently in the stools and the agglutination test is positive at 1/1,000, macroscopic in three hours. In another case, a woman of 64 had an attack of typhoid fever and typhoid cholangitis. Since then typhoid bacilli are found intermittently in the stools and agglutination is positive at 1/1000. There have been occasional gallstone attacks since the first. Only one of the five cases described occurred in a man. Typhoid bacilli were found in the gall bladder and evidences of cholecystitis, although he had not presented any appreciable symptoms of cholelithiasis. The year before his death he had passed through a mild febrile affection suspiciously like typhoid. In regard to treatment to expel the bacilli from the system, the prospects of immunization processes do not seem very promising, but treatment of the gall bladder seems to offer a chance for success. By doing away with the residual bile the conditions become much less favorable for the growth of the bacilli, and by inducing a copious secretion of bile the germs are liable to be entirely washed away. Surgical intervention might also be considered in case of chronic "bacilli bearers," as this would suppress the focus.

77. **Spirochetes in the Blood of Syphilitics.**—The spirochetes were found in the blood of a number of cases of secondary untreated syphilis. About 1 c.c. of blood was mixed with ten times as much 0.3 per cent. acetic acid. The blood thus dissolved was centrifuged and the Giemsa stain applied. The preceding acetic acid does not interfere with the action of the stain if the specimens are left in it for several hours.

78. **Suprapubic Total Prostatectomy.**—Rebentisch describes four cases of retention from hypertrophied prostate in extremely decrepit men treated with brilliant results by suprapubic removal of the entire prostate. He reviews the history of this intervention and describes the Freyer technic which he follows. It allows complete oversight of the bladder, and is the operation to be selected in case of large tumors and for those in which preceding catheterization is impossible for any reason, or in which the diagnosis is still vague after exhausting all known methods of research. Small, hard, fibrous tumors can be readily removed by way of the perineum, and this route is also to be preferred in case of contracted bladder. In all other cases the choice of the route may depend on the operator's personal preference.

81. **Correction of Abnormally Large Noses.**—Joseph has had considerable experience with operations to reduce the size of unduly large noses. His illustrations show the fine results attained without leaving a trace of a scar. The intranasal technic which he has finally perfected consists of an incision parallel with the edge of the nostril, at the point where the new edge is to be made. He then resects on both sides the median portion of the cartilage framework and sometimes part of the lateral segment of the alar cartilage. The skin of the septum is so elastic that it adapts itself to the altered shape of the nose, not requiring excision. It is sutured with a few delicate stitches to the quadrangular cartilage. By this technic there is not a trace of a scar, either on the external nose nor in the septum. Another improvement in his technic is the substitution of local for general anesthesia. He finds a mixture of adrenalin and cocain sufficient for the purpose. His experience with 100 operations of the kind has shown that this technic is entirely free from danger; the after-treatment requires only a week or two. Some of his patients were actors and actresses whose homely noses interfered with their obtaining engagements. The results have been exceedingly satisfactory in every instance.

83. **Determination of Stomach Acidity.**—Leo replies to criticisms that have been made in regard to his technic for determining the acidity of the stomach content and reaffirms its accuracy and reliability. It shows the total acidity, both the free HCl and that in combination with albuminoids, including the albumoses and the peptones. The total acidity is represented by the amount of $CaCO_3$ necessary to neutralize it. The acidity of the remaining acid residue after neutralization with $CaCO_3$ is due to the biphosphates and the albuminoids, exclusive of the true peptones.

84. **Cytotoxins.**—Lüdke concludes his extensive study of the subject of specific cell toxins and antisera with the statement that to date the action of the various cell toxins is confusing. They intermingle and the products resulting from their action serve further to confuse the resulting picture. The specific action of the cell toxins must be rendered more intense and more specific before satisfactory results can be attained with them.

85. **The Bicycle and the Heart.**—Beyer's investigation of the influence of bicycling on the heart has convinced him that the bicycle has a specifically injurious action on that organ. The heart in the young is particularly subject to this deleterious influence on account of the unfavorable conditions of the blood pressure in youth. Hypertrophy of the heart and nervous heart disturbances are the typical bicyclers' affections. It has been found in Germany that the number of cases of acute articular rheumatism among the recruits has materially diminished of late years, while the number of heart affections has tripled. In one army corps, out of 233 recruits with various heart affections, 41 had been bicyclers, as also 9 of the 18 patients with hypertrophy of the heart, and 8 out of the 37 patients with nervous irregularity in the heart action. In another corps, the proportion was 37.5 per cent. in 293 cases of heart affections, with 23 out of the 52 cases of hypertrophy and 9 out of the 22 of nervous irregularity. He found further that among these recruits those who had previously led a sedentary life formed the largest contingent of heart affections among bicyclers. On Sundays and holidays they took long bicycle trips with overexertion of the heart. Next in number were the workmen who rode the bicycle to and from work. The exertion after the fatigue of the day's work caused overexertion of the heart. The recruiting officers attribute the increase in heart disease among the young men to the lesser hardiness of youth in our day and to the epidemic of influenza. Beyer suggests that unwise or immoderate bicycle riding is a third and no less important factor.

86. **Physicians in Political Life.**—Kühn remarks that medical men take less part in political life than the members of other professions, as a busy physician has little opportunity to mix in public affairs. He reviews the conditions in various countries in this respect. France has invariably taken the lead, physicians always being numerous in her legislature. Cornil and several others are now in the senate, and there are 60 medical men in the house of deputies. When Combes was prime minister there were three physicians in the cabinet. In Italy, prominent medical men are sometimes appointed to the cabinet; Bianchi and Baccelli have thus had cabinet positions in late years and a few physicians are members of the senate. In Spain, physicians are frequently party leaders, and always have a large representation in the legislature, Dr. C. M. Cortezo having recently been appointed minister of public instruction. This participation of the medical profession in political affairs also prevails in Portugal to a lesser extent. There seems to be little of it in Denmark; only one medical man has been in the legislature for several years. The people there are comparatively well educated, and the members of the overcrowded medical profession are unable to maintain the intellectual supremacy which would make them leaders in political matters. He reviews the conditions in Canada, Australia and in southeastern Europe, drawing the conclusion that it is highly important for the members of the medical profession in every country to unite in a firm organization, and following the principle, "In union there is strength," to make their influence felt on all sides and to have their interests represented, especially in legislative bodies. He adds that he is proud to say that Germany can serve as a shining example to all other lands in this respect. Virchow showed long ago what great benefits

result from such a combination, both in political life and in local affairs. He concludes with the prayer that it may be possible to bring numbers of physicians into the national and state legislatures, and that they may all labor for the rights of the medical profession as zealously as Mugdan, their present representative in the German Reichstag.

88. **Face Presentations.**—In twelve years of experience, von Herff has had 21 face presentations in which he interfered to change the presentation, and 6 of the children were born dead. In another series of 76 cases of face presentation in which no intervention was attempted, all the children were born alive except 4. Fehling's and Bumm's statistics give similar results. All the mothers were dismissed in good health. These results indicate that it is unwise to attempt to change the presentation unless forced to hasten the course of the delivery for other reasons or from fear of rupturing the perineum. The birth should be carefully supervised, listening for the heart sounds, and interfering only when pressing indications arise. In case of forehead presentation, however, an attempt should be made to transform it into occipital presentation or, if this is not possible, into face presentation if any intervention is deemed advisable.

89. **Fructosuria.**—Neubauer has encountered a case of pure fructosuria (levulosuria), in which no sugar except the fructose was eliminated in the urine. He knows of only two similar cases on record. On a diet free from carbohydrates the fructose vanished entirely from the urine. Cases of mixed melituria are not uncommon, and he reviews the differences and analogies between these groups and describes a number of interesting tests and experiments with his patients.

90. **Depression in the Aged.**—Gaupp presents here a careful study of the conditions of depression in 300 cases at Kraepelin's clinic in which the patients were all over 45. He also refers to 51 cases of mania, grouping them all by the various manifestations of the mental affection. Simple and periodical mania was more frequent in men than in women, while the conditions with depression were more frequent in women at this age.

91. **Action of Digitalis on Sound Circulation.**—Fraenkel was able to retard the pulse in sound subjects by administering strophanthus, without any by-effects. There was no increase in the blood pressure. If he prevented the slowing of the pulse by giving atropin, then the blood pressure rose above normal. The slowing of the pulse is thus the factor which prevents the increased blood pressure under the action of digitalis.

92. **Permeability of Alimentary Canal for Bacteria.**—Uffenheimer has been studying the permeability of the gastrointestinal walls of newborn animals. He found that the mucous membrane of guinea-pigs did not allow the passage of anything but tubercle bacilli and antitoxin, but that in rabbits and other animals large amounts of albumin and other substances were absorbed as well as antitoxin, etc. The mucosa of the alimentary canal, therefore, behaves differently in these various species.

93. **Red Light in Scarlet Fever.**—Cnopf's communication was reviewed editorially on page 793.

94. **Hepatostomy.**—Cahen relates that he succeeded in saving a patient with a severe pyemic gallstone affection by making an opening into the gall bladder. More radical intervention was impossible on account of extensive adhesions, cholemia and tendency to hemorrhage. The only choice was between hepatoenterostomy and hepatostomy. On account of the patient's extreme debility he decided on the latter operation, and it seemed to relieve the patient at once from his serious condition. Nine months later he was apparently in perfectly health, free from all disturbances, and attending to his daily work as a shoemaker. The canal was hollowed out in the liver tissue with the Paquelin cautery to avoid hemorrhage. Owing to the congestion in such cases, the outflow of bile even from the smaller biliary passages is copious and amply suffices to relieve the liver.

95. **Infant Mortality and Survival of the Fittest.**—Among the other points brought out in Koeppe's study of the lessons to be drawn from the statistics of infant mortality, may be mentioned his statement that a high infant mortality in a given year is always followed by a higher mortality among the surviving children in the second and third years thereafter. The reverse is also true, that the measures which reduce infant mortality serve to strengthen the surviving children so that more pass successfully through the second and third years.

Books Received

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. XVII. Seventeenth Session Held at Birmingham, Ala., December 13-15, 1904. Edited by W. D. Haggard, M.D. Cloth. Pp. 521. Published by the Association. 1905.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY. Second Series. Vol. X. M—Mnikhovski. Cloth. Pp. 935. Washington: Government Printing Office. 1905.

HANDBOOK OF PHYSIOLOGY. For Students and Practitioners of Medicine. By A. Flint, M.D., LL.D. 247 Illustrations—4 in Colors. Cloth. Pp. 877. Price, $5.00 net. New York: MacMillan Co. 1905.

STATIC, HIGH FREQUENCY, RADIO, PHOTO AND RADIUM THERAPY. By W. H. King, M.D., LL.D. Cloth. Pp. 291. Price, $2.50. New York: Boericke & Runyon. 1905.

ABDOMINAL OPERATIONS. By G. A. Moynihan, M.S., F.R.C.S. Fully Illustrated. Cloth. Pp. 694. Price, $7.00. Philadelphia: W. B. Saunders & Co. 1905.

ATONIA GASTRICA (Abdominal Relaxation), by A. Rose, M.D., and R. C. Kemp, M.D. Cloth. Pp. 203. Price, $1.00 net. New York: Funk & Wagnalls Co., 1905.

PRACTICAL MASSAGE IN TWENTY LESSONS. By H. Nissen. 46 Illustrations. Cloth. Pp. 167. Price, $1.00 net. Philadelphia: F. A. Davis & Co. 1905.

RADIUM AND RADIO-ACTIVITY SUBSTANCES. By C. Baskerville, Ph.D. Cloth. Pp. 164. Price, $1.00. Philadelphia: Williams, Brown & Earle.

CLEFT PALATE AND HARE LIP. By W. A. Lane, M.S., F.R.C.S. Paper. Price, 5 S. Pp. 63. London: Medical Publishing Company. 1905.

NEW PATENTS.

Patents of interest to physicians, etc., recently granted:

797838. Tablet-molding press. James F. Buckley, Ilford, England.
797718. Portable *x*-ray apparatus. Eugene W. Caldwell, New York.
797792 Alkyl-oxy-acetyl urea and making same. Erik C. Clemmensen, and A. H. C. Heitmann, Detroit.
798013. Antiseptic compound. Alphonso M. Clover, Ann Arbor, Mich.
797696. Vaginal syringe. Willis P. Flowers, Scranton, Pa.
797707. Obstetrical pad. Emmeline H. Pearson, Washington, D. C.
797607. Invalid-table. John H. Ramberg, Brooklyn.
797644. Pill-tile. Walter E. Trahern, Hopkinsville, Ky.
12384. Re-issue. Apparatus for generating formaldehyd. Edgar F. Billings, Boston.
798093. Hypodermic syringe. Edward F. Dean, Denver.
798205. Making nitric acid. Heinrich H. Neidenfuhr, Halensee, Germany.
798208. Making sodium ferrocyanid. Camille Petri, Buchsweiler, Germany.
798457. Self galvanic massage apparatus. Sven R. E. Schmidt, St. George, S. I., N. Y.
798367. Obstetrical appliance. Joseph H. F. Smokey, Natchez, Miss.
798464. Support for prolapsed uterus. Lewis G. Sprague, Henderson, N. Y.
798149. Stopper for water bags. Charles O. Towne, Torrington, and J. H. Woodward, Waterbury, Conn.
798239. Apparatus for producing carbonic acid. Gregor Walzel, Newark, N. J.
798893. Breast-pump. Uberto D. Ezell, Kimball, Texas.
798908. Apparatus for carrying out bacterial purification of sewage or drain water. Christoph Kremer, Gross Lichterfelds, near Berlin, Germany.
798611. Surgical appliance. Willard F. Main, Iowa City, Iowa.
798920. Reducing oxalic acid and its derivatives by electrolysis. Emil von Portheim, Prague, Austria-Hungary.
798833. Intermittent movement in pasteurizers. Wm. J. Ruff, Quincy, Ill.
798852. Anesthetic generator and mixer. David D. Weisell, Fort Wayne, Ind.
799216. Syringe. Frank C. Barnes, Fremont, Ohio.
799166. Package for surgical ligatures. Robert W. Johnson, New Brunswick, N. Y.
799272. Medical and surgical vibrator. Harold W. Shonnard, East Orange, N. J.
799114. Speculum. Crispus D. Tracey, Little Rock, Ark.
799702. Operating table. Ashbel P. Barlow, St. Joseph, Mich.
800071. Obstetrical appliance. Richard H. Cheatham, Vermont, Ill.
799895. Massage appliance. John D. Doughty, and J. R. Sanford, Conn.
800087. Chemical apparatus. David Genese, Baltimore.
799568. Ear trumpet. George G. Lewis, Syracuse, N. Y.
799664. Apparatus for treating ankylosis of the knee. Robert R. Norwood, Mineralwells, Texas.
799806. Nursing bottle. Ernest H. Simonds, Berkeley, Cal.
799881. Massage device. Jerome B. Wells, Cleveland, Ohio.

PRESERVATION REVIEW

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